

A Joint Standard of ITE / AASHTO

TMDD Standard v03.03d

Traffic Management Data Dictionary (TMDD) Standard for the Center to Center Communications

December 15, 2016

Volume II Design Content

Published by

American Association of State Highway and Transportation Officials (AASHTO)

444 North Capitol Street, N.W., Suite 249

Washington, D.C. 20001

Institute of Transportation Engineers (ITE)

1627 Eye Street, N.W., Suite 600

Washington, D.C. 20006

Copyright Notice

©Copyright 2016 by the American Association of State Highway and Transportation Officials (AASHTO), and the Institute of Transportation Engineers (ITE). All intellectual property rights, including, but not limited to, the rights of reproduction, translation and display are reserved under the laws of the United States of America, the Universal Copyright Convention, the Berne Convention, and the International and Pan American Copyright Conventions. Except as licensed or permitted, you may not copy these materials without prior written permission from AASHTO or ITE. Use of these materials does not give you any rights of ownership or claim of copyright in or to these materials.

AASHTO / ITE do not warrant the performance or results you may obtain by using these materials. AASHTO / ITE make no warranties, express or implied, as to noninfringement of third party rights, merchantability, or fitness for any particular purpose. In no event will AASHTO / ITE be liable to you or any third party for any claim or for any consequential, incidental or special damages, including any lost profits or lost savings, arising from your reproduction or use of these materials, even if an AASHTO / ITE representative has been advised of the possibility of such damages.

Some states or jurisdictions do not allow the exclusion or limitation of incidental, consequential or special damages, or the exclusion of implied warranties, so the above limitations may not apply to you.

Use of these materials does not constitute an endorsement or affiliation by or between AASHTO or ITE and you, your company, or your products and services.

If you are unwilling to accept the foregoing restrictions, you should immediately return these materials.

Content and Liability Disclaimer

The information in this publication was considered technically sound by the consensus of persons engaged in the development and approval of the document at the time it was developed. Consensus does not necessarily mean that there is unanimous agreement among every person participating in the development of this document.

AASHTO and ITE standards and guideline publications, of which the document contained herein is one, are developed through a voluntary consensus standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. While AASHTO and ITE administer the process and establish rules to promote fairness in the development of consensus, they do not write the document and they do not independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in their standards and guideline publications.

AASHTO or ITE disclaim liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, application, or reliance on this document. AASHTO and ITE disclaim and make no guaranty or warranty, express or implied, as to the accuracy or completeness of any information published herein, and disclaims and makes no warranty that the information in this document will fulfill any of your particular purposes or needs. AASHTO and ITE do not undertake to guarantee the performance of any individual manufacturer or seller's products or services by virtue of this standard or guide.

In publishing and making this document available, AASHTO or ITE are not undertaking to render professional or other services for or on behalf of any person or entity, nor are they undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances. Information and other standards on the topic covered by this publication may be available from other sources, which the user may wish to consult for additional views or information not covered by this publication.

AASHTO and ITE have no power, nor do they undertake to police or enforce compliance with the contents of this document. AASHTO and ITE do not certify, test, or inspect products, designs, or installations for safety or health purposes. Any certification or other statement of compliance with any health or safety-related information in this document shall not be attributable to AASHTO or ITE and is solely the responsibility of the certifier or maker of the statement.

Trademark Notice

TMDD is a trademark of AASHTO / ITE. All other marks mentioned in this document are the trademarks of their respective owners.

Acknowledgements

This document was produced under contract to the Institute of Transportation Engineers (ITE), which, with the American Association of State Highway and Transportation Officials (AASHTO), is working under a **cooperative agreement** with the Federal Highway Administration (FHWA). The ITS Joint Program Office (JPO) of Research and Innovative Administration (RITA) provided oversight and program management for the US Department of Transportation (USDOT). The Traffic Management Data Dictionary (TMDD) Steering Committee and a special review subcommittee provided technical oversight of this development.

The project team responsible for the development of this document included the following company:

- Consensus Systems Technologies (ConSysTec)

The TMDD Steering Committee also received input and review from the following groups during the development of TMDD Version 3.0 (TMDD v3.0):

- IEEE 1512 Incident Management Working Group
- National Transportation Communications for ITS Protocol (NTCIP)
- Society of Automotive Engineers (SAE)

TMDD Steering Committee

At the time that this document was prepared, the following individuals were members of the TMDD Steering Committee:

- | | |
|------------------------------------|--------------------------------------|
| • Morgan Balogh, WSDOT | • Raman Patel, RK Patel & Associates |
| • Tom Batz, TRANSCOM | • Robert Rausch (Chair), TransCore |
| • Steve Dellenback, SWRI | • Edward Seymour, TTI |
| • Israel Anthony Lopez, Nevada DOT | • Mike Jenkinson, CalTrans |
| • Glenn Massarano, Siemens ITS | • Peter Thompson, SANDAG |
| • Greg Mizell, Econolite | • Kenneth Vaughn, Trevilon |

Additional Contributors and Reviewers

In addition to the TMDD Steering Committee, there were many others that contributed to the development of this standard and their input and assistance was critical to the final product. The following list includes those volunteers and others who gave their time to help both the consultant and the committee ensure that the resulting standard met their needs. Of particular interest were participation by representatives of LA County and LA DOT which provided extensive input regarding data exchanges for cooperative traffic control of surface streets. In addition to this arena, the new version of the TMDD has been expanded to support exchanges regarding roadway weather and archived data user services.

Finally, the committee acknowledges the assistance and input provided by the FHWA western Resource center by Edward Fok and the guidance and assistance received from Noblis by Blake Christie and Jeris White.

The following is a more complete list of those who volunteered their time and travel to contribute to the input and review during the development of this standard:

Contributor	Affiliation
• Marty Amundson	Los Angeles County Department of Public Works
• Igor Babaryko	IBI Group
• Brenda Boyce	Mixon/Hill
• William (Bill) Brownlow	AASHTO
• Jeff Brummond	Iteris
• Patrick Chan	Consensus Systems Technologies
• Allen Chen	CalTrans
• Sean Coughlin	CalTrans
• Walter Crear	TransCore
• Peter Davies	Castle Rock
• Bruce Eisenhart	Consensus Systems Technologies
• Marc Forgang	Telvent Farradyne
• Jorge S. Fuentes	CalTrans
• J. Kyle Garrett	Mixon/Hill
• Ralph Gillmann	FHWA
• Julie Gonzalez	CalTrans
• Tomas Guerra	Oz Engineering
• Manny Insignares	Consensus Systems Technologies
• David Kelley	ITSWare
• Rich Margiotta	Cambridge Systematics
• James Pol	FHWA
• Patrick Powell	Astart Technologies
• Canny Quach	City of LA DOT
• Ahmad Rastegarpour	CalTrans
• Faisal Saleem	Maricopa County Department of Transportation
• Jane White	Los Angeles County Department of Public Works

Foreword

The two volumes of this information level standard publication define a high level Concept of Operations and Requirements (Volume I) and Design Concepts (Volume II) for exchanging information between traffic management centers (TMCs) and other external centers (EC). The material provided by this document is used to develop a communications *System Interface* (SI) for center-to-center (C2C) information exchange.

For more information about AASHTO standards, visit the AASHTO Web site at www.aashto.org. For a hardcopy summary of AASHTO information, contact the AASHTO coordinator at the address below.

For more information about ITE standards, visit the ITE Web site at www.ite.org. For a hardcopy summary of ITE information, contact the ITE coordinator at the address below.

In preparation of this document, input of users and other interested parties was sought and evaluated. Inquires, comments and proposed or recommended revisions should be submitted to:

Mark S. Bush, PE, PTOE
Program Manager for Transportation
Engineering Applications
American Association of State Highway
and Transportation Officials (AASHTO)
444 North Capitol St., NW, Suite 249
Washington, DC 20001
Phone: 202-624-8913
mbush@aaashto.org

Siva R. K Narla
Transportation Technology
Senior Director
Institute of Transportation Engineers
1627 Eye Street, NW Suite 600
Washington, DC 20006
Phone: 202-785-0060
snarla@ite.org

History

A summary of the changes in TMDD v3.03, v3.02 and v3.01 from TMDD v3.0 can be found in Volume I.

Introduction

This publication is a maintenance update of TMDD V3.0, published on November 12, 2008. This maintenance update adds performance requirements to the standard, addresses several comments received on the standard, and corrects several errors that were found in the traceability tables.

The previous maintenance update, v3.03c includes changes to the traceability matrices to improve its usability and reduce ambiguities, adds a section on performance requirements, addresses comments received, and corrects several errors that were found in the traceability tables.

Maintenance update, v3.02, adds support for sharing hazmat-incident related information to close a gap that is critical to national and regional security. Maintenance update v3.01 corrected errors that were discovered by implementing TMDD V3.0, clarifies some ambiguities that were encountered, reorganizes user needs and requirements to better support interoperability, and includes some changes in the Requirements Traceability Matrix (RTM) to clarify traceability. The document has been given a new title that reflects the intent and the content.

This document provides the foundation of the Center-to-Center (C2C) Concept of Operations and Requirements for Advanced Traffic Management System (ATMS). It should be noted that the ATMS is a very complex system and there are many other standards that are necessary for development and C2C operations. This document, however addresses the most fundamental elements of an ATMS.

This document is intended primarily for the following audience:

- Transportation operations managers
- Transportation operations personnel
- Transportation engineers
- Transportation management procurement officers
- System integrators
- Device manufacturers

C2C communications can be used to:

- Provide event information to other centers;
- Provide traffic and travel data to other centers;
- Help coordinate operations within the defined C2C network; and
- Provide remote control of traffic control devices.

The C2C environment is operationally diverse. All of the systems that exchange information do not serve the same functions but do use the Traffic Management Data Dictionary (TMDD) Standard for Center-to-Center Communications, hereafter referred to as the TMDD, for data exchanges among centers. Even systems with the same functions may not operate identically. This diversity requires both a flexible approach to the required content in each data exchange and a rigorous definition of the data being exchanged.

The C2C environment is sparsely deployed. There have been few large integrated regional deployments, so operational experience is available only from a few sites. The

time to fully deploy a regional or statewide system may be lengthy, covering five years or more. The overall approach to standards needs to support the replacement of nearly all C2C software over time.

The ITS standards development process uses a systems engineering process that requires a Concept of Operations (ConOps) document to define user needs. Further, the established system engineering process states that requirements must only be developed for those functions or operations for which a need has been established.

The ConOps and Requirements stage in this process is to identify and operationally describe the ways in which the system will be used. In the case of this document, this entails identifying the various ways in which those addressed above may use C2C connections to other centers to fulfill their duties. This ConOps and Requirements provides the reader with:

1. A detailed description of the scope of this standard;
2. An explanation of what operations the C2C connections provide;
3. A starting point in the procurement process; and
4. An understanding of the perspective of the designers of the standard.

The ConOps and Requirements are independent of the underlying C2C protocols, such as DATEX (DATA EXchange), XML (eXtensible Markup Language), or other. The protocols are transparent to the system operators and no references to the specific features provided by an underlying protocol are part of the ConOps.

The design stage of the systems engineering process specifies a solution based on the requirements. The design contains definitions of TMDD data concepts (dialogs, messages, data frames, data elements and object classes) written in ISO 14817 compliant Abstract Syntax Notation (ASN.1) and in XML schema.

Contents

1 Document Introduction	1
1.1 Purpose.....	1
1.2 Background	1
1.3 Approach.....	2
1.4 Document Purpose and Organization	2
2 TMDD Interface Dialogs and Messages.....	4
2.1 Normative	4
2.1.1 TMDD Electronic Design Files	4
2.1.2 TMDD Support Electronic Design Files.....	4
2.1.3 TMDD ISO 14817 and ASN.1.....	5
2.1.4 TMDD WSDL and XML Schema	5
2.2 Tutorial.....	6
2.2.1 What is a Dialog?.....	6
2.3 Defining the Dialog Sequence	7
2.3.1 Defining Message Patterns, Encoding and Transport.....	7
2.3.2 NTCIP 2304 Overview	7
2.3.3 NTCIP 2306 Overview	8
2.3.4 NTCIP 2304 and 2306 Message Patterns	8
2.3.4.1 Specifying NTCIP 2304 Message Patterns.....	8
2.3.4.2 Specifying NTCIP 2306 Message Patterns.....	8
2.4 Generic TMDD Dialogs.....	8
2.4.1 Generic Request-Response Dialog	9
2.4.1.1 Description.....	9
2.4.1.2 Sequence Diagram	9
2.4.2 Generic Subscription Dialog.....	9
2.4.2.1 Description.....	9
2.4.2.2 Sequence Diagram	10
2.4.3 Generic Publication Update Dialog	10
2.4.3.1 Description.....	10
2.4.3.2 Sequence Diagram	10
2.5 Handling of Null Data Values.....	11
2.5.1 Handling of Null Data Values for Mandatory Data Elements	11
2.6 Handling TMDD Extensions	11
2.6.1 Extending Dialogs.....	12
2.6.2 Extending Messages and Data Frames	12
2.6.2.1 ASN.1.....	12
2.6.2.2 XML.....	12
2.6.3 Extending Enumerations.....	13
2.6.4 Extending Ranges	13
2.7 TMDD ASN.1 Object Identifiers.....	14
3 TMDD ISO 14817 ASN.1 and XML Data Concept Definitions.....	15
3.1 Dialogs	15
3.1.1 ArchivedData Class Dialogs	15
3.1.1.1 dlArchivedDataTrafficMonitoringMetadataRequest.....	15
3.1.1.2 dlArchivedDataProcessingDocumentationMetadataRequest	16

3.1.2	CCTV Class Dialogs.....	17
3.1.2.1	dlCCTVInventoryRequest	17
3.1.2.2	dlCCTVStatusRequest	18
3.1.2.3	dlCCTVControlRequest.....	19
3.1.3	ConnectionManagement Class Dialogs	20
3.1.3.1	dlCenterActiveVerificationRequest.....	20
3.1.3.2	dlCenterActiveVerificationSubscription.....	21
3.1.4	Detector Class Dialogs.....	21
3.1.4.1	dlDetectorInventoryRequest	21
3.1.4.2	dlDetectorStatusRequest	22
3.1.4.3	dlDetectorDataRequest	23
3.1.4.4	dlDetectorDataSubscription.....	24
3.1.4.5	dlDetectorMaintenanceHistoryRequest	25
3.1.5	Device Class Dialogs	26
3.1.5.1	dlDeviceCancelControlRequest.....	26
3.1.5.2	dlDeviceControlStatusRequest	27
3.1.5.3	dlDeviceInformationSubscription.....	28
3.1.6	DMS Class Dialogs.....	29
3.1.6.1	dlDMSInventoryRequest	29
3.1.6.2	dlDMSStatusRequest	29
3.1.6.3	dlDMSMessageInventoryRequest	30
3.1.6.4	dlDMSMessageInventorySubscription	31
3.1.6.5	dlDMSMessageAppearanceRequest.....	32
3.1.6.6	dlDMSFontTableRequest	33
3.1.6.7	dlDMSControlRequest.....	34
3.1.6.8	dlDMSPriorityQueueRequest	35
3.1.7	ESS Class Dialogs.....	35
3.1.7.1	dlESSInventoryRequest	35
3.1.7.2	dlESSStatusRequest.....	36
3.1.7.3	dlESSObservationMetadataRequest	37
3.1.7.4	dlESSObservationReportRequest	38
3.1.8	Event Class Dialogs	39
3.1.8.1	dlFullEventUpdateRequest	39
3.1.8.2	dlEventIndexRequest	40
3.1.8.3	dlActionLogRequest	41
3.1.8.4	dlFullEventUpdateSubscription.....	42
3.1.8.5	dlEventIndexSubscription.....	43
3.1.8.6	dlActionLogSubscription.....	43
3.1.9	Gate Class Dialogs	44
3.1.9.1	dlGateInventoryRequest	44
3.1.9.2	dlGateStatusRequest	45
3.1.9.3	dlGateControlRequest.....	46
3.1.9.4	dlGateControlScheduleRequest	47
3.1.10	HAR Class Dialogs	48
3.1.10.1	dlHARInventoryRequest.....	48
3.1.10.2	dlHARMessageInventoryRequest.....	49

3.1.10.3	dlHARStatusRequest	49
3.1.10.4	dlHARControlRequest.....	50
3.1.10.5	dlHARControlScheduleRequest	51
3.1.10.6	dlHARPriorityQueueRequest	52
3.1.11	IntersectionSignal Class Dialogs	53
3.1.11.1	dlIntersectionSignalInventoryRequest.....	53
3.1.11.2	dlIntersectionSignalStatusRequest.....	54
3.1.11.3	dlIntersectionSignalTimingPatternInventoryRequest.....	55
3.1.11.4	dlIntersectionSignalTimingPatternInventorySubscription	56
3.1.11.5	dlIntersectionSignalControlRequest	57
3.1.11.6	dlIntersectionSignalControlScheduleRequest.....	58
3.1.11.7	dlIntersectionSignalPriorityQueueRequest.....	58
3.1.12	LCS Class Dialogs	59
3.1.12.1	dlLCSInventoryRequest.....	59
3.1.12.2	dlLCSStatusRequest	60
3.1.12.3	dlLCSControlRequest	61
3.1.12.4	dlLCSControlScheduleRequest	62
3.1.13	Link Class Dialogs.....	63
3.1.13.1	dlLinkInventoryRequest	63
3.1.13.2	dlLinkStatusRequest	64
3.1.14	Node Class Dialogs.....	65
3.1.14.1	dlNodeInventoryRequest	65
3.1.14.2	dlNodeStatusRequest.....	65
3.1.15	Organization Class Dialogs.....	66
3.1.15.1	dlOrganizationInformationRequest.....	66
3.1.15.2	dlOrganizationInformationSubscription	67
3.1.16	RampMeter Class Dialogs	68
3.1.16.1	dlRampMeterInventoryRequest.....	68
3.1.16.2	dlRampMeterStatusRequest.....	69
3.1.16.3	dlRampMeterControlRequest	70
3.1.16.4	dlRampMeterControlScheduleRequest.....	71
3.1.16.5	dlRampMeterPriorityQueueRequest.....	72
3.1.16.6	dlRampMeterPlanInventoryRequest.....	72
3.1.16.7	dlRampMeterPlanInventorySubscription	73
3.1.17	Route Class Dialogs.....	74
3.1.17.1	dlRouteInventoryRequest	74
3.1.17.2	dlRouteStatusRequest	75
3.1.18	Section Class Dialogs	76
3.1.18.1	dlSectionStatusRequest.....	76
3.1.18.2	dlSectionControlRequest	77
3.1.18.3	dlSectionControlScheduleRequest.....	78
3.1.18.4	dlSectionControlStatusRequest.....	79
3.1.18.5	dlSectionPriorityQueueRequest.....	79
3.1.18.6	dlSectionSignalTimingPatternInventoryRequest.....	80
3.1.18.7	dlSectionSignalTimingPatternInventorySubscription	81
3.1.19	TransportationNetwork Class Dialogs.....	82

3.1.19.1	dlTrafficNetworkInformationSubscription	82
3.1.20	VideoSwitch Class Dialogs.....	83
3.1.20.1	dlVideoSwitchInventoryRequest	83
3.1.20.2	dlVideoSwitchStatusRequest.....	84
3.1.20.3	dlVideoSwitchControlRequest	85
3.1.21	CCTV Class Dialogs.....	86
3.1.21.1	dlCCTVInventoryUpdate.....	86
3.1.21.2	dlCCTVStatusUpdate	87
3.1.22	ConnectionManagement Class Dialogs	88
3.1.22.1	dlCenterActiveVerificationUpdate	88
3.1.23	Detector Class Dialogs.....	89
3.1.23.1	dlDetectorInventoryUpdate.....	89
3.1.23.2	dlDetectorStatusUpdate	90
3.1.23.3	dlDetectorDataUpdate.....	91
3.1.24	DMS Class Dialogs.....	92
3.1.24.1	dlDMSInventoryUpdate.....	92
3.1.24.2	dlDMSMessageInventoryUpdate.....	93
3.1.24.3	dlDMSStatusUpdate	94
3.1.25	ESS Class Dialogs.....	95
3.1.25.1	dlESSInventoryUpdate	95
3.1.25.2	dlESSStatusUpdate	96
3.1.25.3	dlESSObservationReportUpdate.....	96
3.1.26	Event Class Dialogs	97
3.1.26.1	dlFullEventUpdateUpdate.....	97
3.1.26.2	dlEventIndexUpdate	98
3.1.26.3	dlActionLogUpdate.....	99
3.1.27	Gate Class Dialogs.....	100
3.1.27.1	dlGateInventoryUpdate.....	100
3.1.27.2	dlGateStatusUpdate.....	101
3.1.27.3	dlGateControlScheduleUpdate	102
3.1.28	HAR Class Dialogs	103
3.1.28.1	dlHARInventoryUpdate.....	103
3.1.28.2	dlHARMessageInventoryUpdate.....	104
3.1.28.3	dlHARStatusUpdate.....	105
3.1.28.4	dlHARControlScheduleUpdate.....	106
3.1.29	IntersectionSignal Class Dialogs	107
3.1.29.1	dlIntersectionSignalInventoryUpdate	107
3.1.29.2	dlIntersectionSignalTimingPatternInventoryUpdate	108
3.1.29.3	dlIntersectionSignalStatusUpdate	109
3.1.29.4	dlIntersectionSignalControlScheduleUpdate	110
3.1.30	LCS Class Dialogs	111
3.1.30.1	dlLCSInventoryUpdate	111
3.1.30.2	dlLCSStatusUpdate	112
3.1.30.3	dlLCSControlScheduleUpdate.....	113
3.1.31	Organization Class Dialogs.....	114
3.1.31.1	dlOrganizationInformationUpdate	114

3.1.32	RampMeter Class Dialogs	115
3.1.32.1	dlRampMeterInventoryUpdate	115
3.1.32.2	dlRampMeterStatusUpdate	116
3.1.32.3	dlRampMeterControlScheduleUpdate	117
3.1.32.4	dlRampMeterPlanInventoryUpdate	118
3.1.33	Section Class Dialogs	119
3.1.33.1	dlSectionStatusUpdate	119
3.1.33.2	dlSectionControlScheduleUpdate	120
3.1.33.3	dlSectionSignalTimingPatternInventoryUpdate	121
3.1.34	Link Class Dialogs	122
3.1.34.1	dlLinkInventoryUpdate	122
3.1.34.2	dlLinkStatusUpdate	123
3.1.35	Node Class Dialogs	124
3.1.35.1	dlNodeInventoryUpdate	124
3.1.35.2	dlNodeStatusUpdate	125
3.1.36	Route Class Dialogs	126
3.1.36.1	dlRouteInventoryUpdate	126
3.1.36.2	dlRouteStatusUpdate	127
3.1.37	VideoSwitch Class Dialogs	128
3.1.37.1	dlVideoSwitchInventoryUpdate	128
3.1.37.2	dlVideoSwitchStatusUpdate	129
3.2	Messages	130
3.2.1	ArchivedData Class Messages	130
3.2.1.1	archivedDataProcessingDocumentationMetadataMsg	130
3.2.1.2	archivedDataProcessingDocumentationMetadataRequestMsg	130
3.2.1.3	archivedDataTrafficMonitoringMetadataMsg	131
3.2.1.4	archivedDataTrafficMonitoringMetadataRequestMsg	131
3.2.2	CCTV Class Messages	132
3.2.2.1	cCCTVControlRequestMsg	132
3.2.2.2	cCCTVInventoryMsg	132
3.2.2.3	cCCTVStatusMsg	133
3.2.3	ConnectionManagement Class Messages	134
3.2.3.1	centerActiveVerificationRequestMsg	134
3.2.3.2	centerActiveVerificationResponseMsg	134
3.2.3.3	errorReportMsg	135
3.2.4	Detector Class Messages	135
3.2.4.1	detectorDataMsg	135
3.2.4.2	detectorDataRequestMsg	136
3.2.4.3	detectorInventoryMsg	136
3.2.4.4	detectorMaintenanceHistoryMsg	137
3.2.4.5	detectorMaintenanceHistoryRequestMsg	137
3.2.4.6	detectorStatusMsg	138
3.2.5	Device Class Messages	138
3.2.5.1	deviceCancelControlRequestMsg	138
3.2.5.2	deviceControlResponseMsg	139
3.2.5.3	deviceControlStatusRequestMsg	139

3.2.5.4	deviceInformationRequestMsg	140
3.2.5.5	devicePriorityQueueRequestMsg	140
3.2.6	DMS Class Messages.....	141
3.2.6.1	dMSControlRequestMsg.....	141
3.2.6.2	dMSFontTableMsg	141
3.2.6.3	dMSFontTableRequestMsg	142
3.2.6.4	dMSInventoryMsg	142
3.2.6.5	dMSMessageAppearanceMsg.....	143
3.2.6.6	dMSMessageAppearanceRequestMsg.....	143
3.2.6.7	dMSMessageInventoryMsg	144
3.2.6.8	dMSMessageInventoryRequestMsg	144
3.2.6.9	dMSPriorityQueueMsg	145
3.2.6.10	dMSStatusMsg.....	146
3.2.7	ESS Class Messages	146
3.2.7.1	eSSIInventoryMsg.....	146
3.2.7.2	eSSObservationMetadataMsg.....	147
3.2.7.3	eSSObservationReportMsg.....	147
3.2.7.4	eSSStatusMsg	148
3.2.8	Event Class Messages	148
3.2.8.1	actionLogMsg	148
3.2.8.2	eventIndexMsg.....	149
3.2.8.3	eventRequestMsg.....	150
3.2.8.4	fEUMsg.....	150
3.2.9	Gate Class Messages.....	151
3.2.9.1	gateControlRequestMsg.....	151
3.2.9.2	gateControlScheduleMsg.....	151
3.2.9.3	gateInventoryMsg	152
3.2.9.4	gateStatusMsg	152
3.2.10	HAR Class Messages.....	153
3.2.10.1	hARControlRequestMsg.....	153
3.2.10.2	hARControlScheduleMsg.....	153
3.2.10.3	hARInventoryMsg	154
3.2.10.4	hARMessageInventoryMsg	154
3.2.10.5	hARPriorityQueueMsg	155
3.2.10.6	hARStatusMsg	156
3.2.11	IntersectionSignal Class Messages	156
3.2.11.1	intersectionSignalControlRequestMsg	156
3.2.11.2	intersectionSignalControlResponseMsg.....	157
3.2.11.3	intersectionSignalControlScheduleMsg.....	157
3.2.11.4	intersectionSignalInventoryMsg	158
3.2.11.5	intersectionSignalPriorityQueueMsg.....	158
3.2.11.6	intersectionSignalStatusMsg.....	159
3.2.11.7	intersectionSignalTimingPatternInventoryMsg.....	160
3.2.11.8	intersectionSignalTimingPatternInventoryRequestMsg	160
3.2.12	LCS Class Messages	161
3.2.12.1	lCSControlRequestMsg	161

3.2.12.2	ICSControlScheduleMsg	161
3.2.12.3	ICSInventoryMsg.....	162
3.2.12.4	ICSStatusMsg.....	162
3.2.13	Link Class Messages.....	163
3.2.13.1	linkInventoryMsg.....	163
3.2.13.2	linkStatusMsg	163
3.2.14	Node Class Messages.....	164
3.2.14.1	nodeInventoryMsg	164
3.2.14.2	nodeStatusMsg.....	165
3.2.15	Organization Class Messages	165
3.2.15.1	organizationInformationMsg	165
3.2.15.2	organizationInformationRequestMsg	166
3.2.16	RampMeter Class Messages	166
3.2.16.1	rampMeterControlRequestMsg.....	166
3.2.16.2	rampMeterControlScheduleMsg.....	167
3.2.16.3	rampMeterInventoryMsg	167
3.2.16.4	rampMeterPlanInventoryMsg	168
3.2.16.5	rampMeterPriorityQueueMsg	169
3.2.16.6	rampMeterStatusMsg.....	169
3.2.17	Route Class Messages.....	170
3.2.17.1	routeInventoryMsg.....	170
3.2.17.2	routeStatusMsg	170
3.2.18	Section Class Messages	171
3.2.18.1	sectionControlRequestMsg.....	171
3.2.18.2	sectionControlResponseMsg.....	171
3.2.18.3	sectionControlScheduleMsg	172
3.2.18.4	sectionControlStatusRequestMsg	172
3.2.18.5	sectionPriorityQueueMsg	173
3.2.18.6	sectionStatusMsg	173
3.2.18.7	sectionSignalTimingPatternInventoryMsg	174
3.2.18.8	sectionSignalTimingPatternInventoryRequestMsg	175
3.2.19	TransportationNetwork Class Messages.....	175
3.2.19.1	trafficNetworkInformationRequestMsg.....	175
3.2.20	VideoSwitch Class Messages	176
3.2.20.1	videoSwitchControlRequestMsg	176
3.2.20.2	videoSwitchInventoryMsg.....	176
3.2.20.3	videoSwitchStatusMsg.....	177
3.3	Data Frames	177
3.3.1	ArchivedData Class Data Frames	177
3.3.1.1	archivedDataProcessingDocumentationMetadata	177
3.3.1.2	archivedDataProcessingDocumentationMetadataRequest	178
3.3.1.3	archivedDataTrafficMonitoringMetadata	179
3.3.1.4	archivedDataTrafficMonitoringMetadataRequest	181
3.3.2	CCTV Class Data Frames.....	182
3.3.2.1	cCCTVControlDetails	182
3.3.2.2	cCCTVControlRequest.....	183

3.3.2.3	cCTVInventory	183
3.3.2.4	cCTVStatus	185
3.3.3	ConnectionManagement Class Data Frames	186
3.3.3.1	authentication	186
3.3.3.2	centerActiveVerificationRequest	186
3.3.3.3	centerActiveVerificationResponse	187
3.3.3.4	errorReport	188
3.3.4	Detector Class Data Frames	188
3.3.4.1	detectorData	188
3.3.4.2	detectorDataDetail	189
3.3.4.3	detectorDataRequest	190
3.3.4.4	detectorInventory	191
3.3.4.5	detectorInventoryDetails	192
3.3.4.6	detectorMaintenanceHistory	193
3.3.4.7	detectorMaintenanceHistoryDetail	194
3.3.4.8	detectorMaintenanceHistoryRequest	195
3.3.4.9	detectorStatus	195
3.3.4.10	detectorStatusDetails	196
3.3.5	Device Class Data Frames	196
3.3.5.1	deviceCancelControlRequest	196
3.3.5.2	deviceControlRequestHeader	197
3.3.5.3	deviceControlResponse	198
3.3.5.4	deviceControlScheduleHeader	199
3.3.5.5	deviceControlStatusRequest	200
3.3.5.6	deviceInformationRequest	201
3.3.5.7	deviceInformationRequestFilter	202
3.3.5.8	deviceInventoryHeader	203
3.3.5.9	devicePriorityQueueHeader	205
3.3.5.10	devicePriorityQueueItem	205
3.3.5.11	devicePriorityQueueRequest	206
3.3.5.12	deviceReference	207
3.3.5.13	deviceStatusHeader	208
3.3.6	DMS Class Data Frames	209
3.3.6.1	dMSCharacterTableEntry	209
3.3.6.2	dMSControlDetails	209
3.3.6.3	dMSControlRequest	210
3.3.6.4	dMSFontTable	210
3.3.6.5	dMSFontTableRequest	211
3.3.6.6	dMSInventory	212
3.3.6.7	dMSMessageAppearance	214
3.3.6.8	dMSMessageAppearanceRequest	215
3.3.6.9	dMSMessageAppearanceRequestType	216
3.3.6.10	dMSMessageInventory	216
3.3.6.11	dMSMessageInventoryRequest	217
3.3.6.12	dMSPriorityQueue	218
3.3.6.13	dMSStatus	219

3.3.7	ESS Class Data Frames	219
3.3.7.1	eSSClimateRecordDetail	219
3.3.7.2	eSSDataCollectorInformation	220
3.3.7.3	eSSIImageInformation	221
3.3.7.4	eSSIInventory	221
3.3.7.5	eSSIInventoryDetails	222
3.3.7.6	eSSObservationDataSetMetadataDetail	223
3.3.7.7	eSSObservationMetadata	224
3.3.7.8	eSSObservationMetadataItem	225
3.3.7.9	eSSObservationReport	226
3.3.7.10	eSSObservationReportDetail	227
3.3.7.11	eSSObservationType	227
3.3.7.12	eSSSensorMetadataDetail	228
3.3.7.13	eSSSensorStatusDetails	230
3.3.7.14	eSSSiteMetadataDetail	231
3.3.7.15	eSSStationMetadataDetail	232
3.3.7.16	eSSStatus	234
3.3.8	Event Class Data Frames	235
3.3.8.1	actionLog	235
3.3.8.2	additionalText	236
3.3.8.3	alternateRouteDetail	236
3.3.8.4	areaLocation	237
3.3.8.5	dataExtent	238
3.3.8.6	dataIncidentDetails	239
3.3.8.7	dataLinkRestrictions	239
3.3.8.8	dataLinkState	240
3.3.8.9	dataParking	241
3.3.8.10	dataRoadWeather	242
3.3.8.11	dataSurfaceConditions	243
3.3.8.12	eventAdvice	244
3.3.8.13	eventComments	245
3.3.8.14	eventDescription	245
3.3.8.15	eventElementDetail	246
3.3.8.16	eventFilterRequest	248
3.3.8.17	eventHeadline	249
3.3.8.18	eventIndex	249
3.3.8.19	eventIndicator	250
3.3.8.20	eventLane	251
3.3.8.21	eventLocation	252
3.3.8.22	eventPeriod	252
3.3.8.23	eventQualifier	253
3.3.8.24	eventQuantity	254
3.3.8.25	eventReference	255
3.3.8.26	eventSource	255
3.3.8.27	eventTimes	256
3.3.8.28	eventTransitLocation	257

3.3.8.29	eventType.....	258
3.3.8.30	fullEventUpdate	260
3.3.8.31	fullReportText.....	262
3.3.8.32	hazmat	262
3.3.8.33	landmarkLocation	263
3.3.8.34	linkLocation	264
3.3.8.35	messageHeader	265
3.3.8.36	otherReference	266
3.3.8.37	pointOnLink.....	267
3.3.8.38	projectReference	268
3.3.8.39	recurrentTime.....	269
3.3.8.40	requestFilter	270
3.3.8.41	requestHeader	271
3.3.8.42	requestLocation.....	272
3.3.8.43	requestTimes	273
3.3.8.44	requestType.....	273
3.3.8.45	validPeriod	274
3.3.9	Gate Class Data Frames	275
3.3.9.1	gateControlRequest.....	275
3.3.9.2	gateControlSchedule	275
3.3.9.3	gateInventory	276
3.3.9.4	gateStatus	276
3.3.10	Global Class Data Frames.....	277
3.3.10.1	dateTimeZone	277
3.3.10.2	urlReference.....	278
3.3.11	HAR Class Data Frames	278
3.3.11.1	hARControlDetails	278
3.3.11.2	hARControlRequest.....	279
3.3.11.3	hARControlSchedule	279
3.3.11.4	hARInventory	280
3.3.11.5	hARMessageInventory	281
3.3.11.6	hARPriorityQueue	281
3.3.11.7	hARStatus	282
3.3.12	IntersectionSignal Class Data Frames	283
3.3.12.1	intersectionSignalControlDetails	283
3.3.12.2	intersectionSignalControlRequest.....	283
3.3.12.3	intersectionSignalControlResponse	284
3.3.12.4	intersectionSignalControlSchedule.....	285
3.3.12.5	intersectionSignalInventory	285
3.3.12.6	intersectionSignalInventoryLinkList	287
3.3.12.7	intersectionSignalInventoryPhase.....	288
3.3.12.8	intersectionSignalMovement	288
3.3.12.9	intersectionSignalOverlapPhase	289
3.3.12.10	intersectionSignalOverlapStatusGroup.....	290
3.3.12.11	intersectionSignalPhaseSplit.....	291
3.3.12.12	intersectionSignalPhaseStatusGroup	291

3.3.12.13	intersectionSignalPriorityQueue	292
3.3.12.14	intersectionSignalRing.....	293
3.3.12.15	intersectionSignalRingStatus	293
3.3.12.16	intersectionSignalSequenceData.....	294
3.3.12.17	intersectionSignalSpecialFunctions	295
3.3.12.18	intersectionSignalStatus	295
3.3.12.19	intersectionSignalTimingPatternInventory	298
3.3.12.20	intersectionSignalTimingPatternInventoryRequest	299
3.3.12.21	intersectionSignalTPInventoryPhase	299
3.3.13	LCS Class Data Frames	300
3.3.13.1	ICSControlRequest	300
3.3.13.2	ICSControlSchedule.....	301
3.3.13.3	ICSInventory	302
3.3.13.4	ICSStatus.....	302
3.3.14	Link Class Data Frames	303
3.3.14.1	linearReferenceRange	303
3.3.14.2	linkInventory	303
3.3.14.3	linkInventoryList.....	304
3.3.14.4	linkStatus.....	306
3.3.14.5	linkStatusList	306
3.3.15	Node Class Data Frames	309
3.3.15.1	nodeInventory	309
3.3.15.2	nodeInventoryList	310
3.3.15.3	nodeStatus	311
3.3.15.4	nodeStatusList.....	312
3.3.16	Organization Class Data Frames.....	313
3.3.16.1	contactDetails.....	313
3.3.16.2	organizationCenterInformation.....	314
3.3.16.3	organizationInformation	315
3.3.16.4	organizationInformationRequest.....	316
3.3.16.5	restrictions	317
3.3.17	RampMeter Class Data Frames	317
3.3.17.1	rampControlDetails	317
3.3.17.2	rampMeterControlRequest.....	318
3.3.17.3	rampMeterControlSchedule	318
3.3.17.4	rampMeterInventory	319
3.3.17.5	rampMeterInventoryDetails	320
3.3.17.6	rampMeterLaneControlDetails	321
3.3.17.7	rampMeterLaneStatusDetails.....	322
3.3.17.8	rampMeterPlanInventory	323
3.3.17.9	rampMeterPriorityQueue	324
3.3.17.10	rampMeterStatus	325
3.3.18	Route Class Data Frames	326
3.3.18.1	routeInventory	326
3.3.18.2	routeInventoryList.....	327
3.3.18.3	routeStatus.....	328

3.3.18.4	routeStatusList	329
3.3.19	Section Class Data Frames.....	331
3.3.19.1	sectionControlDetails.....	331
3.3.19.2	sectionControlRequest	331
3.3.19.3	sectionControlResponse.....	332
3.3.19.4	sectionControlSchedule	333
3.3.19.5	sectionControlStatusRequest	335
3.3.19.6	sectionPriorityQueue.....	335
3.3.19.7	sectionStatus	336
3.3.19.8	sectionTimingPatternInventory.....	337
3.3.19.9	sectionSignalTimingPatternInventoryRequest	338
3.3.19.10	sectionSignalTimingPatternInventory	339
3.3.20	TransportationNetwork Class Data Frames	340
3.3.20.1	trafficNetworkInformationRequest.....	340
3.3.21	VideoSwitch Class Data Frames.....	341
3.3.21.1	videoSwitchControlRequest	341
3.3.21.2	videoSwitchDeviceStatus	342
3.3.21.3	videoSwitchInventory	342
3.3.21.4	vSSwitchedChannelData.....	343
3.3.21.5	vSVideoChannelData.....	344
3.4	Data Elements	344
3.4.1	ArchivedData Class Data Elements	344
3.4.1.1	archived-data-set-maintenance-frequency	344
3.4.1.2	archived-data-set-progress-status.....	345
3.4.1.3	archived-data-set-type.....	346
3.4.2	CCTV Class Data Elements.....	347
3.4.2.1	cctv-camera-type.....	347
3.4.2.2	cctv-image-supported.....	347
3.4.2.3	cctv-request-command.....	348
3.4.2.4	cctv-titling-text.....	349
3.4.3	ConnectionManagement Class Data Elements	349
3.4.3.1	error-report-code	349
3.4.3.2	informationalText	350
3.4.3.3	security-password	351
3.4.4	Detector Class Data Elements.....	351
3.4.4.1	detector-bin-length.....	351
3.4.4.2	detector-occupancy	352
3.4.4.3	detector-type	352
3.4.4.4	detector-vehicle-count.....	353
3.4.4.5	detector-vehicle-queue-length.....	354
3.4.4.6	detector-vehicle-speed	354
3.4.4.7	detector-vehicle-stops	354
3.4.5	Device Class Data Elements	355
3.4.5.1	device-acknowledge-control.....	355
3.4.5.2	device-beacon	356
3.4.5.3	device-command-request-priority.....	356

3.4.5.4	device-communications-status	357
3.4.5.5	device-control-type	357
3.4.5.6	device-error	358
3.4.5.7	device-information-type.....	359
3.4.5.8	device-location-elevation	360
3.4.5.9	device-location-height.....	360
3.4.5.10	device-mobility-type	361
3.4.5.11	device-operational-status	361
3.4.5.12	device-operation-type	362
3.4.5.13	device-return-current-message-snapshot-flag.....	363
3.4.5.14	device-sensor-data-type	363
3.4.5.15	device-type.....	364
3.4.6	DMS Class Data Elements.....	365
3.4.6.1	dms-request-command.....	365
3.4.7	ESS Class Data Elements.....	366
3.4.7.1	ess-angle-degrees	366
3.4.7.2	ess-avg-wind-gust-speed.....	366
3.4.7.3	ess-data-set-file-access-protocol	367
3.4.7.4	ess-data-set-file-access-protocol-port-address	367
3.4.7.5	ess-data-set-file-host	368
3.4.7.6	ess-data-set-file-name	368
3.4.7.7	ess-data-set-file-path	369
3.4.7.8	ess-distance-meters	369
3.4.7.9	ess-distribution-group	369
3.4.7.10	ess-object-label	370
3.4.7.11	ess-object-name.....	370
3.4.7.12	ess-object-null-value	376
3.4.7.13	ess-observation-decimal-scaling-factor	377
3.4.7.14	ess-observation-month	377
3.4.7.15	ess-observation-percent.....	378
3.4.7.16	ess-observation-positional-order.....	378
3.4.7.17	ess-observation-sensor-index	379
3.4.7.18	ess-observation-time-zone	379
3.4.7.19	ess-observation-units.....	380
3.4.7.20	ess-observation-value-range-number	380
3.4.7.21	ess-observation-rate-of-change	381
3.4.7.22	ess-probability	381
3.4.7.23	ess-sensor-accuracy.....	381
3.4.7.24	ess-sensor-resolution.....	382
3.4.7.25	ess-sensor-type.....	382
3.4.7.26	ess-site-country-code	383
3.4.7.27	ess-station-comm-method	384
3.4.7.28	ess-station-maintenance-status.....	384
3.4.7.29	ess-station-number-of-devices	385
3.4.7.30	ess-station-power-source.....	385
3.4.7.31	ess-time-span-days.....	386

3.4.7.32	ess-time-span-milliseconds	386
3.4.7.33	ess-time-span-minutes.....	387
3.4.7.34	ess-time-span-seconds.....	387
3.4.7.35	ess-uv-index	388
3.4.8	Event Class Data Elements	388
3.4.8.1	event-access-level	388
3.4.8.2	event-action-log-element-identifier	389
3.4.8.3	event-action-type.....	389
3.4.8.4	event-action-request-flag	390
3.4.8.5	event-alternate-route-type	391
3.4.8.6	event-area-name	391
3.4.8.7	event-category	392
3.4.8.8	event-description-confidence-level	392
3.4.8.9	event-description-language	393
3.4.8.10	event-description-notes-and-comments	394
3.4.8.11	event-description-priority-level	394
3.4.8.12	event-description-time	395
3.4.8.13	event-detection-method.....	395
3.4.8.14	event-effective-period-qualifier	397
3.4.8.15	event-element-identifier.....	397
3.4.8.16	event-hazmat-code	398
3.4.8.17	event-headline-element	398
3.4.8.18	event-holiday-day	399
3.4.8.19	event-incident-humans-involved-count	399
3.4.8.20	event-incident-status	400
3.4.8.21	event-incident-vehicles-involved-count.....	401
3.4.8.22	event-impact-level.....	401
3.4.8.23	event-landmark-name	402
3.4.8.24	event-length-affected	402
3.4.8.25	event-link-categories.....	402
3.4.8.26	event-location-area-identifier.....	403
3.4.8.27	event-location-coordinates-altitude.....	404
3.4.8.28	event-location-landmark-type	404
3.4.8.29	event-location-rank	406
3.4.8.30	event-message-number	406
3.4.8.31	event-message-type-identifier.....	407
3.4.8.32	event-message-type-version.....	407
3.4.8.33	event-parking-number-of-spaces	408
3.4.8.34	event-parking-occupancy	408
3.4.8.35	event-placard-code.....	409
3.4.8.36	event-placard-displayed-code	409
3.4.8.37	event-planned-event-class.....	410
3.4.8.38	event-proportion-affected	410
3.4.8.39	event-report-medium.....	411
3.4.8.40	event-request-focus	412
3.4.8.41	event-schedule-element-identifier.....	412

3.4.8.42	event-severity	413
3.4.8.43	event-signed-destination	413
3.4.8.44	event-speed-vehicle-estimated	414
3.4.8.45	event-timeline-estimated-duration	414
3.4.8.46	event-timeline-schedule-days-of-the-week	415
3.4.8.47	event-timeline-schedule-times	415
3.4.8.48	event-transit-direction-of-travel	416
3.4.8.49	event-update	417
3.4.9	Gate Class Data Elements	417
3.4.9.1	gate-request-command	417
3.4.9.2	gate-status	418
3.4.10	Global Class Data Elements	419
3.4.10.1	binary-flag	419
3.4.10.2	date	419
3.4.10.3	time	420
3.4.10.4	time-offset-utc	420
3.4.10.5	url-reference	421
3.4.10.6	url-reference-type	421
3.4.11	HAR Class Data Elements	422
3.4.11.1	har-call-sign	422
3.4.11.2	har-characteristics	422
3.4.11.3	har-message	422
3.4.11.4	har-request-command	423
3.4.12	IntersectionSignal Class Data Elements	424
3.4.12.1	intersection-actuation-mode	424
3.4.12.2	intersection-offset-reference	424
3.4.12.3	intersection-planned-signal-timing-mode	425
3.4.12.4	intersection-signal-control-mode	426
3.4.12.5	intersection-signal-control-source	427
3.4.12.6	intersection-signal-request-command	428
3.4.12.7	intersection-signal-timing-mode	429
3.4.12.8	intersection-turning-movement-code	430
3.4.12.9	intersection-turning-movement-angle	431
3.4.12.10	intersection-timing-duration	431
3.4.12.11	time-reference-code	432
3.4.13	LCS Class Data Elements	432
3.4.13.1	lcs-lane-current-state	432
3.4.13.2	lcs-lane-request-command	433
3.4.14	Link Class Data Elements	434
3.4.14.1	link-alignment	434
3.4.14.2	link-alternate-route-delay	435
3.4.14.3	link-capacity	435
3.4.14.4	link-capacity-existing	436
3.4.14.5	link-data-stored	436
3.4.14.6	link-data-type	437
3.4.14.7	link-delay	438

3.4.14.8	link-density	438
3.4.14.9	link-direction	438
3.4.14.10	link-headway	439
3.4.14.11	link-lane-number	440
3.4.14.12	link-lanes-count	440
3.4.14.13	link-length	441
3.4.14.14	link-level-of-service	441
3.4.14.15	link-location-linear-reference	442
3.4.14.16	link-location-linear-reference-version	443
3.4.14.17	link-median-type	443
3.4.14.18	link-occupancy	444
3.4.14.19	link-oversaturated-flag	444
3.4.14.20	link-oversaturated-threshold	445
3.4.14.21	link-priority-type	445
3.4.14.22	link-restriction-axle-count	446
3.4.14.23	link-restriction-height	446
3.4.14.24	link-restriction-length	447
3.4.14.25	link-restriction-units	447
3.4.14.26	link-restriction-weight-axle	448
3.4.14.27	link-restriction-weight-vehicle	448
3.4.14.28	link-restriction-width	449
3.4.14.29	link-route-designator	449
3.4.14.30	link-shoulder-width	450
3.4.14.31	link-speed-average	450
3.4.14.32	link-speed-limit	451
3.4.14.33	link-speed-limit-units	451
3.4.14.34	link-status	452
3.4.14.35	link-stops	452
3.4.14.36	link-surface-condition	453
3.4.14.37	link-travel-time	454
3.4.14.38	link-travel-time-increase	454
3.4.14.39	link-type	455
3.4.14.40	link-volume	456
3.4.15	Node Class Data Elements	456
3.4.15.1	node-links-number	456
3.4.15.2	node-status	457
3.4.15.3	node-type	457
3.4.16	Organization Class Data Elements	458
3.4.16.1	center-type	458
3.4.16.2	contact-mailing-address-entry	459
3.4.16.3	contact-mailing-address-state	459
3.4.16.4	organization-function	460
3.4.16.5	organization-information-forwarding-restrictions	460
3.4.16.6	organization-information-type	461
3.4.16.7	organization-location-fips	462
3.4.16.8	organization-resource-identifier	462

3.4.16.9	organization-resource-name.....	463
3.4.17	RampMeter Class Data Elements	463
3.4.17.1	meter-greens-per-cycle	463
3.4.17.2	meter-operational-mode.....	463
3.4.17.3	ramp-lane-type	464
3.4.18	Route Class Data Elements	465
3.4.18.1	route-type	465
3.4.19	Section Class Data Elements	466
3.4.19.1	section-signal-control-mode	466
3.4.19.2	section-request-command	467
3.4.20	TransportationNetwork Class Data Elements	468
3.4.20.1	transportation-network-identifier.....	468
3.4.20.2	transportation-network-information-type	468
3.4.21	RoadwayNetwork Class Data Elements	469
3.4.21.1	transportation-network-name.....	469
3.4.22	VideoSwitch Class Data Elements.....	469
3.4.22.1	vS-channel-count	469
3.4.22.2	vS-frames-per-second	470
3.4.22.3	vS-pixel-count.....	470
3.4.22.4	vS-request-supported-type	471
3.5	Object Classes	471
3.5.1	archivedData	471
3.5.2	cCTV	471
3.5.3	connectionManagement	472
3.5.4	detector.....	472
3.5.5	device	472
3.5.6	dMS.....	472
3.5.7	eSS	472
3.5.8	event.....	473
3.5.9	externalCenter	473
3.5.10	gate.....	473
3.5.11	global.....	473
3.5.12	hAR.....	473
3.5.13	intersectionSignal.....	474
3.5.14	ICS.....	474
3.5.15	link	474
3.5.16	node.....	474
3.5.17	organization.....	474
3.5.18	ownerCenter	475
3.5.19	rampMeter.....	475
3.5.20	route	475
3.5.21	section	475
3.5.22	transportationNetwork	475
3.5.23	videoSwitch.....	476
3.6	External Data Entries	476
3.6.1	CCTV Class Data Elements.....	476

3.6.1.1	rangePanLeftLimit	476
3.6.1.2	rangePanRightLimit	477
3.6.1.3	rangeTiltUpLimit	477
3.6.1.4	rangeTiltDownLimit	477
3.6.1.5	rangeZoomLimit	478
3.6.1.6	rangeFocusLimit	478
3.6.1.7	rangeIrisLimit	478
3.6.1.8	presetGotoPosition	479
3.6.1.9	positionFocusLens	479
3.6.1.10	positionIrisLens	479
3.6.1.11	positionTilt	480
3.6.1.12	positionPan	480
3.6.1.13	positionZoomLens	481
3.6.1.14	systemCameraEquipped	481
3.6.1.15	systemCameraFeatureControl	481
3.6.1.16	systemCameraFeatureStatus	482
3.6.2	Detector Class Data Elements	482
3.6.2.1	sensorZoneOutputMode	482
3.6.3	DMS Class Data Elements	483
3.6.3.1	defaultFont	483
3.6.3.2	fontNumber	483
3.6.3.3	fontHeight	483
3.6.3.4	fontCharSpacing	484
3.6.3.5	fontLineSpacing	484
3.6.3.6	fontVersionID	484
3.6.3.7	fontStatus	486
3.6.3.8	characterNumber	487
3.6.3.9	characterWidth	487
3.6.3.10	characterBitmap	487
3.6.3.11	dmsMaxNumberPages	488
3.6.3.12	dmsMaxMultiStringLength	488
3.6.3.13	dmsColorScheme	488
3.6.3.14	dmsMsgSourceMode	489
3.6.3.15	dmsSupportedMultiTags	490
3.6.3.16	dmsMessageMultiString	491
3.6.3.17	dmsMessageBeacon	491
3.6.3.18	dmsMsgTableSource	492
3.6.3.19	dmsMessageStatus	492
3.6.3.20	dmsMessageMemoryType	493
3.6.3.21	dmsSignTechnology	494
3.6.3.22	dmsBeaconType	494
3.6.3.23	dmsMessageRunTimePriority	495
3.6.3.24	dmsMessageTimeRemaining	495
3.6.3.25	vmsSignHeightPixels	496
3.6.3.26	vmsSignWidthPixels	496
3.6.3.27	dmsSignHeight	496

3.6.3.28	dmsSignWidth.....	496
3.6.3.29	vmsCharacterHeightPixels.....	497
3.6.3.30	vmsCharacterWidthPixels.....	497
3.6.3.31	dmsVerticalBorder.....	497
3.6.3.32	dmsHorizontalBorder.....	498
3.6.3.33	vmsHorizontalPitch.....	498
3.6.3.34	vmsVerticalPitch.....	498
3.6.3.35	dmsSignType	499
3.6.4	ESS Class Data Elements.....	500
3.6.4.1	essNtcipCategory	500
3.6.4.2	essTypeofStation.....	500
3.6.4.3	essDoorStatus.....	501
3.6.4.4	essBatteryStatus	501
3.6.4.5	essLineVolts.....	501
3.6.4.6	essWeatherBlock.....	502
3.6.4.7	essReferenceHeight.....	502
3.6.4.8	essAtmosphericPressure	503
3.6.4.9	essAvgWindDirection.....	503
3.6.4.10	essAvgWindSpeed	503
3.6.4.11	essAirTemperature.....	503
3.6.4.12	essDewpointTemp.....	504
3.6.4.13	essMaxTemp	504
3.6.4.14	essMinTemp.....	504
3.6.4.15	essRelativeHumidity	505
3.6.4.16	essWaterDepth	505
3.6.4.17	essAdjacentSnowDepth	505
3.6.4.18	essRoadwaySnowDepth.....	506
3.6.4.19	essRoadwaySnowPackDepth.....	506
3.6.4.20	essPrecipRate	506
3.6.4.21	essSnowfallAccumRate	507
3.6.4.22	essIceThickness.....	507
3.6.4.23	essVisibility.....	507
3.6.4.24	essSurfaceTemperature	507
3.6.4.25	essPavementTemperature	508
3.6.4.26	essSurfaceWaterDepth.....	508
3.6.4.27	essSurfaceSalinity	508
3.6.4.28	essSurfaceFreezePoint	509
3.6.4.29	essPavementBlock	509
3.6.4.30	essSubSurfaceData.....	509
3.6.4.31	essMobileFriction	510
3.6.5	Events Class Data Elements.....	510
3.6.5.1	accidentsAndIncidents	510
3.6.5.2	adviceInstructionsMandatory.....	511
3.6.5.3	adviceInstructionsRecommendations	512
3.6.5.4	alternateRoute	513
3.6.5.5	closures	514

3.6.5.6	delayStatusCancellation	515
3.6.5.7	deviceStatus	516
3.6.5.8	disasters	517
3.6.5.9	disturbances	518
3.6.5.10	genericLocations	519
3.6.5.11	incidentResponseEquipment	521
3.6.5.12	incidentResponseStatus	522
3.6.5.13	laneRoadway	523
3.6.5.14	mobileSituation	524
3.6.5.15	obstruction	525
3.6.5.16	parkingInformation	526
3.6.5.17	pavementConditions	527
3.6.5.18	precipitation	528
3.6.5.19	qualifiers	529
3.6.5.20	responderGroupAffected	531
3.6.5.21	restrictionClass	532
3.6.5.22	roadwork	533
3.6.5.23	specialEvents	534
3.6.5.24	sportingEvents	535
3.6.5.25	suggestionAdvice	535
3.6.5.26	systemInformation	536
3.6.5.27	temperature	537
3.6.5.28	trafficConditions	538
3.6.5.29	transitMode	539
3.6.5.30	transitOperations	539
3.6.5.31	travelerGroupAffected	541
3.6.5.32	unusualDriving	541
3.6.5.33	vehicleGroupAffected	542
3.6.5.34	visibilityAndAirQuality	543
3.6.5.35	warningAdvice	544
3.6.5.36	weatherConditions	545
3.6.5.37	winds	546
3.6.5.38	winterDrivingIndex	547
3.6.5.39	winterDrivingRestrictions	547
3.6.6	Global Class Data Elements	548
3.6.6.1	timeBaseScheduleNumber	548
3.6.6.2	timeBaseScheduleMonth	548
3.6.6.3	timeBaseScheduleDay	549
3.6.6.4	timeBaseScheduleDate	549
3.6.6.5	timeBaseScheduleDayPlan	549
3.6.6.6	dayPlanHour	550
3.6.6.7	dayPlanMinute	550
3.6.6.8	horizontalDatum	550
3.6.6.9	latitude	551
3.6.6.10	longitude	551
3.6.6.11	IRMethod	551

3.6.6.12	verticalDatum.....	552
3.6.6.13	verticalLevel	552
3.6.6.14	broadcastAlertsItem	552
3.6.6.15	returnAddress.....	553
3.6.6.16	subscriptionActionItem.....	553
3.6.6.17	subscriptionCount	553
3.6.6.18	subscriptionFrequency	554
3.6.6.19	subscriptionID.....	554
3.6.6.20	subscriptionName	554
3.6.6.21	subscriptionTypeItem	555
3.6.6.22	date.....	555
3.6.6.23	time	555
3.6.6.24	timeOffset	556
3.6.7	IntersectionSignal Class Data Elements	556
3.6.7.1	coordCycleStatus	556
3.6.7.2	coordSyncStatus.....	556
3.6.7.3	overlapNumber	557
3.6.7.4	overlapStatusGroupNumber	557
3.6.7.5	overlapStatusGroupGreens	557
3.6.7.6	overlapStatusGroupReds.....	558
3.6.7.7	overlapStatusGroupYellows	558
3.6.7.8	patternCycleTime.....	558
3.6.7.9	patternOffsetTime	559
3.6.7.10	phaseStatusGroupNumber	559
3.6.7.11	phaseStatusGroupDontWalks	560
3.6.7.12	phaseStatusGroupGreens	560
3.6.7.13	phaseStatusGroupPedClears	560
3.6.7.14	phaseStatusGroupReds	561
3.6.7.15	phaseStatusGroupWalks	561
3.6.7.16	phaseStatusGroupYellows	562
3.6.7.17	phaseNumber	562
3.6.7.18	ringStatus	562
3.6.7.19	splitCoordPhase	563
3.6.7.20	splitTime	563
3.6.7.21	splitMode	564
3.6.7.22	specialFunctionOutputNumber	565
3.6.7.23	timebaseAscPatternSync.....	565
3.6.8	RampMeter Class Data Elements	565
3.6.8.1	rmcAbsoluteMinMeterRate	565
3.6.8.2	rmcAbsoluteMaxMeterRate.....	566
3.6.8.3	rmcSystemMinMeterRate	566
3.6.8.4	rmcSystemMaxMeterRate	566
3.6.8.5	rmcManualPlan	567
3.6.8.6	rmcManualRate.....	567
3.6.8.7	rmcAverageFlowRate	567
3.6.8.8	rmcAverageOccupancy	568

3.6.8.9	rmcAverageSpeed	568
3.6.8.10	rmcDemandStatus	568
3.6.8.11	rmcQueueStatus	569
3.6.8.12	rmcPassageStatus	570
3.6.8.13	rmcOperMaxMeterRateStatus	570
3.6.8.14	rmcOperMinMeterRateStatus	570
3.6.8.15	rmcRequestCommandSource	571
3.6.8.16	rmcImplementCommandSource	571
3.6.8.17	rmcRequestAction	572
3.6.8.18	rmcRequestPlan	572
3.6.8.19	rmcRequestRate	573
3.6.8.20	rmcRequestVehiclesPerGrn	573
3.6.8.21	rmcImplementAction	573
3.6.8.22	rmcImplementPlan	574
3.6.8.23	rmcImplementRate	575
3.6.8.24	rmcImplementVehiclesPerGrn	575
3.6.8.25	rmcTBActionCtrl	575
3.6.8.26	rmcTBPlanCtrl	576
3.6.8.27	rmcTBRateCtrl	576
3.6.8.28	rmcTBVehiclesPerGrnCtrl	577
3.6.8.29	rmcTBCMinMeterRateCtrl	577
3.6.8.30	rmcTBCMaxMeterRateCtrl	577
3.6.8.31	rmcTBMLUsageMode	578
3.6.8.32	rmcActionNum	578
3.6.8.33	rmcMeteringLevel	579
3.6.8.34	rmcMeteringRate	579
3.6.8.35	rmcFlowRateThreshold	579
3.6.8.36	rmcOccupancyThreshold	580
3.6.8.37	rmcSpeedThreshold	580
3.6.9	Global Class Data Frames	580
3.6.9.1	broadcastAlerts	580
3.6.9.2	dateTimePair	581
3.6.9.3	distance	581
3.6.9.4	geoLocation	582
3.6.9.5	height	582
3.6.9.6	subscriptionAction	583
3.6.9.7	subscriptionTimeFrame	583
3.6.9.8	subscriptionType	583
3.6.10	Global Class Messages	584
3.6.10.1	c2cMessagePublication	584
3.6.10.2	c2cMessageReceipt	584
3.6.10.3	c2cMessageSubscription	585
4	Requirements Traceability Matrix	587
4.1.1	Requirement ID and Requirement Title Columns	587
4.1.2	Dialog Column	587
4.1.3	Data Concept Name and Standard Clause Columns	587

4.1.4 Reference Data Concept (Informative) 587

Table of Figures

Figure 1 Relationship Between TMDD Volume I and Volume II.....	1
Figure 2 Relationship Between TMDD and Protocol-Specific Profiles.....	1
Figure 3 Systems Engineering Process “VEE” Diagram.....	2
Figure 4 Parts of a UML Sequence Diagram.....	6
Figure 5 Generic Request-Response Dialog.....	9
Figure 6 Generic Subscription Dialog	10
Figure 7 Generic Publication Update Dialog.....	11
Figure 8 TMDD Object Identifier (OID) Tree Structure	14

List of Tables

Table 1 Normative TMDD Electronic Design Files	4
Table 2 Normative TMDD Support Electronic Design Files	5
Table 3 Requirements Traceability Matrix (RTM).....	588

Revision History

Filename	Version	Date	Author	Comment
TMDDv3.03-Vol2-draft01c.doc	Draft 1	06/29/12	P.Chan	Maintenance update 3, Draft 1 - Volume II. Intended for distribution to TMDD Steering Committee.
TMDDv3.03-Vol2-draft01g.doc	Draft 1	01/25/13	P.Chan	Maintenance update 3, Draft 1 - Volume II.
TMDDv3.03-Vol2-draft01i.doc	Draft 1	03/14/13	P.Chan	Maintenance update 3, Draft 1 - Volume II. Submitted to ITE for 508 compliance.
TMDDv3.03-Vol2-draft02a.doc	Draft 2	05/29/13	P. Chan	Maintenance update 3, Draft 2 - Volume I. Version for walkthrough.
TMDDv3.03-Vol2-draft03.doc	Draft 3	06/26/13	P. Chan	Maintenance update 3, Draft 3 - Volume I. Ballot Standard. Distributed to TMDD Steering Committee for comment.
TMDDv3.03-Vol2-pRS.doc		07/22/13	P. Chan	Distributed to TMDD Steering Committee as a proposed Recommended Standard.
TMDDv3.03a-Vol2-pRS.doc		08/08/13	P. Chan	Reflects comments from TMDD Steering Committee meeting on August 6, 2013.
TMDDv3.03b-Vol2-RS.doc		10/17/13	P. Chan	Recommended Standard. Distributed for balloting.
TMDDv3.03c-Vol2-RS.doc		12/03/13	P. Chan	Recommended Standard. Made minor changes to the NRTM based on comments from the Reference Implementation.
TMDDv3.03c-Vol2.doc		07/16/14	P. Chan	Approved Standard. Updated cover page and date.

1 Document Introduction

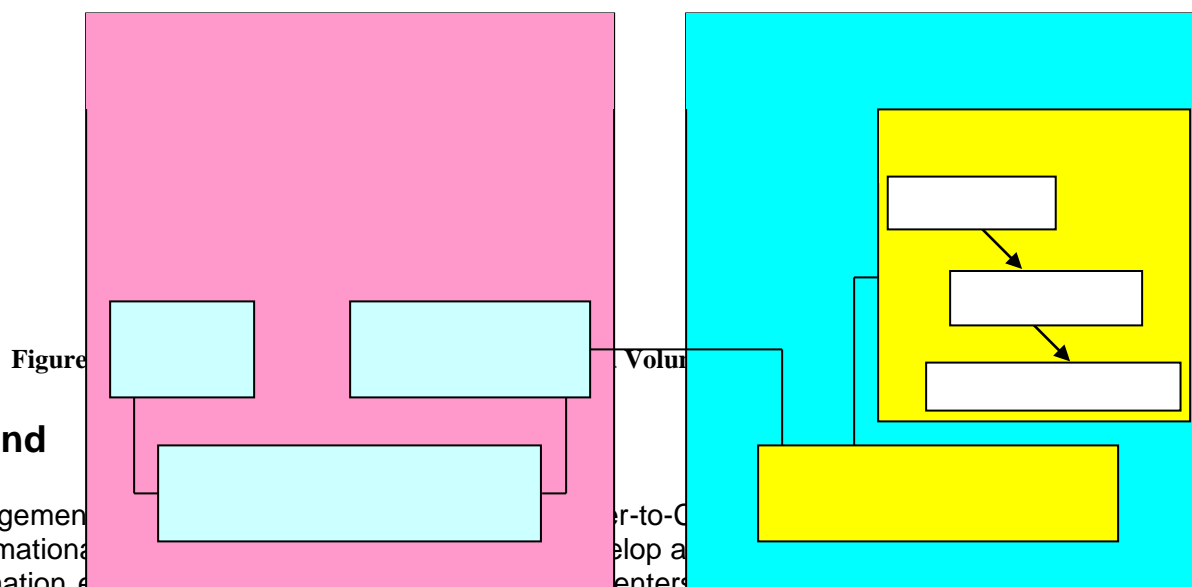
1.1 Purpose

The purpose of the TMDD Standard for Traffic Management Center-to-Center Communications Volume I document is to identify and describe the needs and requirements for a traffic management center (TMC) to provide services to external centers (EC) via a communications interface.

This document defines the user needs that are addressed by the standard and the functional requirements that are met by the design content. Volume I also addresses topics related to the use of the standard such as:

- Conformance to the standard;
- Extensions to the standard; and
- Backwards compatibility of this version of the standard with previous versions.

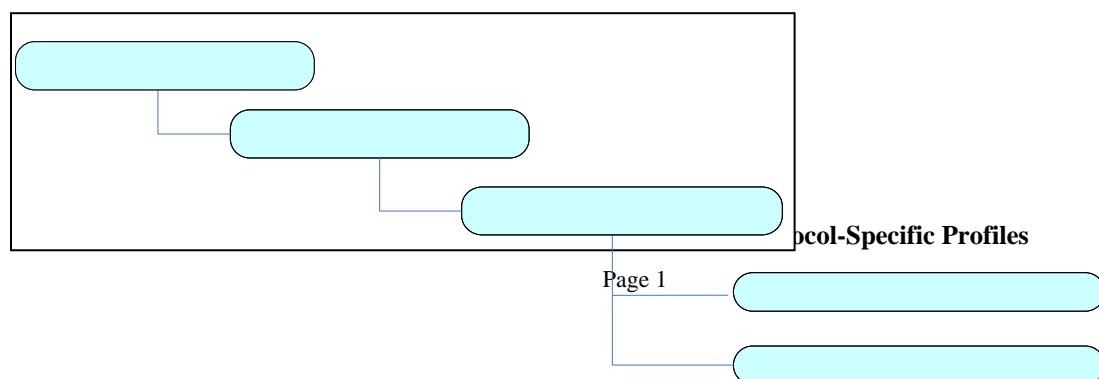
The design content for the TMDD, which includes dialogs, message sets, data frames and data elements, is provided in the companion Volume II: Design Content. The two volumes together make up the TMDD Standard. Figure 1 depicts the relationship between the volumes in the document.



1.2 Background

The Traffic Management Center-to-Center Communications (TMDD) is an information exchange interface for information exchange between a center and other centers. Using an IEEE 1131-based set of data concepts, the TMDD standard provides a protocol-independent, high-level definition of how the services will be provided via a systems interface (SI). There are a variety of protocol-specific application profiles that define the details of how to implement the interface.

Figure 2 depicts the relationship between the TMDD standard and the protocol-specific application profiles. Note that the use of one of these application profiles is necessary to implement TMDD-based system interface.



This layered approach to the TMDD was developed due to the variety of existing TMC implementations and support for more than one C2C protocol in the National Transportation Communications for ITS Protocol (NTCIP). This approach facilitates the exchange of messages through gateways connecting disparate systems. In addition, this layered approach will facilitate the migration to other protocols in the future as the telecommunications industry continues to advance its technology.

1.3 Approach

The structure of this standard, TMDD Version v3.03, follows a systems engineering process. A systems engineering process (SEP) is a structured way of thinking about and defining a system. The systems engineering process is an iterative approach to technical management, acquisition and supply, system design, product realization, and technical evaluation at each level of the system, beginning at the top (the system level) and propagating those processes through a series of steps which eventually lead to a preferred system solution. Figure 3 shows a representation of the systems engineering process called the VEE diagram. This general process has been customized for use for this standard – it follows the process steps on the left side of the VEE indicated by the oval in Figure 3.

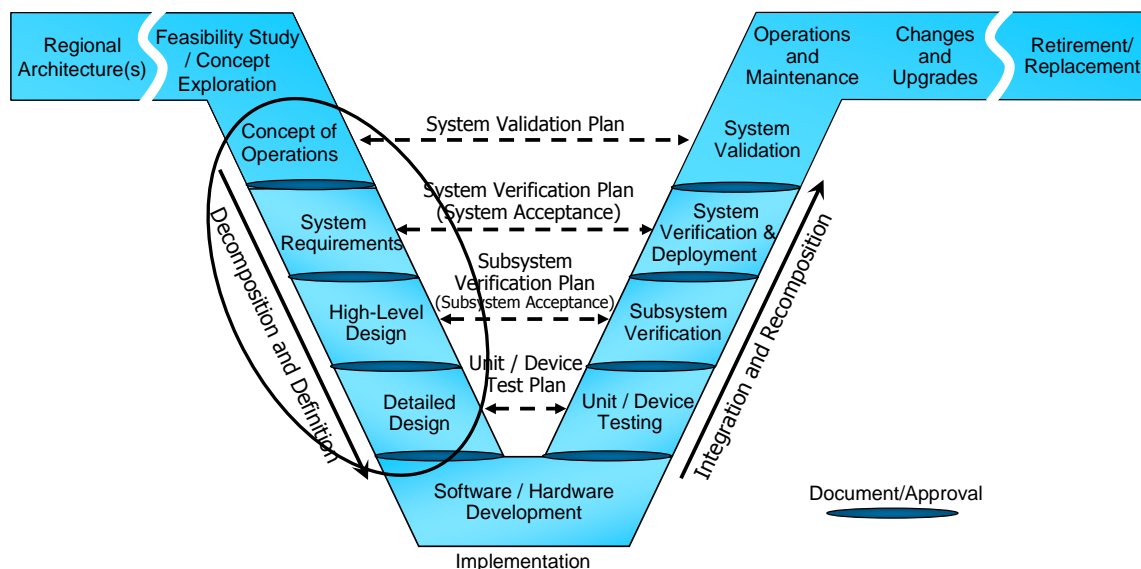


Figure 3 Systems Engineering Process “VEE” Diagram

Due to the nature of this standard, there is no software coding or hardware fabrication involved in the final outputs. Nor is there testing per se. This standard focuses on concept of operations (defined by user needs), system requirements (primarily functional requirements), and design (both aspects of high level and detailed design).

1.4 Document Purpose and Organization

The purpose of the *TMDD Volume II: Design Content* document is to identify and describe the design content, in terms of dialogs, message sets and data elements (data concepts), which satisfies the needs and fulfills the requirements for a traffic management center (TMC) to provide services to external centers (EC) via a systems interface.

These needs and requirements are identified and described in the companion volume *TMDD Volume I: Concept of Operations and Requirements*. TMDD Volume I also addresses topics surrounding the use of the standard such as:

- Terms and Definitions;
- Acronyms;
- References;
- Conformance to the standard;
- Extensions to the standard; and
- Backwards compatibility of this version of the standard with previous versions.

TMDD Volume II: Design Content is organized as follows.

- Section 1 of this document (Document Introduction) provides an introduction to the TMDD standard and describes the organization of the standard.
- Section 2 of this document (TMDD Interface Dialogs) identifies and describes the sequence of message exchanges needed for communications between a TMC and an EC.
- Section 3 of this document (TMDD 14817 and XML Definitions of Data Concepts) provides a highly structured definition of the TMDD data concepts that fulfill the TMDD requirements.
- Section 4 of this document is the Requirements Traceability Matrix (RTM), which provides a table documenting the data concepts that fulfill each requirements defined in Volume I.

2 TMDD Interface Dialogs and Messages

2.1 Normative

Section 2.1, sections 2.4 through 2.7 and sections 3.1 through 3.6 of Volume II are normative.

2.1.1 TMDD Electronic Design Files

The electronic design files of the TMDD are normative to the standard. These electronic design files contain the source design of the TMDD used in developing Volume II. These electronic files have been verified using software tools to be correct ASN.1, WSDL and XML Schema syntax.

A description of each TMDD electronic design file is included below:

File	Format	Description	md5sum
ISO14817M1.asn	ASN.1	Contains the ISO 14817 meta attribute schema.	f70c900ddcee49055470f7b8174a99da
TMDDM1.asn	ASN.1	Contains the ISO 14817 meta attributes for TMDD object class data concepts.	3d9a80ac8a20bb5961d3dc7334ee0f14
TMDDM4.asn	ASN.1	Contains the ISO 14817 meta attributes for TMDD message, data frame, and data element data concepts.	9d51cd9aadf125e5e62247d598bfa5e6
TMDDM5.asn	ASN.1	Contains the ISO 14817 meta attributes for dialog data concepts.	8260445a1649eb5852899023e4c8e2fd
TMDD.asn	ASN.1	Contains the ASN.1 definitions of TMDD messages, data frames, and data elements. This file contains the ASN.1 definitions used in the DATA-TYPE meta attribute of the tmdd-iso14817-m4.asn file	5fc3af7c407174039ce2af3ad4bab3e0
TMDD.xsd	XML Schema	Contains the XML Schema definitions of TMDD messages, data frames, and data elements.	59264a06b8d9a350ad871dfac3c2361
TMDD.wsdl	WSDL	Contains the WSDL definitions of TMDD dialogs.	b67b0b694fc032773c249fb692d46c63

Table 1 Normative TMDD Electronic Design Files

The md5sum is a check sum that may be used by an implementor to verify that they have acquired the same TMDD electronic design files as used by Volume II.

2.1.2 TMDD Support Electronic Design Files

Several additional electronic design files are also included with the TMDD electronic design files. These support files are not part of the TMDD standard, but rather represent design elements that are defined in other (normative) standards referenced by this TMDD standard. These support files are provided to complete and validate the TMDD standard. If there are any discrepancies between these provided electronic design support files and the normative referenced standard, the normative referenced standard shall take precedence.

A description of each electronic design support file is included below:

File	Format	Description	md5sum
ATIS.asn	ASN.1	Contains the ASN.1 definitions of the J2354 - Message Set for Advanced Traveler Information Systems data elements referenced by TMDD.	393b8d4d34111c61f0edd49ccacfb1fe
ATIS.xsd	XML Schema	Contains the XML Schema definitions of the J2354 - Message Set for Advanced Traveler Information Systems data elements referenced by TMDD.	350b47c28f42b356715a50c376e655e0

File	Format	Description	md5sum
C2C.asn	ASN.1	Contains the ASN.1 definitions of the NTCIP 2306, Application Profile for XML Message Encoding and Transport in ITS Center-to-Center Communications, design elements (dialogs, messages, data frames, data elements) referenced by TMDD.	61e75d6dca25b7772b7889a20e36ce15
C2C.xsd	XML Schema	Contains the XML Schema definitions of the NTCIP 2306, Application Profile for XML Message Encoding and Transport in ITS Center-to-Center Communications, design elements (dialogs, messages, data frames, data elements) referenced by TMDD.	5e2be5b71c47e93764d39bad250e6fd1
ITIS.asn	ASN.1	Contains the ASN.1 definitions of the SAE J2540-2, ITIS Phrase Lists design elements (data frames, data elements) referenced by TMDD.	6d28e0fe82504ba20dcc6ef213482a6c
ITIS-Adopted-03-00-02.xsd	XML Schema	Contains the XML Schema definitions of the SAE J2540-2, ITIS Phrase Lists design elements (data frames, data elements) referenced by TMDD.	ad42824aba4f1122b59c928ba69d19e5
ITIS-Local-03-00-02.xsd	XML Schema	Contains the local extensions for SAE J2540-2, ITIS Phrase Lists.	63040b4978e6563d6265807411a456b5
LRMS.asn	ASN.1	Contains the ASN.1 definitions of the SAE J2266, Location Referencing Message Specification (LRMS) design elements (data frames, data elements) referenced by TMDD.	99c3911691d71080b8a6c80518ecd6ac
LRMS-Adopted-02-00-00.xsd	XML Schema	Contains the XML Schema definitions of the SAE J2266, Location Referencing Message Specification (LRMS) design elements (data frames, data elements) referenced by TMDD.	2b1c34de8f26dd97dd79a26caced9609
LRMS-Local-02-00-00.xsd	XML Schema	Contains the local extensions for SAE J2266, Location Referencing Message Specification (LRMS).	66026cdb369c5c941a84646370261642
NTCIP.asn	ASN.1	Contains the ASN.1 definitions of the NTCIP 1200-series data objects (elements) referenced by TMDD.	8685f8590b4e238d2f7bd725363c9335
NTCIP-References.xsd	XML Schema	Contains the XML Schema definitions of NTCIP 1200-series data objects (elements) referenced by TMDD.	7cb66d84428774dd9960005f46919719

Table 2 Normative TMDD Support Electronic Design Files

2.1.3 TMDD ISO 14817 and ASN.1

ISO 14817 is a standard that describes the meta attributes of data concepts defined in a data dictionary, such as the TMDD. Volume II presents ASN.1 fragments of data concepts for: dialogs, messages, data frames, data elements and object classes. These fragments use namespace prefixes, such as “NTCIP.” and “LRMS.”, that represent a shorthand for specific corresponding ASN.1 imports. These fragments also use OID prefixes, such as “phaseEntry” and “dmsMessageEntry”, that represent a shorthand for specific corresponding ASN.1 imports. All namespace and OID prefixes in the ASN.1 fragments left unspecified are completely specified in the normative TMDD-ISO14817-M1.asn, TMDD-ISO14817-M4.asn, TMDD-ISO14817-M5.asn and TMDD.asn files (see Volume II, Table 1).

Note that the ASN.1 modules that define the TMDD data concepts are copyrighted by AASHTO/ITE and thus cannot be changed.

2.1.4 TMDD WSDL and XML Schema

Volume II presents XML fragment representation of dialogs, messages, data frames and data elements. These fragments use XML namespace prefixes, such as “xs:” and “itis:”, that

represent a shorthand for specific corresponding URIs defined in the TMDD WSDL and XML Schema. All namespaces left unspecified in the XML fragments are completely specified in the normative TMDD.xsd and TMDD.wsdl files (see Volume II, Table 1).

Within the TMDD.wsdl file, the tns is a namespace called "this namespace". The namespace the WSDL uses for itself is defined in the tns, and is appropriately referred to as '.../dialogs'. The TMDD.wsdl also references elements defined in other namespaces. The TMDD.wsdl references message names contained in the TMDD.xsd schema. The namespace is defined in the TMDD.xsd schema as '.../messages'. The TMDD.wsdl must use this name in referencing the TMDD messages. The NTCIP 2306 C2C group gave the name '.../c2c-message-administration' to the C2C schema elements. The TMDD.wsdl must use this name to reference the elements used to define messages for publication and subscription dialogs.

Note that the TMDD XML Schema and WSDL that define the TMDD data concepts are copyrighted by AASHTO/ITE and thus cannot be changed.

Note: The location attributes of the service descriptions are used to supply the actual URL that needs to be contacted to use the service. In actual practice, each center would customize this file to include the correct URLs for the services it provides. Therefore, the location URLs given in this file are dummy values, used for illustrative purposes only.

2.2 Tutorial

2.2.1 What is a Dialog?

A dialog describes a sequence of message exchanges. For example, a request-response dialog would include two messages being shared between an external center (EC) and owner center to accomplish information sharing. The first message would include the request for information, followed by a message containing the information (response). Some dialogs are simple and include one or two exchanges, while complex dialogs would include a larger number of steps and alterations of sequence steps based on some criteria (for example, special error handling).

Dialogs can be described using the Unified Modeling Language (UML) Sequence Diagrams. This is consistent with the ISO 14817 standard, which is being used by TMDD as the guide-spec for defining TMDD data concepts. A conceptual UML Sequence Diagram is shown below to illustrate relevant portions. The diagram shows examples of several types of "calls," not all of which are employed in the actual dialogs defined later in the section.

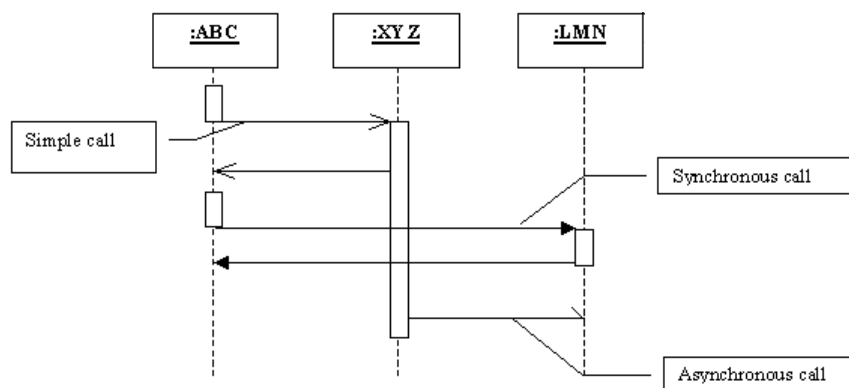
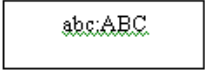
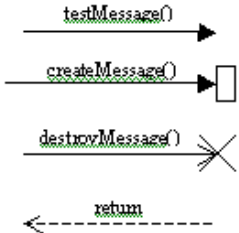


Figure 4 Parts of a UML Sequence Diagram

UML Sequence Diagram Element and Description	Symbol
Object: The primary element sequence diagram is an object—an instance of a class. A sequence diagram consists of sequences of interaction among different objects over a period of time. An object is represented by a named rectangle. The name to the left of the ":" is the object name and to its right is the class name.	
Message: The interaction between different objects in a sequence diagram is represented as messages. A message is denoted by a directed arrow. Depending on the type of message, the notation differs. In a sequence diagram, you can represent simple messages, special messages to create or destroy objects and message responses. In this document only the top and bottom message types (as shown in the diagram) are used.	

2.3 Defining the Dialog Sequence

2.3.1 Defining Message Patterns, Encoding and Transport

An information level standard, such as the TMDD, does not define the mechanism of encoding and transporting messages between centers—this is defined by Application Level Standards such as the Application Profiles NTCIP 2304 (AP-DATEX) and NTCIP 2306 (AP-C2CXML).

An informational level standard specifies the format and structure of message content and the sequence of message exchanges. The TMDD dialogs are information level dialogs, intended to be separate from the application level dialogs specified in the NTCIP 2304 and NTCIP 2306 standards. In this way, a TMDD-based solution can be developed with either the NTCIP 2304 or NTCIP 2306 at the application level.

The key application level standards, NTCIP 2304 and NTCIP 2306, are summarized below:

- **NTCIP 2304.** AP-DATEX (DATa EXchange) is both an NTCIP and ISO standard (ISO 14827) and defines the rules for message encoding and transport for ASN.1-based communications definitions.
- **NTCIP 2306.** AP-C2C XML is based on the rules of message encoding and transport of the W3C's (World Wide Web Consortium) Web Services Architecture. NTCIP 2306 provides a way to define messages, using the XML Schema, and dialogs, using the Web Services Definition Language (WSDL).

One additional standard is relevant to this discussion:

- **ISO 14817.** Provides a way to define data concepts: object classes, dialogs, messages, data frames and data elements.

2.3.2 NTCIP 2304 Overview

The NTCIP 2304 is formally entitled “Application Profile for DATEX-ASN (AP-DATEX).” NTCIP 2304 references the ISO 14827 standard that defines the rules for message exchanges, encoding and transport for ASN.1-based communications definitions. The NTCIP 2304 is based on the concept that two centers are always connected. Protocol level dialogs for connecting, logging in and disconnecting are defined and required. Once connected, two systems share information using a request-response message pattern or subscription-publication pattern.

2.3.3 NTCIP 2306 Overview

The NTCIP 2306 is formally entitled “Application Profile for XML Message Encoding and Transport in ITS Center-to-Center Communications.” The NTCIP-C2C XML provides a way to specify Web Services Definition Language (WSDL) for the following combinations of message transport:

- **XML over HTTP.**
- **SOAP over HTTP.**
- **XML over FTP.**

The TMDD.wsdl only addresses SOAP over HTTP at this time.

2.3.4 NTCIP 2304 and 2306 Message Patterns

Message patterns are the building blocks of dialogs. Simple dialogs can handle a wide variety of situations, or a project may define complex dialogs to meet its special project requirements. The basic building blocks of dialogs, or message patterns, are shown below:

- **Request-Response.** This message pattern supports the sending of a message followed by a response. This pattern implements a sequence of message communications.
- **Subscription-Publication.** This message pattern supports a subscriber application performing an initial request-response to set up future asynchronous publications from an information publisher application.

2.3.4.1 Specifying NTCIP 2304 Message Patterns

The NTCIP 2304 supports the TMDD request-response and subscription-publication message patterns and includes subscription types for: single, periodic and event-driven, corresponding to the TMDD single, periodic and event-driven subscription types. Note that NTCIP 2304 references clauses in ISO 148127-2 that allow further specification of the DATEX-ASN subscription modes.

2.3.4.2 Specifying NTCIP 2306 Message Patterns

The NTCIP 2306 supports the TMDD request-response and subscription-publication message patterns and includes subscription types for: oneTime, periodic and onChange, corresponding to the TMDD single, periodic and event-driven subscription types. Request-response message patterns are defined in Clause 7.1 of NTCIP 2306, while subscription-publication message patterns are defined in Clause 7.2 of NTCIP 2306. Note that NTCIP 2306 requires that the operation name, in this case the dialog, begin with the prefix “OP_” followed by a descriptive name for the operation. TMDD uses the prefix “DL_” to describe its operation. The subscription type is defined in Section 3.6.6.21, SubscriptionTypeItem, in this volume.

2.4 Generic TMDD Dialogs

Based on the overview presented above, TMDD will define several generic interface dialogs that include the following information:

- Description

- Sequence Diagram

The specific TMDD dialogs (discussed in Section 3.1) will reference one of the generic dialogs presented below.

Note that NTCIP 2306 requires that the operation name, in this case the dialog, begin with the prefix “OP_” followed by a descriptive name for the operation. TMDD uses the prefix “DL_” to describe its operation. In addition, TMDD uses the optional informationalText element defined in NTCIP 2306 (See NTCIP 2306:7.2.1.3:InformationalText), to return error messages, which are also called faults in this TMDD standard.

2.4.1 Generic Request-Response Dialog

2.4.1.1 Description

The request-response dialog supports the sending of an information or control message initiated by an external center followed by a response by the owner center upon request. Upon error, the owner center returns an error message.

2.4.1.2 Sequence Diagram

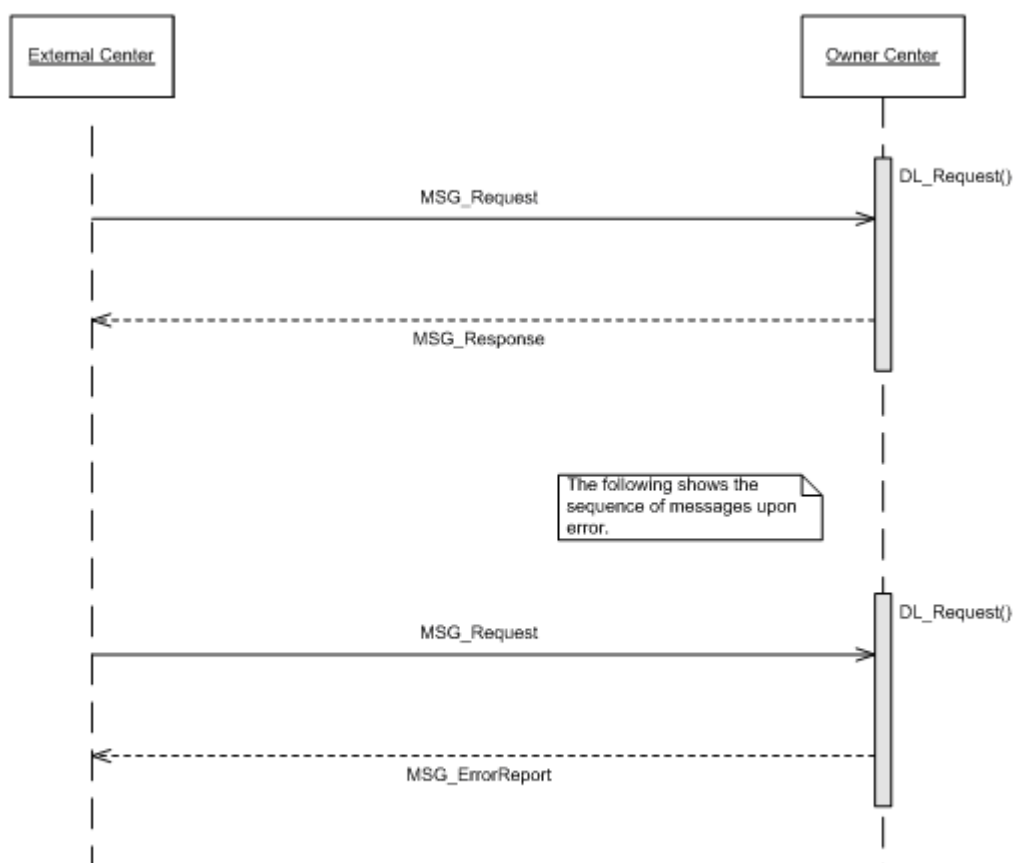


Figure 5 Generic Request-Response Dialog

2.4.2 Generic Subscription Dialog

2.4.2.1 Description

The subscription dialog, initiated by an EC and accepted by an OC, is mandatory for generation of information updates from an OC to an EC. Upon subscription for information updates by an EC, the OC shall provide a confirmation receipt. Upon error, the OC shall return an error message.

2.4.2.2 Sequence Diagram

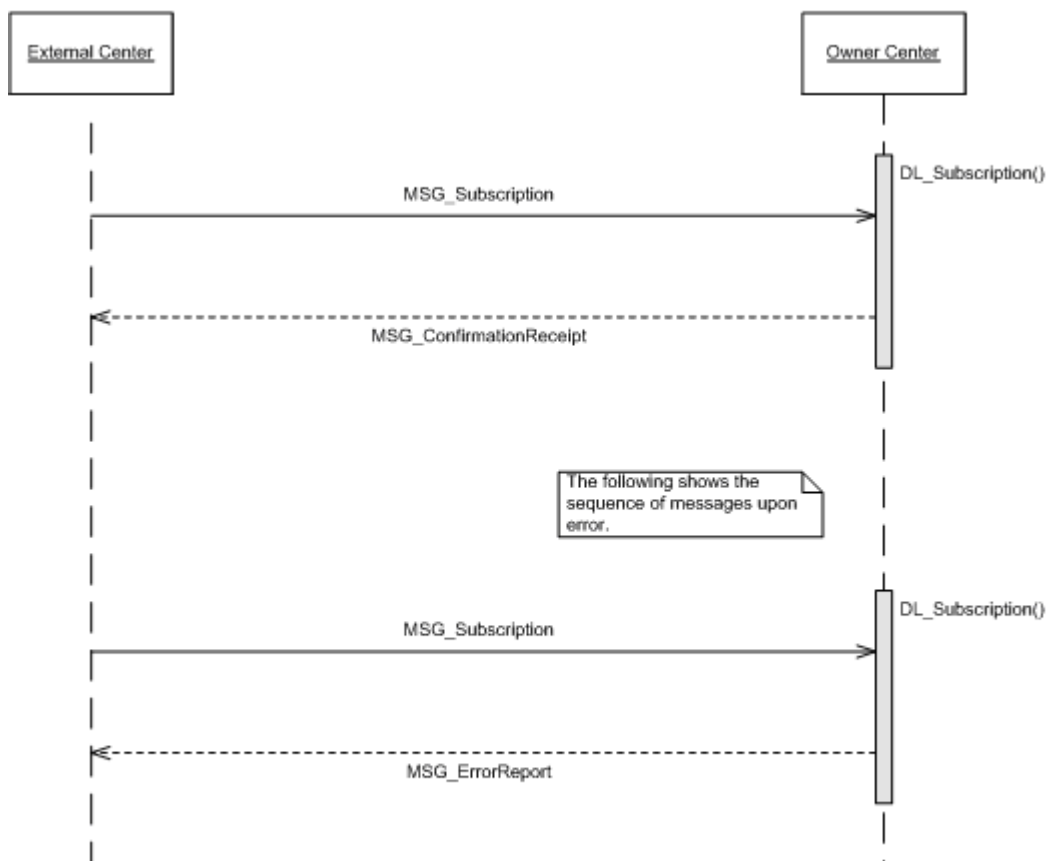


Figure 6 Generic Subscription Dialog

2.4.3 Generic Publication Update Dialog

2.4.3.1 Description

Upon acceptance of a subscription dialog, an OC shall provide information updates to an EC. Upon error, the EC shall return an error message.

2.4.3.2 Sequence Diagram

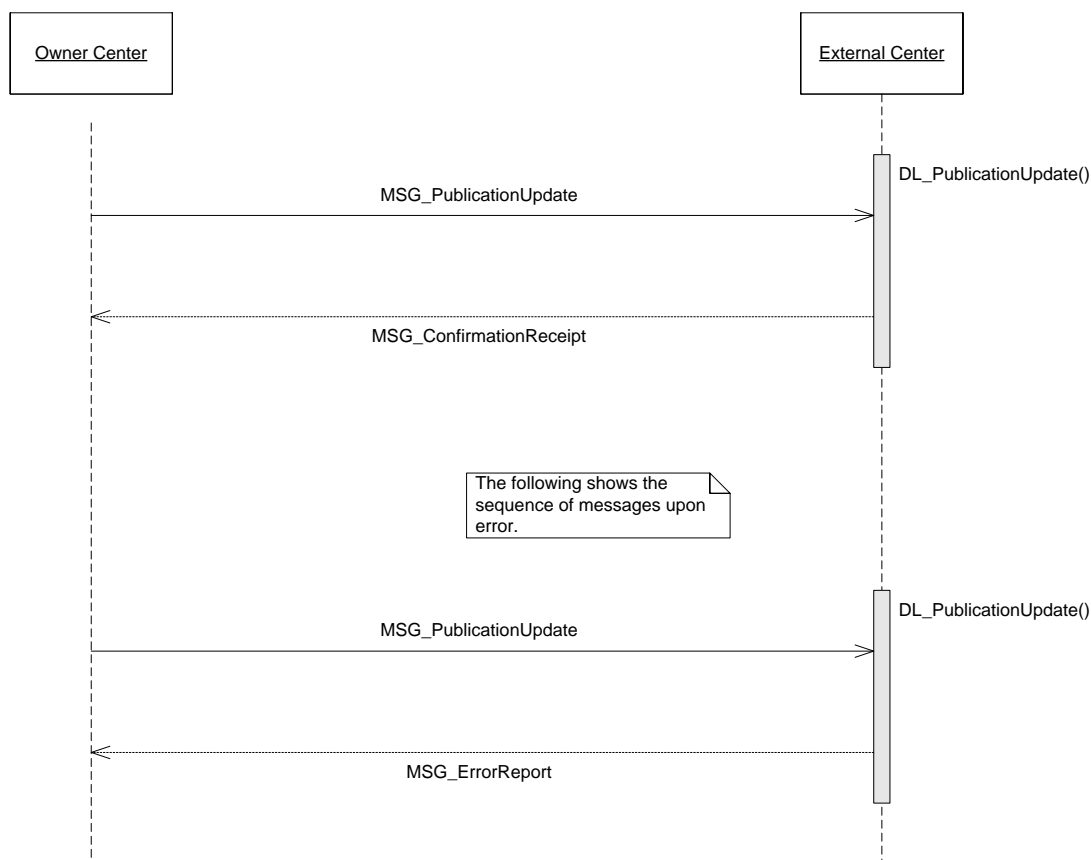


Figure 7 Generic Publication Update Dialog

2.5 Handling of Null Data Values

In defining the data content of messages in TMDD, some data elements are defined as mandatory, while others as optional. This section deals with a restriction on mandatory data elements – including those that are mandatory by the TMDD as well as those optional elements that have been deemed mandatory for a specific implementation – that do not have data available.

2.5.1 Handling of Null Data Values for Mandatory Data Elements

Mandatory data elements may not contain a null value (i.e., no data).

Therefore, if a center (whether owner center or external center) receives a message with null values, and is unable to process the message, the center shall respond with an `errorReportMsg` with the error-report-code set to 'missing-information-prevents-processing-message (3)'.

A center (whether owner center or external center) shall not respond with a message that contains null data. In this case, the center shall respond with an `errorReportMsg` with the error-report-code set to 'no-valid-data-available (8)'.

2.6 Handling TMDD Extensions

An implementation of the TMDD may add extensions by adding optional elements in one or more separate XML Schemas, WSDL, and/or ASN.1 modules, but not in the TMDD.xsd

schema, TMDD.wsdl, or TMDD ASN.1 module (which are both copyrighted by AASHTO/ITE). A similar concept applies to adding additional values to enumerations. Implementing an extension, however, results in new elements not being able to be checked during validation of a message (since any additional elements, by definition, are acceptable).

2.6.1 Extending Dialogs

Extensions may not modify the dialogs contained in the standard. Where necessary, new dialogs shall be added to support the extensions and such dialogs shall be documented in a manner which is consistent with this standard (See Volume II, Sections 2.3, 2.4 and 3.0). Add new dialogs in a separate WSDL file or ASN.1 module, but not in the TMDD WSDL or TMDD ASN.1 module (which are both copyrighted by AASHTO/ITE). For XML implementations, this entails adding <message>, <portType>, <operation> and <service> elements to the separate WSDL file.

New dialogs must meet the following requirements:

1. They must conform to NTCIP 2304 or NTCIP 2306.
2. They must support the Request-Response or Subscription-Publication message pattern
3. They must be documented in ISO 14817 ASN.1 and XML representation
4. The XML representation of the interface dialogs shall be WSDL (as defined in NTCIP 2306).

2.6.2 Extending Messages and Data Frames

2.6.2.1 ASN.1

ASN.1 has a built-in mechanism for extensibility that can be applied to the message and data frame content of TMDD; it is the ... (ellipses) keyword. The use of the ellipses keyword indicates that additional data frames and data elements are acceptable. An example of the use of the ellipses keyword is shown below.

```
ArchivedDataProcessingDocumentationMetadataRequest ::= SEQUENCE {  
    authentication Authentication,  
    organization-information OrganizationInformation,  
    ... }
```

Adding this line to the end of each TMDD message and data frame in the ASN.1 description will allow any content that is located at the end of a message or data frame to be validated.

2.6.2.2 XML

The XML schema has a built-in mechanism for extensibility that can be applied to the message and data frame content of TMDD; it is the “xs:any” construct. The xs:any construct in full form will be added as the last element of each message and data frame. An example is shown below.

```
<xs:any namespace="##other" processContents="lax" minOccurs="0"/>
```

Adding this line to the end of each TMDD message and data frame in the XML schema will allow any XML content that is located at the end of a message or data frame to be valid. In addition, the line shows that: 1) a namespace must be defined that defines the new extended content; 2) the contents will not be validated; and 3) that the extension is optional (minOccurs="0").

2.6.3 Extending Enumerations

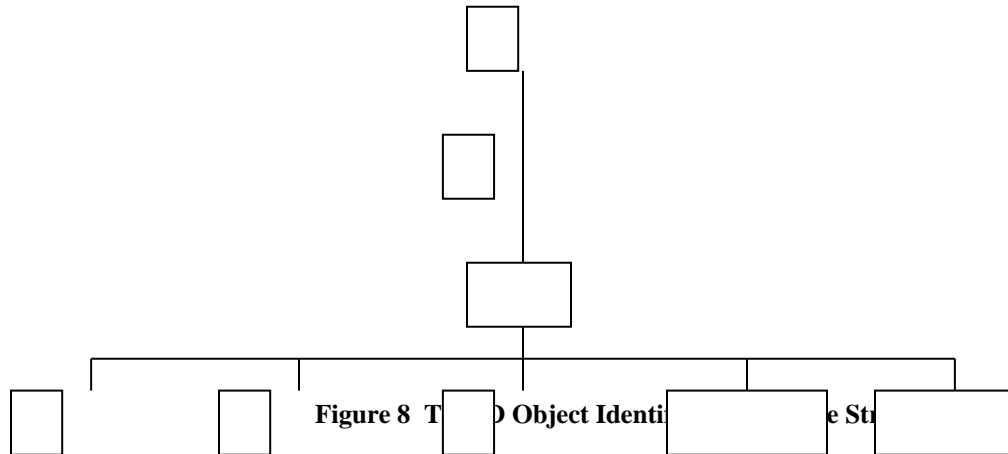
Where custom enumerated values are needed for a standardized data element, whether mandatory or optional, create a new data element with only the new enumerated values. When a custom enumerated value is needed for a mandatory data element in a standardized message or data frame, transmit the mandatory standardized data element with the value 'other', along with the new data element containing the extended enumeration value.

2.6.4 Extending Ranges

Where the range of a standardized data element needs to be extended, create a new data element with the extended range. Where the extended range is needed for a mandatory standardized data element in a standardized message or data frame, transmit the mandatory standardized data element with a value closest to the actual value along with the new data element with the extended range.

2.7 TMDD ASN.1 Object Identifiers

TMDD object identifiers (OID) are defined branching from the NEMA OID naming tree. This is defined in standard *NTCIP 8004 - Structure and Identification of Management Information (SMI) – version 02* and is illustrated in Figure 8 below.



The root node for TMDD (within the NEMA tree) is managed by the NTCIP coordinator. ITE/AASHTO are responsible for managing OID assignments of TMDD data concepts below TMDD root node. All of the data concepts defined in this document reside under the "tmdd" node.

The TMDD root node is: { iso (1) identified-organization (3) dod (6) internet (1) private (4) enterprise (1) nema (1206) transportation (4) tmdd (4) }. TMDD data concepts are further subdivided based on type. This is shown below with the OID representation next to the data concept type.

1. **Object Classes.** OID:{ tmddObjectClasses (1) }
2. **Data Elements.** OID:{ tmddDataElements (2) }
3. **Data Frames.** OID:{ tmddDataFrames (3) }
4. **Messages.** OID:{ tmddMessages (4) }
5. **Dialogs.** OID:{ tmddDialogs (5) }

3 TMDD ISO 14817 ASN.1 and XML Data Concept Definitions

This section contains the data concept definitions of TMDD for the following: object classes, dialogs, messages, data frames and data elements. The following apply:

1. The title used for each data concept clause is ASN.1 name.
2. With the exception of object classes, data concepts are organized by object class.
3. Each object class defined includes an ISO 14817 ASN.1 representation.
4. With the exception of object classes, each data concept defined includes the ISO 14817 ASN.1 and XML representation.
5. The XML representation of interface dialogs is that of WSDL (as defined in the NTCIP 2306).
6. The XML representation of messages, data frames and data elements are that of the XML Schema (as defined in SAE J2630).

Data concepts that refer to design elements in external standards are preceded by prefixes, such as "C2C." for ASN.1 representations and "NTCIP:" for XML representations.

The external references are:

File	ASN.1 Representations	XML Representations
J2354 - Message Set for Advanced Traveler Information Systems	ATIS.	ATIS:
NTCIP 2306, Application Profile for XML Message Encoding and Transport in ITS Center-to-Center Communications	C2C.	C2C:
SAE J2540-2, ITIS Phrase Lists	ITIS.	ITIS:
SAE J2266, Location Referencing Message Specification (LRMS)	LRMS.	LRMS:
NTCIP 1200-series data definitions	NTCIP.	NTCIP:

3.1 Dialogs

3.1.1 ArchivedData Class Dialogs

3.1.1.1 dlArchivedDataTrafficMonitoringMetadataRequest

3.1.1.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.1.1.2 ASN.1 REPRESENTATION

```
dlArchivedDataTrafficMonitoringMetadataRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-
  DlArchivedDataTrafficMonitoringMetadataRequest->OwnerCenter"
  ASN-NAME "DlArchivedDataTrafficMonitoringMetadataRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 1 }
  URL "R-R.gif"
  DEFINITION      "A request-response dialog that allows an external center to request
  an owner center provide archived data traffic monitoring metadata."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "archive requests",
    "archive status",
    "traffic archive data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
```

```

REFERENCED-MESSAGES {
    { tmddMessages 4 }, -- archivedDataTrafficMonitoringMetadataRequestMsg (Input
Message)
    { tmddMessages 3 }, -- archivedDataTrafficMonitoringMetadataMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 1 }, -- archivedData
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.1.1.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_ArchivedDataTrafficMonitoringMetadataRequest">
    <part name="message"
element="tmdd:archivedDataTrafficMonitoringMetadataRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_ArchivedDataTrafficMonitoringMetadata">
    <part name="message" element="tmdd:archivedDataTrafficMonitoringMetadataMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlArchivedDataTrafficMonitoringMetadataRequest">
    <documentation><objectClass>ArchivedData</objectClass><objectClass>ExternalCen
ter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_ArchivedDataTrafficMonitoringMetadataRequest"/>
    <output message="tns:MSG_ArchivedDataTrafficMonitoringMetadata"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.1.2 dlArchivedDataProcessingDocumentationMetadataRequest

3.1.1.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.1.2.2 ASN.1 REPRESENTATION

```

dlArchivedDataProcessingDocumentationMetadataRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-
DlArchivedDataProcessingDocumentationMetadataRequest->OwnerCenter"
    ASN-NAME                  "DlArchivedDataProcessingDocumentationMetadataRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 2 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
an owner center provide archived data processing documentation metadata."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "archive requests",
                                "archive status",
                                "traffic archive data"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 2 }, -- archivedDataProcessingDocumentationMetadataRequestMsg
(Input Message)

```

```

    { tmddMessages 1 }, -- archivedDataProcessingDocumentationMetadataMsg (Output
Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 1 }, -- archivedData
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.1.2.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_ArchivedDataProcessingDocumentationMetadataRequest">
    <part name="message"
element="tmdd:archivedDataProcessingDocumentationMetadataRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_ArchivedDataProcessingDocumentationMetadata">
    <part name="message"
element="tmdd:archivedDataProcessingDocumentationMetadataMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlArchivedDataProcessingDocumentationMetadataRequest">
    <documentation><objectClass>ArchivedData</objectClass><objectClass>ExternalCen
ter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_ArchivedDataProcessingDocumentationMetadataRequest"/>
    <output message="tns:MSG_ArchivedDataProcessingDocumentationMetadata"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.2 CCTV Class Dialogs

3.1.2.1 dlCCTVInventoryRequest

3.1.2.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.2.1.2 ASN.1 REPRESENTATION

```

dlCCTVInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlCCTVInventoryRequest->OwnerCenter"
    ASN-NAME                  "DlCCTVInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 3 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
an owner center to provide an inventory of the owner center's CCTVs."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {          "device data"          }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 6 }, -- cCTVInventoryMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {

```

```
{ tmddObjectClasses 2 }, -- cCTV
{ tmddObjectClasses 9 }, -- externalCenter
{ tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.2.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_CCTVInventory">
  <part name="message" element="tmdd:cCTVInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlCCTVInventoryRequest">
  <documentation><objectClass>CCTV</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_CCTVInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.2.2 dlCCTVStatusRequest

3.1.2.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.2.2.2 ASN.1 REPRESENTATION

```
dlCCTVStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "ExternalCenter<-DlCCTVStatusRequest->OwnerCenter"
  ASN-NAME "DlCCTVStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 4 }
  URL "R-R.gif"
  DEFINITION "A request-response dialog that allows an external center to request
an owner center to provide status on a given set of an owner center's CCTVs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "device status",
    "field equipment status" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 7 }, -- cCTVStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 2 }, -- cCTV
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.2.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
```

```
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_CCTVStatus">
  <part name="message" element="tmdd:cCCTVStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlCCTVStatusRequest">
  <documentation><objectClass>CCTV</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_CCTVStatus"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.2.3 dlCCTVControlRequest

3.1.2.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.2.3.2 ASN.1 REPRESENTATION

```
dlCCTVControlRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlCCTVControlRequest->OwnerCenter"
  ASN-NAME "DlCCTVControlRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 5 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
an owner center to perform a control action on an owner center's CCTV."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device control request",
                                "remote surveillance control"    }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 5 }, -- cCCTVControlRequestMsg (Input Message)
    { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 2 }, -- cCCTV
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.2.3.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_CCTVControlRequest">
  <part name="message" element="tmdd:cCCTVControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
  <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlCCTVControlRequest">
  <documentation><objectClass>CCTV</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
```

```
<input message="tns:MSG_CCTVControlRequest"/>
<output message="tns:MSG_DeviceControlResponse"/>
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.3 ConnectionManagement Class Dialogs

3.1.3.1 dlCenterActiveVerificationRequest

3.1.3.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.3.1.2 ASN.1 REPRESENTATION

```
dlCenterActiveVerificationRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "ExternalCenter<-DlCenterActiveVerificationRequest-
  >OwnerCenter"
  ASN-NAME                  "DlCenterActiveVerificationRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 6 }
  URL "R-R.gif"
  DEFINITION                "A request-response dialog that allows an external center to request
  that an owner center reply with a verification that it is active."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "nil" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 8 }, -- centerActiveVerificationRequestMsg (Input Message)
    { tmddMessages 9 }, -- centerActiveVerificationResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 3 }, -- connectionManagement
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.3.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_CenterActiveVerificationRequest">
  <part name="message" element="tmdd:centerActiveVerificationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_CenterActiveVerificationResponse">
  <part name="message" element="tmdd:centerActiveVerificationResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlCenterActiveVerificationRequest">
  <documentation><objectClass>ConnectionManagement</objectClass><objectClass>Ext
ernalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_CenterActiveVerificationRequest"/>
  <output message="tns:MSG_CenterActiveVerificationResponse"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.3.2 dlCenterActiveVerificationSubscription

3.1.3.2.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.3.2.2 ASN.1 REPRESENTATION

```
dlCenterActiveVerificationSubscription ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "ExternalCenter<-DlCenterActiveVerificationSubscription-
  >OwnerCenter"
  ASN-NAME "DlCenterActiveVerificationSubscription"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 7 }
  URL "Sub.gif"
  DEFINITION                "A request-response dialog that allows an external center to request
  a subscription to an owner center's periodic active verification updates."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {   "nil"   }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 8 }, -- centerActiveVerificationRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 3 }, -- connectionManagement
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.3.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_CenterActiveVerificationSubscription">
  <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
  <part name="message" element="tmdd:centerActiveVerificationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlCenterActiveVerificationSubscription">
  <documentation><objectClass>ConnectionManagement</objectClass><objectClass>Ext
  ernalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_CenterActiveVerificationSubscription"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.4 Detector Class Dialogs

3.1.4.1 dlDetectorInventoryRequest

3.1.4.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.4.1.2 ASN.1 REPRESENTATION

```
dlDetectorInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlDetectorInventoryRequest->OwnerCenter"
    ASN-NAME "DlDetectorInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 8 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
    an owner center to provide an inventory of the owner center's detector stations and
    sensors."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 13 }, -- detectorInventoryMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 4 }, -- detector
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.4.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DetectorInventory">
    <part name="message" element="tmdd:detectorInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDetectorInventoryRequest">
    <documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_DetectorInventory"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.4.2 dlDetectorStatusRequest

3.1.4.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.4.2.2 ASN.1 REPRESENTATION

```
dlDetectorStatusRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlDetectorStatusRequest->OwnerCenter"
    ASN-NAME "DlDetectorStatusRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 9 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
    an owner center provide a status of the owner center's detector stations and sensors."
```



```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device status",
    "field equipment status"  }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 16 }, -- detectorStatusMsg (Output Message)
    { tmddMessages 10 }  -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 4 }, -- detector
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.4.2.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DetectorStatus">
    <part name="message" element="tmdd:detectorStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDetectorStatusRequest">
    <documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_DetectorStatus"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.4.3 dlDetectorDataRequest

3.1.4.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.4.3.2 ASN.1 REPRESENTATION

```

dlDetectorDataRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlDetectorDataRequest->OwnerCenter"
    ASN-NAME "DlDetectorDataRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 10 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
an owner center to provide collected data for a given set of the owner center's
detector stations and sensors."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data",
        "road network conditions",
        "traffic information for media"  }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {

```

```

    { tmddMessages 12 }, -- detectorDataRequestMsg (Input Message)
    { tmddMessages 11 }, -- detectorDataMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 4 }, -- detector
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.4.3.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DetectorDataRequest">
    <part name="message" element="tmdd:detectorDataRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DetectorData">
    <part name="message" element="tmdd:detectorDataMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDetectorDataRequest">
    <documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DetectorDataRequest"/>
    <output message="tns:MSG_DetectorData"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.4.4 dlDetectorDataSubscription

3.1.4.4.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.4.4.2 ASN.1 REPRESENTATION

```

dlDetectorDataSubscription ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlDetectorDataSubscription->OwnerCenter"
    ASN-NAME                  "DlDetectorDataSubscription"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 11 }
    URL "Sub.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
an owner center set up a subscription for updates on an owner center's detector
station and sensor collected data."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data",
                                "road network conditions",
                                "traffic information for media"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 4 }, -- detector
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

```
} }
```

3.1.4.4.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DeviceInformationSubscription">
  <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDetectorDataSubscription">
  <documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationSubscription"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.4.5 dlDetectorMaintenanceHistoryRequest

3.1.4.5.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.4.5.2 ASN.1 REPRESENTATION

```
dlDetectorMaintenanceHistoryRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-DlDetectorMaintenanceHistoryRequest-
>OwnerCenter"
ASN-NAME              "DlDetectorMaintenanceHistoryRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 12 }
URL "R-R.gif"
DEFINITION            "A request-response dialog that allows an external center to request
an owner center to provide a maintenance history for a given set of the owner center's
detector stations and sensors."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "archive requests",
    "archive status",
    "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 15 }, -- detectorMaintenanceHistoryRequestMsg (Input Message)
  { tmddMessages 14 }, -- detectorMaintenanceHistoryMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 4 }, -- detector
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.4.5.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DetectorMaintenanceHistoryRequest">
  <part name="message" element="tmdd:detectorMaintenanceHistoryRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DetectorMaintenanceHistory">
  <part name="message" element="tmdd:detectorMaintenanceHistoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDetectorMaintenanceHistoryRequest">
  <documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DetectorMaintenanceHistoryRequest"/>
  <output message="tns:MSG_DetectorMaintenanceHistory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.5 Device Class Dialogs

3.1.5.1 dlDeviceCancelControlRequest

3.1.5.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.5.1.2 ASN.1 REPRESENTATION

```
dlDeviceCancelControlRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-DlDeviceCancelControlRequest->OwnerCenter"
ASN-NAME "DlDeviceCancelControlRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 13 }
URL "R-R.gif"
DEFINITION      "A request-response dialog that allows an external center to request
that an owner center cancel a previous device control request."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device control request",
    "emergency traffic control request",
    "emergency traffic coordination"  }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 17 }, -- deviceCancelControlRequestMsg (Input Message)
  { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 5 }, -- device
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.5.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DeviceCancelControlRequest">
  <part name="message" element="tmdd:deviceCancelControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
```

```

        <part name="message" element="tmdd:deviceControlResponseMsg"/>
    </message>
    <message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
        <part name="message" element="tmdd:errorReportMsg"/>
    </message>
    <operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDeviceCancelControlRequest">
        <documentation><objectClass>Device</objectClass><objectClass>ExternalCenter</o
bjectClass><objectClass>OwnerCenter</objectClass></documentation>
        <input message="tns:MSG_DeviceCancelControlRequest"/>
        <output message="tns:MSG_DeviceControlResponse"/>
        <fault name="errorReport" message="tns:MSG_ErrorReport"/>
    </operation>

```

3.1.5.2 dlDeviceControlStatusRequest

3.1.5.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.5.2.2 ASN.1 REPRESENTATION

```

dlDeviceControlStatusRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlDeviceControlStatusRequest->OwnerCenter"
    ASN-NAME                  "DlDeviceControlStatusRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 14 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
status about a previous device control request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {    "device control request"    }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 19 }, -- deviceControlStatusRequestMsg (Input Message)
        { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 5 }, -- device
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.5.2.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DeviceControlStatusRequest">
    <part name="message" element="tmdd:deviceControlStatusRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
    <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDeviceControlStatusRequest">
    <documentation><objectClass>Device</objectClass><objectClass>ExternalCenter</o
bjectClass><objectClass>OwnerCenter</objectClass></documentation>

```

```

        <input message="tns:MSG_DeviceControlStatusRequest"/>
        <output message="tns:MSG_DeviceControlResponse"/>
        <fault name="errorReport" message="tns:MSG_ErrorReport"/>
    </operation>

```

3.1.5.3 dlDeviceInformationSubscription

3.1.5.3.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.5.3.2 ASN.1 REPRESENTATION

```

dlDeviceInformationSubscription ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlDeviceInformationSubscription->OwnerCenter"
    ASN-NAME                  "DlDeviceInformationSubscription"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 15 }
    URL "Sub.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
    an owner center to set up a subscription for updates on an owner center's device
    inventory, status, or control schedule."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data",
        "device status"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 } , -- deviceInformationRequestMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) } , -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 5 }, -- device
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.5.3.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DeviceInformationSubscription">
    <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDeviceInformationSubscription">
    <documentation><objectClass>Device</objectClass><objectClass>ExternalCenter</o
bjectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationSubscription"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.6 DMS Class Dialogs

3.1.6.1 dlDMSInventoryRequest

3.1.6.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.6.1.2 ASN.1 REPRESENTATION

```
dlDMSInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlDMSInventoryRequest->OwnerCenter"
  ASN-NAME "DlDMSInventoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 16 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center to provide an inventory of the owner center's dynamic message signs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 25 }, -- dMSInventoryMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.6.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSInventory">
  <part name="message" element="tmdd:dMSInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDMSInventoryRequest">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_DMSInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.6.2 dlDMSStatusRequest

3.1.6.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.6.2.2 ASN.1 REPRESENTATION

```
dldMSStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DldMSStatusRequest->OwnerCenter"
  ASN-NAME "DldMSStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 17 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide a status on a given set of the owner center's dynamic message
  signs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device status",
    "emergency traffic control information",
    "field equipment status"    }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 31 }, -- dMSStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.6.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSStatus">
  <part name="message" element="tmdd:dMSStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DldMSStatusRequest">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_DMSStatus"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.6.3 dldMSMessageInventoryRequest

3.1.6.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.6.3.2 ASN.1 REPRESENTATION

```
dldMSMessageInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DldMSMessageInventoryRequest->OwnerCenter"
  ASN-NAME "DldMSMessageInventoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 18 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide the message library for a given set of the owner center's
  dynamic message signs."
```



```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 29 }, -- dMSMessageInventoryRequestMsg (Input Message)
    { tmddMessages 28 }, -- dMSMessageInventoryMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.6.3.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DMSMessageInventoryRequest">
    <part name="message" element="tmdd:dMSMessageInventoryRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSMessageInventory">
    <part name="message" element="tmdd:dMSMessageInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDMSMessageInventoryRequest">
    <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DMSMessageInventoryRequest"/>
    <output message="tns:MSG_DMSMessageInventory"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.6.4 dlDMSMessageInventorySubscription

3.1.6.4.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.6.4.2 ASN.1 REPRESENTATION

```

dlDMSMessageInventorySubscription ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-DlDMSMessageInventorySubscription-
>OwnerCenter"
ASN-NAME "DlDMSMessageInventorySubscription"
ASN-OBJECT-IDENTIFIER { tmddDialogs 19 }
URL "Sub.gif"
DEFINITION      "A request-response dialog that allows an external center to request
an owner center set up a subscription for updates on an owner center's message
library."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {

```

```

    { tmddMessages 29 }, -- dMSMessageInventoryRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.6.4.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DMSMessageInventorySubscription">
    <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
    <part name="message" element="tmdd:dMSMessageInventoryRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDMSMessageInventorySubscription">
    <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DMSMessageInventorySubscription"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.6.5 dlDMSMessageAppearanceRequest

3.1.6.5.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.6.5.2 ASN.1 REPRESENTATION

```

dlDMSMessageAppearanceRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlDMSMessageAppearanceRequest->OwnerCenter"
    ASN-NAME "DlDMSMessageAppearanceRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 20 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
an owner center provide the message appearance attributes for a given set of the owner
center's dynamic message signs."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 27 }, -- dMSMessageAppearanceRequestMsg (Input Message)
        { tmddMessages 26 }, -- dMSMessageAppearanceMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 6 }, -- dMS
        { tmddObjectClasses 9 }, -- externalCenter
    }
}

```

```
{ tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.6.5.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DMSTMessageAppearanceRequest">
  <part name="message" element="tmdd:dMSTMessageAppearanceRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSTMessageAppearance">
  <part name="message" element="tmdd:dMSTMessageAppearanceMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDMSTMessageAppearanceRequest">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DMSTMessageAppearanceRequest"/>
  <output message="tns:MSG_DMSTMessageAppearance"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.6.6 dlDMSTFontTableRequest

3.1.6.6.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.6.6.2 ASN.1 REPRESENTATION

```
dlDMSTFontTableRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlDMSTFontTableRequest->OwnerCenter"
  ASN-NAME              "DlDMSTFontTableRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 21 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide the font tables for the owner center's dynamic message signs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "device data" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 24 }, -- dMSTFontTableRequestMsg (Input Message)
    { tmddMessages 23 }, -- dMSTFontTableMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.6.6.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSTFontTableRequest">
  <part name="message" element="tmdd:dMSTFontTableRequestMsg"/>
</message>
```

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSFontTable">
  <part name="message" element="tmdd:dMSFontTableMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDMSFontTableRequest">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DMSFontTableRequest"/>
  <output message="tns:MSG_DMSFontTable"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.6.7 dlDMSControlRequest

3.1.6.7.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.6.7.2 ASN.1 REPRESENTATION

```
dlDMSControlRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlDMSControlRequest->OwnerCenter"
  ASN-NAME "DlDMSControlRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 22 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center to perform a control action on an owner center's dynamic message
  sign."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device control request",
                                "emergency traffic control request"    }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 22 }, -- dMSControlRequestMsg (Input Message)
    { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.6.7.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSControlRequest">
  <part name="message" element="tmdd:dMSControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
  <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDMSControlRequest">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
```

```
<input message="tns:MSG_DMSPriorityQueueRequest"/>
<output message="tns:MSG_DeviceControlResponse"/>
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.6.8 dlDMSPriorityQueueRequest

3.1.6.8.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.6.8.2 ASN.1 REPRESENTATION

```
dlDMSPriorityQueueRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlDMSPriorityQueueRequest->OwnerCenter"
  ASN-NAME "DlDMSPriorityQueueRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 23 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide a control priority queue on a given set of the owner center's
  dynamic message signs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device control request",
                                "emergency traffic control request"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 21 }, -- devicePriorityQueueRequestMsg (Input Message)
    { tmddMessages 30 }, -- dMSPriorityQueueMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.6.8.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DevicePriorityQueueRequest">
  <part name="message" element="tmdd:devicePriorityQueueRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSPriorityQueue">
  <part name="message" element="tmdd:dMSPriorityQueueMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDMSPriorityQueueRequest">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DevicePriorityQueueRequest"/>
  <output message="tns:MSG_DMSPriorityQueue"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.7 ESS Class Dialogs

3.1.7.1 dlESSInventoryRequest

3.1.7.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.7.1.2 ASN.1 REPRESENTATION

```
dLESSInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DLESSInventoryRequest->OwnerCenter"
    ASN-NAME              "DLESSInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 24 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
    an owner center to provide an inventory of the owner center's environmental sensor
    stations."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 32 }, -- eSSInventoryMsg (Output Message)
        { tmddMessages 10 }, -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 7 }, -- eSS
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.7.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ESSInventory">
    <part name="message" element="tmdd:eSSInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DLESSInventoryRequest">
    <documentation><objectClass>ESS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_ESSInventory"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.7.2 dLESSStatusRequest

3.1.7.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.7.2.2 ASN.1 REPRESENTATION

```
dLESSStatusRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DLESSStatusRequest->OwnerCenter"
```

```
ASN-NAME "DlESSStatusRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 25 }
URL "R-R.gif"
DEFINITION "A request-response dialog that allows an external center to request
an owner center provide a status on a given set of the owner center's environmental
sensor stations."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "device status",
    "field equipment status" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 35 }, -- eSSStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 7 }, -- eSS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.7.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ESSStatus">
    <part name="message" element="tmdd:eSSStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlESSStatusRequest">
    <documentation><objectClass>ESS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_ESSStatus"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.7.3 dlESSObservationMetadataRequest

3.1.7.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.7.3.2 ASN.1 REPRESENTATION

```
dlESSObservationMetadataRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME "ExternalCenter<-DlESSObservationMetadataRequest->OwnerCenter"
ASN-NAME "DlESSObservationMetadataRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 26 }
URL "R-R.gif"
DEFINITION "A request-response dialog that allows an external center to request
an owner center to provide an observation metadata for a given set of the owner
center's environmental sensor stations."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "device data",
    "environmental conditions data status",
```

```

        "transportation weather information request"    }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 33 }, -- eSSObservationMetadataMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 7 }, -- eSS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.7.3.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ESSObservationMetadata">
    <part name="message" element="tmdd:eSSObservationMetadataMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlESSObservationMetadataRequest">
    <documentation><objectClass>ESS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_ESSObservationMetadata"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.7.4 dlESSObservationReportRequest

3.1.7.4.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.7.4.2 ASN.1 REPRESENTATION

```

dlESSObservationReportRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME          "ExternalCenter<-DlESSObservationReportRequest->OwnerCenter"
ASN-NAME "DlESSObservationReportRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 27 }
URL "R-R.gif"
DEFINITION                "A request-response dialog that allows an external center to request
an owner center to provide an observation report for a given set of the owner center's
environmental sensor stations."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {    "device data",
    "environmental conditions data ",
    "qualified environmental conditions data"    }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)

```



```

    { tmddMessages 34 }, -- eSSObservationReportMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 7 }, -- eSS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.7.4.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ESSObservationReport">
    <part name="message" element="tmdd:eSSObservationReportMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlESSObservationReportRequest">
    <documentation><objectClass>ESS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_ESSObservationReport"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.8 Event Class Dialogs

3.1.8.1 dlFullEventUpdateRequest

3.1.8.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.8.1.2 ASN.1 REPRESENTATION

```

dlFullEventUpdateRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlFullEventUpdateRequest->OwnerCenter"
    ASN-NAME "DlFullEventUpdateRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 28 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
that an owner center provide information on the owner center's events. Note: event-
headline and event-element-details is OPTIONAL IF and ONLY IF this message is sent to
close an open event."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "incident information",
                                "incident response status",
                                "transportation system status"  }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 38 }, -- eventRequestMsg (Input Message)
        { tmddMessages 39 }, -- fEUMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 8 }, -- event

```

```
{ tmddObjectClasses 9 }, -- externalCenter
{ tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.8.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventRequest">
  <part name="message" element="tmdd:eventRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_FullEventUpdate">
  <part name="message" element="tmdd:fEUMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlFullEventUpdateRequest">
  <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_EventRequest"/>
  <output message="tns:MSG_FullEventUpdate"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.8.2 dlEventIndexRequest

3.1.8.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.8.2.2 ASN.1 REPRESENTATION

```
dlEventIndexRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlEventIndexRequest->OwnerCenter"
  ASN-NAME "DlEventIndexRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 29 }
  URL "R-R.gif"
  DEFINITION      "A request-response dialog that allows an external center to request
an owner center provide an index of the owner center's current events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "incident information",
    "incident response status",
    "transportation system status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 38 }, -- eventRequestMsg (Input Message)
    { tmddMessages 37 }, -- eventIndexMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 8 }, -- event
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.8.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventRequest">
  <part name="message" element="tmdd:eventRequestMsg"/>
```

```
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventIndex">
  <part name="message" element="tmdd:eventIndexMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlEventIndexRequest">
  <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_EventRequest"/>
  <output message="tns:MSG_EventIndex"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.8.3 dlActionLogRequest

3.1.8.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.8.3.2 ASN.1 REPRESENTATION

```
dlActionLogRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlActionLogRequest->OwnerCenter"
  ASN-NAME "DlActionLogRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 30 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
that an owner center provide information on the owner center's action logs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "event plans",
                                "incident information",
                                "incident response status"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 38 }, -- eventRequestMsg (Input Message)
    { tmddMessages 36 }, -- actionLogMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 8 }, -- event
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.8.3.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventRequest">
  <part name="message" element="tmdd:eventRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ActionLog">
  <part name="message" element="tmdd:actionLogMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlActionLogRequest">
```

```
<documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
<input message="tns:MSG_EventRequest"/>
<output message="tns:MSG_ActionLog"/>
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.8.4 dlFullEventUpdateSubscription

3.1.8.4.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.8.4.2 ASN.1 REPRESENTATION

```
dlFullEventUpdateSubscription ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlFullEventUpdateSubscription->OwnerCenter"
  ASN-NAME "DlFullEventUpdateSubscription"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 31 }
  URL "Sub.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center set up a subscription for updates on an owner center's events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "incident information",
    "incident response status",
    "transportation system status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 38 }, -- eventRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 8 }, -- event
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.8.4.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventSubscription">
  <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
  <part name="message" element="tmdd:eventRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlFullEventUpdateSubscription">
  <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_EventSubscription"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.8.5 dlEventIndexSubscription

3.1.8.5.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.8.5.2 ASN.1 REPRESENTATION

```
dlEventIndexSubscription ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlEventIndexSubscription->OwnerCenter"
  ASN-NAME "DlEventIndexSubscription"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 32 }
  URL "Sub.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center set up a subscription for updates on an owner center's event index."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "incident information",
                                "incident response status",
                                "transportation system status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 38 }, -- eventRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 8 }, -- event
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.8.5.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventSubscription">
  <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
  <part name="message" element="tmdd:eventRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlEventIndexSubscription">
  <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_EventSubscription"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.8.6 dlActionLogSubscription

3.1.8.6.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.8.6.2 ASN.1 REPRESENTATION

```
dlActionLogSubscription ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "ExternalCenter<-DlActionLogSubscription->OwnerCenter"
  ASN-NAME "DlActionLogSubscription"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 33 }
  URL "Sub.gif"
  DEFINITION                "A request-response dialog that allows an external center to request
  an owner center set up a subscription for updates on an owner center's action logs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {    "event plans",
    "incident information",
    "incident response status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 38 }, -- eventRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 8 }, -- event
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.8.6.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventSubscription">
  <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
  <part name="message" element="tmdd:eventRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlActionLogSubscription">
  <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_EventSubscription"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.9 Gate Class Dialogs

3.1.9.1 dlGateInventoryRequest

3.1.9.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.9.1.2 ASN.1 REPRESENTATION

```
dlGateInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "ExternalCenter<-DlGateInventoryRequest->OwnerCenter"
  ASN-NAME "DlGateInventoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 34 }
  URL "R-R.gif"
  DEFINITION                "A request-response dialog that allows an external center to request
  an owner center to provide an inventory of the owner center's gates."
```

```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device data",
    "emergency traffic coordination"  }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 42 }, -- gateInventoryMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 10 }, -- gate
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.9.1.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_GateInventory">
    <part name="message" element="tmdd:gateInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlGateInventoryRequest">
    <documentation><objectClass>Gate</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_GateInventory"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.9.2 dlGateStatusRequest

3.1.9.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.9.2.2 ASN.1 REPRESENTATION

```

dlGateStatusRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlGateStatusRequest->OwnerCenter"
    ASN-NAME "DlGateStatusRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 35 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
an owner center provide a status on a given set of the owner center's gates."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "emergency traffic control information",
        "device status",
        "field equipment status"  }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)

```

```

    { tmddMessages 43 }, -- gateStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 10 }, -- gate
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.9.2.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_GateStatus">
    <part name="message" element="tmdd:gateStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlGateStatusRequest">
    <documentation><objectClass>Gate</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_GateStatus"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.9.3 dlGateControlRequest

3.1.9.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.9.3.2 ASN.1 REPRESENTATION

```

dlGateControlRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlGateControlRequest->OwnerCenter"
    ASN-NAME "DlGateControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 36 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
an owner center to perform a control action on an owner center's gate."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "emergency traffic control request",
        "device control request",
        "emergency traffic coordination" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 40 }, -- gateControlRequestMsg (Input Message)
        { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 10 }, -- gate
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```


3.1.9.3.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_GateControlRequest">
  <part name="message" element="tmdd:gateControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
  <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlGateControlRequest">
  <documentation><objectClass>Gate</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_GateControlRequest"/>
  <output message="tns:MSG_DeviceControlResponse"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.9.4 dlGateControlScheduleRequest

3.1.9.4.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.9.4.2 ASN.1 REPRESENTATION

```
dlGateControlScheduleRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlGateControlScheduleRequest->OwnerCenter"
  ASN-NAME "DlGateControlScheduleRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 37 }
  URL "R-R.gif"
  DEFINITION      "A request-response dialog that allows an external center to request
  an owner center provide the device control schedule for a given set of the owner
  center's gates."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 41 }, -- gateControlScheduleMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 10 }, -- gate
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.9.4.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_GateControlSchedule">
  <part name="message" element="tmdd:gateControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
```

```

        <part name="message" element="tmdd:errorReportMsg"/>
    </message>
    <operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlGateControlScheduleRequest">
        <documentation><objectClass>Gate</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
        <input message="tns:MSG_DeviceInformationRequest"/>
        <output message="tns:MSG_GateControlSchedule"/>
        <fault name="errorReport" message="tns:MSG_ErrorReport"/>
    </operation>

```

3.1.10 HAR Class Dialogs

3.1.10.1 dlHARInventoryRequest

3.1.10.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.10.1.2 ASN.1 REPRESENTATION

```

dlHARInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlHARInventoryRequest->OwnerCenter"
    ASN-NAME "DlHARInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 38 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
an owner center to provide an inventory of the owner center's highway advisory
radios."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 46 }, -- hARInventoryMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 12 }, -- hAR
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.10.1.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARInventory">
    <part name="message" element="tmdd:hARInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlHARInventoryRequest">
    <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_HARInventory"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>

```

</operation>

3.1.10.2 dlHARMessageInventoryRequest

3.1.10.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.10.2.2 ASN.1 REPRESENTATION

```
dlHARMessageInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlHARMessageInventoryRequest->OwnerCenter"
    ASN-NAME "DlHARMessageInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 39 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
    an owner center provide the message library for a given set of the owner center's
    highway advisory radios."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 47 }, -- hARMessageInventoryMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 12 }, -- hAR
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.10.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARMessageInventory">
    <part name="message" element="tmdd:hARMessageInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlHARMessageInventoryRequest">
    <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_HARMessageInventory"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.10.3 dlHARStatusRequest

3.1.10.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.10.3.2 *ASN.1 REPRESENTATION*

```
dlHARStatusRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlHARStatusRequest->OwnerCenter"
    ASN-NAME "DlHARStatusRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 40 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
    an owner center provide a status on a given set of the owner center's highway advisory
    radios."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "emergency traffic control information",
        "device status",
        "field equipment status"  }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 49 }, -- hARStatusMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 12 }, -- hAR
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.10.3.3 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARStatus">
    <part name="message" element="tmdd:hARStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlHARStatusRequest">
    <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_HARStatus"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.10.4 *dlHARControlRequest*

3.1.10.4.1 *DIALOG REFERENCE*

See Clause 2.4.1 Generic Request-Response Dialog

3.1.10.4.2 *ASN.1 REPRESENTATION*

```
dlHARControlRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlHARControlRequest->OwnerCenter"
    ASN-NAME "DlHARControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 41 }
    URL "R-R.gif"
```

```

DEFINITION      "A request-response dialog that allows an external center to request
an owner center to perform a control action on an owner center's highway advisory
radio."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "emergency traffic control request",
      "device control request",
      "emergency traffic coordination"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 44 }, -- hARControlRequestMsg (Input Message)
    { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 12 }, -- hAR
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.10.4.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARControlRequest">
    <part name="message" element="tmdd:hARControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
    <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlHARControlRequest">
    <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_HARControlRequest"/>
    <output message="tns:MSG_DeviceControlResponse"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.10.5 dlHARControlScheduleRequest

3.1.10.5.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.10.5.2 ASN.1 REPRESENTATION

```

dlHARControlScheduleRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-DlHARControlScheduleRequest->OwnerCenter"
ASN-NAME "DlHARControlScheduleRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 42 }
URL "R-R.gif"
DEFINITION      "A request-response dialog that allows an external center to request
an owner center provide the device control schedule for a given set of the owner
center's highway advisory radios."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue

```

```
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
  { tmddMessages 45 }, -- hARControlScheduleMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 12 }, -- hAR
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.10.5.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARControlSchedule">
  <part name="message" element="tmdd:hARControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
  name="DlHARControlScheduleRequest">
  <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_HARControlSchedule"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.10.6 dlHARPriorityQueueRequest

3.1.10.6.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.10.6.2 ASN.1 REPRESENTATION

```
dlHARPriorityQueueRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "ExternalCenter<-DlHARPriorityQueueRequest->OwnerCenter"
  ASN-NAME "DlHARPriorityQueueRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 43 }
  URL "R-R.gif"
  DEFINITION "A request-response dialog that allows an external center to request
  an owner center provide a control priority queue on a given set of the owner center's
  highway advisory radios."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "device control request",
    "emergency traffic control request",
    "emergency traffic coordination" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 21 }, -- devicePriorityQueueRequestMsg (Input Message)
    { tmddMessages 48 }, -- hARPriorityQueueMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
```

```
{ tmddObjectClasses 12 }, -- hAR
{ tmddObjectClasses 9 }, -- externalCenter
{ tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.10.6.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DevicePriorityQueueRequest">
  <part name="message" element="tmdd:devicePriorityQueueRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARPriorityQueue">
  <part name="message" element="tmdd:hARPriorityQueueMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlHARPriorityQueueRequest">
  <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DevicePriorityQueueRequest"/>
  <output message="tns:MSG_HARPriorityQueue"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.11 IntersectionSignal Class Dialogs

3.1.11.1 dlIntersectionSignalInventoryRequest

3.1.11.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.11.1.2 ASN.1 REPRESENTATION

```
dlIntersectionSignalInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME "ExternalCenter<-DlIntersectionSignalInventoryRequest-
>OwnerCenter"
ASN-NAME "DlIntersectionSignalInventoryRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 44 }
URL "R-R.gif"
DEFINITION "A request-response dialog that allows an external center to request
an owner center to provide an inventory of the owner center's traffic signals."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
  { tmddMessages 53 }, -- intersectionSignalInventoryMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 13 }, -- intersectionSignal
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.11.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalInventory">
  <part name="message" element="tmdd:intersectionSignalInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DIIntersectionSignalInventoryRequest">
  <documentation><objectClass>IntersectionSignal</objectClass><objectClass>Exter
nalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_IntersectionSignalInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.11.2 dlIntersectionSignalStatusRequest

3.1.11.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.11.2.2 ASN.1 REPRESENTATION

```
dlIntersectionSignalStatusRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-DIIntersectionSignalStatusRequest-
>OwnerCenter"
ASN-NAME "DIIntersectionSignalStatusRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 45 }
URL "R-R.gif"
DEFINITION      "A request-response dialog that allows an external center to request
an owner center provide a status on a given set of the owner center's traffic
signals."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "emergency traffic control information",
      "device status",
      "field equipment status"  }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
  { tmddMessages 55 }, -- intersectionSignalStatusMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 13 }, -- intersectionSignal
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.11.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_IntersectionSignalStatus">
  <part name="message" element="tmdd:intersectionSignalStatusMsg"/>
```



```
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalStatusRequest">
  <documentation><objectClass>IntersectionSignal</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_IntersectionSignalStatus"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.11.3 dlIntersectionSignalTimingPatternInventoryRequest

3.1.11.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.11.3.2 ASN.1 REPRESENTATION

```
dlIntersectionSignalTimingPatternInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-
  DlIntersectionSignalTimingPatternInventoryRequest->OwnerCenter"
  ASN-NAME "DlIntersectionSignalTimingPatternInventoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 46 }
  URL "R-R.gif"
  DEFINITION      "A request-response dialog that allows an external center to request
  an owner center to provide timing patterns for a given set of the owner center's
  traffic signals."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 57 }, -- intersectionSignalTimingPatternInventoryRequestMsg
    (Input Message)
    { tmddMessages 56 }, -- intersectionSignalTimingPatternInventoryMsg (Output
    Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 13 }, -- intersectionSignal
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.11.3.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalTimingPatternInventoryRequest">
  <part name="message"
element="tmdd:intersectionSignalTimingPatternInventoryRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalTimingPatternInventory">
  <part name="message"
element="tmdd:intersectionSignalTimingPatternInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
```

```

        <part name="message" element="tmdd:errorReportMsg"/>
    </message>
    <operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalTimingPatternInventoryRequest">
        <documentation><objectClass>IntersectionSignal</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
        <input message="tns:MSG_IntersectionSignalTimingPatternInventoryRequest"/>
        <output message="tns:MSG_IntersectionSignalTimingPatternInventory"/>
        <fault name="errorReport" message="tns:MSG_ErrorReport"/>
    </operation>

```

3.1.11.4 dlIntersectionSignalTimingPatternInventorySubscription

3.1.11.4.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.11.4.2 ASN.1 REPRESENTATION

```

dlIntersectionSignalTimingPatternInventorySubscription ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-
    DlIntersectionSignalTimingPatternInventorySubscription->OwnerCenter"
    ASN-NAME "DlIntersectionSignalTimingPatternInventorySubscription"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 47 }
    URL "Sub.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
    an owner center set up a subscription for updates on an owner center's traffic signal
    timing patterns."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 57 }, -- intersectionSignalTimingPatternInventoryRequestMsg
    (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 13 }, -- intersectionSignal
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.11.4.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalTimingPatternInventorySubscription">
    <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
    <part name="message"
element="tmdd:intersectionSignalTimingPatternInventoryRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalTimingPatternInventorySubscription">

```

```

        <documentation><objectClass>IntersectionSignal</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
        <input
message="tns:MSG_IntersectionSignalTimingPatternInventorySubscription"/>
        <output message="tns:MSG_ConfirmationReceipt"/>
        <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.11.5 dlIntersectionSignalControlRequest

3.1.11.5.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.11.5.2 ASN.1 REPRESENTATION

```

dlIntersectionSignalControlRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME          "ExternalCenter<-DlIntersectionSignalControlRequest-
>OwnerCenter"
ASN-NAME "DlIntersectionSignalControlRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 48 }
URL "R-R.gif"
DEFINITION                "A request-response dialog that allows an external center to request
an owner center to perform a control action on an owner center's traffic signal."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "emergency traffic control request",
                              "device control request",
                              "emergency traffic coordination"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 50 }, -- intersectionSignalControlRequestMsg (Input Message)
    { tmddMessages 51 }, -- intersectionSignalControlResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 13 }, -- intersectionSignal
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
} }

```

3.1.11.5.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalControlRequest">
    <part name="message" element="tmdd:intersectionSignalControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalControlResponse">
    <part name="message" element="tmdd:intersectionSignalControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalControlRequest">
    <documentation><objectClass>IntersectionSignal</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_IntersectionSignalControlRequest"/>
    <output message="tns:MSG_IntersectionSignalControlResponse"/>

```

```
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.11.6 dlIntersectionSignalControlScheduleRequest

3.1.11.6.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.11.6.2 ASN.1 REPRESENTATION

```
dlIntersectionSignalControlScheduleRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlIntersectionSignalControlScheduleRequest-
  >OwnerCenter"
  ASN-NAME              "DlIntersectionSignalControlScheduleRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 49 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide the device control schedule for a given set of the owner
  center's traffic signals."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 52 }, -- intersectionSignalControlScheduleMsg (Output Message)
    { tmddMessages 10 }, -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 13 }, -- intersectionSignal
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.11.6.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalControlSchedule">
  <part name="message" element="tmdd:intersectionSignalControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalControlScheduleRequest">
  <documentation><objectClass>IntersectionSignal</objectClass><objectClass>Exter
  nalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_IntersectionSignalControlSchedule"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.11.7 dlIntersectionSignalPriorityQueueRequest

3.1.11.7.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.11.7.2 *ASN.1 REPRESENTATION*

```
dlIntersectionSignalPriorityQueueRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlIntersectionSignalPriorityQueueRequest-
    >OwnerCenter"
    ASN-NAME "DlIntersectionSignalPriorityQueueRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 50 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
    an owner center provide a control priority queue on a given set of the owner center's
    traffic signals."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device control request",
    "emergency traffic coordination" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 21 }, -- devicePriorityQueueRequestMsg (Input Message)
        { tmddMessages 54 }, -- intersectionSignalPriorityQueueMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 13 }, -- intersectionSignal
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.11.7.3 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DevicePriorityQueueRequest">
    <part name="message" element="tmdd:devicePriorityQueueRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalPriorityQueue">
    <part name="message" element="tmdd:intersectionSignalPriorityQueueMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalPriorityQueueRequest">
    <documentation><objectClass>IntersectionSignal</objectClass><objectClass>Exter
    nalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DevicePriorityQueueRequest"/>
    <output message="tns:MSG_IntersectionSignalPriorityQueue"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.12 **LCS Class Dialogs**

3.1.12.1 **dlLCSInventoryRequest**

3.1.12.1.1 *DIALOG REFERENCE*

See Clause 2.4.1 Generic Request-Response Dialog

3.1.12.1.2 *ASN.1 REPRESENTATION*

```
dlLCSInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "ExternalCenter<-DlLCSInventoryRequest->OwnerCenter"
  ASN-NAME "DlLCSInventoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 51 }
  URL "R-R.gif"
  DEFINITION                "A request-response dialog that allows an external center to request
  an owner center to provide an inventory of the owner center's lane control signals."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 60 }, -- lCSInventoryMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 14 }, -- lCS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.12.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LCSInventory">
  <part name="message" element="tmdd:lCSInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLCSInventoryRequest">
  <documentation><objectClass>LCS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_LCSInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.12.2 dlLCSStatusRequest

3.1.12.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.12.2.2 ASN.1 REPRESENTATION

```
dlLCSStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "ExternalCenter<-DlLCSStatusRequest->OwnerCenter"
  ASN-NAME "DlLCSStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 52 }
  URL "R-R.gif"
  DEFINITION                "A request-response dialog that allows an external center to request
  an owner center provide a status on a given set of the owner center's lane control
  signals."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "emergency traffic control information",
    "device status",
  }
```

```

        "field equipment status"    }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 61 }, -- lCSStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 14 }, -- lCS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.12.2.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LCSStatus">
    <part name="message" element="tmdd:lCSStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLCSStatusRequest">
    <documentation><objectClass>LCS</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_LCSStatus"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.12.3 dlLCSControlRequest

3.1.12.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.12.3.2 ASN.1 REPRESENTATION

```

dlLCSControlRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlLCSControlRequest->OwnerCenter"
    ASN-NAME              "DlLCSControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 53 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
an owner center to perform a control action on an owner center's lane control signal."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "emergency traffic control request",
        "device control request",
        "emergency traffic coordination" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 58 }, -- lCSControlRequestMsg (Input Message)
        { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
}

```

```

}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 14 }, -- lcs
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.12.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LCSControlRequest">
    <part name="message" element="tmdd:lcsControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
    <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLCSControlRequest">
    <documentation><objectClass>LCS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_LCSControlRequest"/>
    <output message="tns:MSG_DeviceControlResponse"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.12.4 dlLCSControlScheduleRequest

3.1.12.4.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.12.4.2 ASN.1 REPRESENTATION

```

dlLCSControlScheduleRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlLCSControlScheduleRequest->OwnerCenter"
    ASN-NAME "DlLCSControlScheduleRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 54 }
    URL "R-R.gif"
    DEFINITION           "A request-response dialog that allows an external center to request
an owner center provide the device control schedule for a given set of the owner
center's lane control signals."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 59 }, -- lcsControlScheduleMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 14 }, -- lcs
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.12.4.3 XML REPRESENTATION


```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LCSControlSchedule">
  <part name="message" element="tmdd:LCSControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
  name="DlLCSControlScheduleRequest">
  <documentation><objectClass>LCS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_LCSControlSchedule"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.13 Link Class Dialogs

3.1.13.1 dlLinkInventoryRequest

3.1.13.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.13.1.2 ASN.1 REPRESENTATION

```
dlLinkInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "ExternalCenter<-DlLinkInventoryRequest->OwnerCenter"
  ASN-NAME "DlLinkInventoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 55 }
  URL "R-R.gif"
  DEFINITION "A request-response dialog that allows an external center to request
an owner center to provide an inventory of the owner center's traffic network links."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "road network conditions" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 82 }, -- trafficNetworkInformationRequestMsg (Input Message)
    { tmddMessages 62 }, -- linkInventoryMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 15 }, -- link
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.13.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
  name="MSG_TrafficNetworkInformationRequest">
  <part name="message" element="tmdd:trafficNetworkInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LinkInventory">
  <part name="message" element="tmdd:linkInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
```

```
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLinkInventoryRequest">
  <documentation><objectClass>Link</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_TrafficNetworkInformationRequest"/>
  <output message="tns:MSG_LinkInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.13.2 dlLinkStatusRequest

3.1.13.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.13.2.2 ASN.1 REPRESENTATION

```
dlLinkStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "ExternalCenter<-DlLinkStatusRequest->OwnerCenter"
  ASN-NAME "DlLinkStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 56 }
  URL "R-R.gif"
  DEFINITION                "A request-response dialog that allows an external center to request
  an owner center provide a status on a given set of the owner center's traffic network
  links."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "road network conditions",
    "traffic information for media" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 82 }, -- trafficNetworkInformationRequestMsg (Input Message)
    { tmddMessages 63 }, -- linkStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 15 }, -- link
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.13.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_TrafficNetworkInformationRequest">
  <part name="message" element="tmdd:trafficNetworkInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LinkStatus">
  <part name="message" element="tmdd:linkStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLinkStatusRequest">
  <documentation><objectClass>Link</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_TrafficNetworkInformationRequest"/>
  <output message="tns:MSG_LinkStatus"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.14 Node Class Dialogs

3.1.14.1 dlNodeInventoryRequest

3.1.14.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.14.1.2 ASN.1 REPRESENTATION

```
dlNodeInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlNodeInventoryRequest->OwnerCenter"
  ASN-NAME "DlNodeInventoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 57 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center to provide an inventory of the owner center's traffic network nodes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "road network conditions"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 82 }, -- trafficNetworkInformationRequestMsg (Input Message)
    { tmddMessages 64 }, -- nodeInventoryMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 16 }, -- node
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.14.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_TrafficNetworkInformationRequest">
  <part name="message" element="tmdd:trafficNetworkInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_NodeInventory">
  <part name="message" element="tmdd:nodeInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlNodeInventoryRequest">
  <documentation><objectClass>Node</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_TrafficNetworkInformationRequest"/>
  <output message="tns:MSG_NodeInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.14.2 dlNodeStatusRequest

3.1.14.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.14.2.2 ASN.1 REPRESENTATION

```
dlNodeStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlNodeStatusRequest->OwnerCenter"
  ASN-NAME "DlNodeStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 58 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide a status on a given set of the owner center's traffic network
  nodes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "road network conditions",
    "traffic information for media"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 82 }, -- trafficNetworkInformationRequestMsg (Input Message)
    { tmddMessages 65 }, -- nodeStatusMsg (Output Message)
    { tmddMessages 10 }, -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 16 }, -- node
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.14.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_TrafficNetworkInformationRequest">
  <part name="message" element="tmdd:trafficNetworkInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_NodeStatus">
  <part name="message" element="tmdd:nodeStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlNodeStatusRequest">
  <documentation><objectClass>Node</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_TrafficNetworkInformationRequest"/>
  <output message="tns:MSG_NodeStatus"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.15 Organization Class Dialogs

3.1.15.1 dlOrganizationInformationRequest

3.1.15.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.15.1.2 ASN.1 REPRESENTATION

```
dlOrganizationInformationRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlOrganizationInformationRequest->OwnerCenter"
  ASN-NAME "DlOrganizationInformationRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 59 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  that an owner center provide its organization and center information."
```

```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "traffic information coordination"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 67 }, -- organizationInformationRequestMsg (Input Message)
    { tmddMessages 66 }, -- organizationInformationMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 17 }, -- organization
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.15.1.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_OrganizationInformationRequest">
    <part name="message" element="tmdd:organizationInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_OrganizationInformation">
    <part name="message" element="tmdd:organizationInformationMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlOrganizationInformationRequest">
    <documentation><objectClass>Organization</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_OrganizationInformationRequest"/>
    <output message="tns:MSG_OrganizationInformation"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.15.2 dlOrganizationInformationSubscription

3.1.15.2.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.15.2.2 ASN.1 REPRESENTATION

```

dlOrganizationInformationSubscription ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlOrganizationInformationSubscription-
>OwnerCenter"
    ASN-NAME "DlOrganizationInformationSubscription"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 60 }
    URL "Sub.gif"
    DEFINITION           "A request-response dialog that allows an external center to request
an owner center set up a subscription for updates on an owner center's organization
information."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "traffic information coordination"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {

```

```

    { tmddMessages 67 }, -- organizationInformationRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 17 }, -- organization
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.15.2.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_OrganizationInformationSubscription">
    <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
    <part name="message" element="tmdd:organizationInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlOrganizationInformationSubscription">
    <documentation><objectClass>Organization</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_OrganizationInformationSubscription"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.16 RampMeter Class Dialogs

3.1.16.1 dlRampMeterInventoryRequest

3.1.16.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.16.1.2 ASN.1 REPRESENTATION

```

dlRampMeterInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME "ExternalCenter<-DlRampMeterInventoryRequest->OwnerCenter"
    ASN-NAME "DlRampMeterInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 61 }
    URL "R-R.gif"
    DEFINITION "A request-response dialog that allows an external center to request
an owner center to provide an inventory of the owner center's ramp meters."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 70 }, -- rampMeterInventoryMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 19 }, -- rampMeter
        { tmddObjectClasses 9 }, -- externalCenter
    }
}

```

```
{ tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.16.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterInventory">
  <part name="message" element="tmdd:rampMeterInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlRampMeterInventoryRequest">
  <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_RampMeterInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.16.2 dlRampMeterStatusRequest

3.1.16.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.16.2.2 ASN.1 REPRESENTATION

```
dlRampMeterStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "ExternalCenter<-DlRampMeterStatusRequest->OwnerCenter"
  ASN-NAME "DlRampMeterStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 62 }
  URL "R-R.gif"
  DEFINITION "A request-response dialog that allows an external center to request
an owner center provide a status on a given set of the owner center's ramp meters."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "emergency traffic control information",
    "device status",
    "field equipment status" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 73 }, -- rampMeterStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 19 }, -- rampMeter
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.16.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
```

```
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterStatus">
  <part name="message" element="tmdd:rampMeterStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRampMeterStatusRequest">
  <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_RampMeterStatus"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.16.3 dlRampMeterControlRequest

3.1.16.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.16.3.2 ASN.1 REPRESENTATION

```
dlRampMeterControlRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlRampMeterControlRequest->OwnerCenter"
  ASN-NAME "DlRampMeterControlRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 63 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
an owner center to perform a control action on an owner center's ramp meter."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "emergency traffic control request",
                                "device control request",
                                "emergency traffic coordination"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 68 }, -- rampMeterControlRequestMsg (Input Message)
    { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 19 }, -- rampMeter
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.16.3.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterControlRequest">
  <part name="message" element="tmdd:rampMeterControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
  <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRampMeterControlRequest">
```



```
<documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
<input message="tns:MSG_RampMeterControlRequest"/>
<output message="tns:MSG_DeviceControlResponse"/>
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.16.4 dlRampMeterControlScheduleRequest

3.1.16.4.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.16.4.2 ASN.1 REPRESENTATION

```
dlRampMeterControlScheduleRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME          "ExternalCenter<-DlRampMeterControlScheduleRequest-
>OwnerCenter"
ASN-NAME "DlRampMeterControlScheduleRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 64 }
URL "R-R.gif"
DEFINITION                "A request-response dialog that allows an external center to request
an owner center provide the device control schedule for a given set of the owner
center's ramp meters."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 69 }, -- rampMeterControlScheduleMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 19 }, -- rampMeter
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.16.4.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterControlSchedule">
  <part name="message" element="tmdd:rampMeterControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlRampMeterControlScheduleRequest">
  <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_RampMeterControlSchedule"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.16.5 dlRampMeterPriorityQueueRequest

3.1.16.5.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.16.5.2 ASN.1 REPRESENTATION

```
dlRampMeterPriorityQueueRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlRampMeterPriorityQueueRequest->OwnerCenter"
  ASN-NAME "DlRampMeterPriorityQueueRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 65 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide a control priority queue on a given set of the owner center's
  ramp meters."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device control request",
    "emergency traffic control request",
    "emergency traffic coordination"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 21 }, -- devicePriorityQueueRequestMsg (Input Message)
    { tmddMessages 72 }, -- rampMeterPriorityQueueMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 19 }, -- rampMeter
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.16.5.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DevicePriorityQueueRequest">
  <part name="message" element="tmdd:devicePriorityQueueRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterPriorityQueue">
  <part name="message" element="tmdd:rampMeterPriorityQueueMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlRampMeterPriorityQueueRequest">
  <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DevicePriorityQueueRequest"/>
  <output message="tns:MSG_RampMeterPriorityQueue"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.16.6 dlRampMeterPlanInventoryRequest

3.1.16.6.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.16.6.2 *ASN.1 REPRESENTATION*

```
dlRampMeterPlanInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlRampMeterPlanInventoryRequest->OwnerCenter"
    ASN-NAME "DlRampMeterPlanInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 66 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
    an owner center to provide timing plans for a given set of the owner center's ramp
    meters."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {    "device data"    }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 71 }, -- rampMeterPlanInventoryMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 19 }, -- rampMeter
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.16.6.3 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_RampMeterPlanInventoryRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterPlanInventory">
    <part name="message" element="tmdd:rampMeterPlanInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlRampMeterPlanInventoryRequest">
    <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_RampMeterPlanInventoryRequest"/>
    <output message="tns:MSG_RampMeterPlanInventory"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.16.7 *dlRampMeterPlanInventorySubscription*

3.1.16.7.1 *DIALOG REFERENCE*

See Clause 2.4.2 Generic Subscription Dialog

3.1.16.7.2 *ASN.1 REPRESENTATION*

```
dlRampMeterPlanInventorySubscription ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlRampMeterPlanInventorySubscription-
    >OwnerCenter"
    ASN-NAME "DlRampMeterPlanInventorySubscription"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 67 }
```

```

URL "Sub.gif"
DEFINITION      "A request-response dialog that allows an external center to request
an owner center set up a subscription for updates on an owner center's ramp meter
timing plans."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 19 }, -- rampMeter
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.16.7.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_RampMeterPlanInventorySubscription">
    <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlRampMeterPlanInventorySubscription">
    <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_RampMeterPlanInventorySubscription"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.17 Route Class Dialogs

3.1.17.1 dlRouteInventoryRequest

3.1.17.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.17.1.2 ASN.1 REPRESENTATION

```

dlRouteInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-DlRouteInventoryRequest->OwnerCenter"
ASN-NAME "DlRouteInventoryRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 68 }
URL "R-R.gif"
DEFINITION      "A request-response dialog that allows an external center to request
an owner center to provide an inventory of the owner center's traffic network routes."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "road network conditions"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}

```

```

ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 82 }, -- trafficNetworkInformationRequestMsg (Input Message)
  { tmddMessages 74 }, -- routeInventoryMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 20 }, -- route
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.17.1.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_TrafficNetworkInformationRequest">
  <part name="message" element="tmdd:trafficNetworkInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RouteInventory">
  <part name="message" element="tmdd:routeInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRouteInventoryRequest">
  <documentation><objectClass>Route</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_TrafficNetworkInformationRequest"/>
  <output message="tns:MSG_RouteInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.17.2 dlRouteStatusRequest

3.1.17.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.17.2.2 ASN.1 REPRESENTATION

```

dlRouteStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlRouteStatusRequest->OwnerCenter"
  ASN-NAME "DlRouteStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 69 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide a status on a given set of the owner center's traffic network
  routes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "road network conditions",
                                "traffic information for media"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 82 }, -- trafficNetworkInformationRequestMsg (Input Message)
    { tmddMessages 75 }, -- routeStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
}

```

```
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 20 }, -- route
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.17.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_TrafficNetworkInformationRequest">
    <part name="message" element="tmdd:trafficNetworkInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RouteStatus">
    <part name="message" element="tmdd:routeStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRouteStatusRequest">
    <documentation><objectClass>Route</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_TrafficNetworkInformationRequest"/>
    <output message="tns:MSG_RouteStatus"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.18 Section Class Dialogs

3.1.18.1 dlSectionStatusRequest

3.1.18.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.18.1.2 ASN.1 REPRESENTATION

```
dlSectionStatusRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME "ExternalCenter<-DlSectionStatusRequest->OwnerCenter"
    ASN-NAME "DlSectionStatusRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 70 }
    URL "R-R.gif"
    DEFINITION "A request-response dialog that allows an external center to request
an owner center provide a status on a given set of the owner center's sections."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "emergency traffic control information",
        "device status",
        "field equipment status" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
        { tmddMessages 81 }, -- sectionStatusMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 21 }, -- section
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.18.1.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_SectionStatus">
  <part name="message" element="tmdd:sectionStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlSectionStatusRequest">
  <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_SectionStatus"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.18.2 dlSectionControlRequest

3.1.18.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.18.2.2 ASN.1 REPRESENTATION

```
dlSectionControlRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlSectionControlRequest->OwnerCenter"
  ASN-NAME "DlSectionControlRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 71 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
a control action on an owner center's intersection section."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "emergency traffic control request",
                                "device control request",
                                "emergency traffic coordination"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 76 }, -- sectionControlRequestMsg (Input Message)
    { tmddMessages 77 }, -- sectionControlResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 21 }, -- section
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.18.2.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_SectionControlRequest">
  <part name="message" element="tmdd:sectionControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_SectionControlResponse">
  <part name="message" element="tmdd:sectionControlResponseMsg"/>
</message>
```

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlSectionControlRequest">
  <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_SectionControlRequest"/>
  <output message="tns:MSG_SectionControlResponse"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.18.3 dlSectionControlScheduleRequest

3.1.18.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.18.3.2 ASN.1 REPRESENTATION

```
dlSectionControlScheduleRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlSectionControlScheduleRequest->OwnerCenter"
  ASN-NAME              "DlSectionControlScheduleRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 72 }
  URL "R-R.gif"
  DEFINITION            "A request-response dialog that allows an external center to request
  an owner center provide the device control schedule for a given set of the owner
  center's traffic signal sections."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "device data" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 78 }, -- sectionControlScheduleMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 21 }, -- section
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.18.3.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_SectionControlScheduleResponse">
  <part name="message" element="tmdd:sectionControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlSectionControlScheduleRequest">
  <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_SectionControlScheduleResponse"/>
```



```
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.18.4 dlSectionControlStatusRequest

3.1.18.4.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.18.4.2 ASN.1 REPRESENTATION

```
dlSectionControlStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlSectionControlStatusRequest->OwnerCenter"
  ASN-NAME "DlSectionControlStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 73 }
  URL "R-R.gif"
  DEFINITION      "A request-response dialog that allows an owner center to provide
status about a previous section control requests to an external center on the owner
center's intersection sections."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "device control request" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 79 }, -- sectionControlStatusRequestMsg (Input Message)
    { tmddMessages 77 }, -- sectionControlResponseMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 21 }, -- section
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.18.4.3 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_SectionControlStatusRequest">
  <part name="message" element="tmdd:sectionControlStatusRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_SectionControlResponse">
  <part name="message" element="tmdd:sectionControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlSectionControlStatusRequest">
  <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_SectionControlStatusRequest"/>
  <output message="tns:MSG_SectionControlResponse"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.18.5 dlSectionPriorityQueueRequest

3.1.18.5.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.18.5.2 *ASN.1 REPRESENTATION*

```
dlSectionPriorityQueueRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "ExternalCenter<-DlSectionPriorityQueueRequest->OwnerCenter"
    ASN-NAME "DlSectionPriorityQueueRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 74 }
    URL "R-R.gif"
    DEFINITION            "A request-response dialog that allows an external center to request
    an owner center provide a control priority queue on a given set of the owner center's
    sections."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device control request",
    "emergency traffic control request",
    "emergency traffic coordination" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 21 }, -- devicePriorityQueueRequestMsg (Input Message)
        { tmddMessages 80 }, -- sectionPriorityQueueMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 21 }, -- section
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.18.5.3 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DevicePriorityQueueRequest">
    <part name="message" element="tmdd:devicePriorityQueueRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_SectionPriorityQueue">
    <part name="message" element="tmdd:sectionPriorityQueueMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlSectionPriorityQueueRequest">
    <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DevicePriorityQueueRequest"/>
    <output message="tns:MSG_SectionPriorityQueue"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.18.6 *dlSectionSignalTimingPatternInventoryRequest*

3.1.18.6.1 *DIALOG REFERENCE*

See Clause 2.4.1 Generic Request-Response Dialog

3.1.18.6.2 *ASN.1 REPRESENTATION*

```
dlSectionSignalTimingPatternInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
```

```

DESCRIPTIVE-NAME      "ExternalCenter<-DlSectionSignalTimingPatternInventoryRequest-
>OwnerCenter"
ASN-NAME "DlSectionSignalTimingPatternInventoryRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 123 }
URL "R-R.gif"
DEFINITION            "A request-response dialog that allows an external center to request
an owner center to provide timing patterns for a given set of the owner center's
signal sections."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "nil" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 87 }, -- SectionSignalTimingPatternInventoryRequestMsg (Input
Message)
  { tmddMessages 86 }, -- SectionSignalTimingPatternInventoryMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 21 }, -- section
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.18.6.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_SectionSignalTimingPatternInventoryRequest">
  <part name="message"
element="tmdd:SectionSignalTimingPatternInventoryRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_SectionSignalTimingPatternInventory">
  <part name="message" element="tmdd:SectionSignalTimingPatternInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlSectionSignalTimingPatternInventoryRequest">
  <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_SectionSignalTimingPatternInventoryRequest"/>
  <output message="tns:MSG_SectionSignalTimingPatternInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.18.7 dlSectionSignalTimingPatternInventorySubscription

3.1.18.7.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.18.7.2 ASN.1 REPRESENTATION

```

dlSectionSignalTimingPatternInventorySubscription ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-
DlSectionSignalTimingPatternInventorySubscription->OwnerCenter"
ASN-NAME "DlSectionSignalTimingPatternInventorySubscription"
ASN-OBJECT-IDENTIFIER { tmddDialogs 124 }

```

```

URL "Sub.gif"
DEFINITION      "A request-response dialog that allows an external center to request
an owner center set up a subscription for updates on an owner center's signal section
timing patterns."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "nil"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 87 }, -- SectionSignalTimingPatternInventoryRequestMsg (Input
Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 21 }, -- section
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.18.7.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_SectionSignalTimingPatternInventorySubscription">
    <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
    <part name="message"
element="tmdd:SectionSignalTimingPatternInventoryRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlSectionSignalTimingPatternInventorySubscription">
    <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_SectionSignalTimingPatternInventorySubscription"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.19 TransportationNetwork Class Dialogs

3.1.19.1 dlTrafficNetworkInformationSubscription

3.1.19.1.1 DIALOG REFERENCE

See Clause 2.4.2 Generic Subscription Dialog

3.1.19.1.2 ASN.1 REPRESENTATION

```

dlTrafficNetworkInformationSubscription ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME      "ExternalCenter<-DlTrafficNetworkInformationSubscription-
>OwnerCenter"
ASN-NAME "DlTrafficNetworkInformationSubscription"
ASN-OBJECT-IDENTIFIER { tmddDialogs 75 }
URL "Sub.gif"

```

```

DEFINITION          "A request-response dialog that allows an external center to request
an owner center set up a subscription for updates on an owner center's traffic network
nodes, links, and routes."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {          "traffic information coordination",
                                "road network conditions"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 82 }, -- trafficNetworkInformationRequestMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 22 }, -- transportationNetwork
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.19.1.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_TrafficNetworkStatusSubscription">
    <part name="c2cMsgAdmin" element="c2c:c2cMessageSubscription"/>
    <part name="message" element="tmdd:trafficNetworkInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlTrafficNetworkInformationSubscription">
    <documentation><objectClass>TransportationNetwork</objectClass><objectClass>Ex
ternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_TrafficNetworkStatusSubscription"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.20 VideoSwitch Class Dialogs

3.1.20.1 dlVideoSwitchInventoryRequest

3.1.20.1.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.20.1.2 ASN.1 REPRESENTATION

```

dlVideoSwitchInventoryRequest ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME          "ExternalCenter<-DlVideoSwitchInventoryRequest->OwnerCenter"
ASN-NAME "DlVideoSwitchInventoryRequest"
ASN-OBJECT-IDENTIFIER { tmddDialogs 76 }
URL "R-R.gif"
DEFINITION          "A request-response dialog that allows an external center to request
an owner center to provide an inventory of the owner center's video switches."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {          "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}

```

```

ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
  { tmddMessages 84 }, -- videoSwitchInventoryMsg (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 23 }, -- videoSwitch
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.20.1.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
  <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_VideoSwitchInventory">
  <part name="message" element="tmdd:videoSwitchInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlVideoSwitchInventoryRequest">
  <documentation><objectClass>VideoSwitch</objectClass><objectClass>ExternalCent
er</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DeviceInformationRequest"/>
  <output message="tns:MSG_VideoSwitchInventory"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.20.2 dlVideoSwitchStatusRequest

3.1.20.2.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.20.2.2 ASN.1 REPRESENTATION

```

dlVideoSwitchStatusRequest ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "ExternalCenter<-DlVideoSwitchStatusRequest->OwnerCenter"
  ASN-NAME "DlVideoSwitchStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 77 }
  URL "R-R.gif"
  DEFINITION      "A request-response dialog that allows an external center to request
an owner center provide a status of the owner center's video switches."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "emergency traffic control information",
    "device status",
    "field equipment status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 20 }, -- deviceInformationRequestMsg (Input Message)
    { tmddMessages 85 }, -- videoSwitchStatusMsg (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
}

```

```

REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 23 }, -- videoSwitch
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.20.2.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceInformationRequest">
    <part name="message" element="tmdd:deviceInformationRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_VideoSwitchStatus">
    <part name="message" element="tmdd:videoSwitchStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlVideoSwitchStatusRequest">
    <documentation><objectClass>VideoSwitch</objectClass><objectClass>ExternalCent
er</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_DeviceInformationRequest"/>
    <output message="tns:MSG_VideoSwitchStatus"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.20.3 dlVideoSwitchControlRequest

3.1.20.3.1 DIALOG REFERENCE

See Clause 2.4.1 Generic Request-Response Dialog

3.1.20.3.2 ASN.1 REPRESENTATION

```

dlVideoSwitchControlRequest ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "ExternalCenter<-DlVideoSwitchControlRequest->OwnerCenter"
    ASN-NAME                  "DlVideoSwitchControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 78 }
    URL "R-R.gif"
    DEFINITION                "A request-response dialog that allows an external center to request
an owner center to perform a control action on an owner center's video switch."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {          "device control request"          }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 83 }, -- videoSwitchControlRequestMsg (Input Message)
        { tmddMessages 18 }, -- deviceControlResponseMsg (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 23 }, -- videoSwitch
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.20.3.3 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_VideoSwitchControlRequest">

```

```

    <part name="message" element="tmdd:videoSwitchControlRequestMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DeviceControlResponse">
    <part name="message" element="tmdd:deviceControlResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlVideoSwitchControlRequest">
    <documentation><objectClass>VideoSwitch</objectClass><objectClass>ExternalCent
er</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_VideoSwitchControlRequest"/>
    <output message="tns:MSG_DeviceControlResponse"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.21 CCTV Class Dialogs

3.1.21.1 dlCCTVInventoryUpdate

3.1.21.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.21.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.21.1.3 ASN.1 REPRESENTATION

```

dlCCTVInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlCCTVInventoryUpdate->ExternalCenter"
    ASN-NAME "DlCCTVInventoryUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 79 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's CCTVs."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 6 }, -- cCTVInventoryMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 2 }, -- cCTV
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.21.1.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_CCTVInventoryUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:cCTVInventoryMsg"/>

```



```
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlCCTVInventoryUpdate">
  <documentation><objectClass>CCTV</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_CCTVInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.21.2 dlCCTVStatusUpdate

3.1.21.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.21.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.21.2.3 ASN.1 REPRESENTATION

```
dlCCTVStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlCCTVStatusUpdate->ExternalCenter"
  ASN-NAME "DlCCTVStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 80 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's CCTVs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device status",
                                "field equipment status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 7 }, -- cCTVStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 2 }, -- cCTV
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.21.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_CCTVStatusUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:cCTVStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
```

```
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlCCTVStatusUpdate">
  <documentation><objectClass>CCTV</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_CCTVStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.22 ConnectionManagement Class Dialogs

3.1.22.1 dlCenterActiveVerificationUpdate

3.1.22.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlCenterActiveVerificationSubscription dialog.

3.1.22.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.22.1.3 ASN.1 REPRESENTATION

```
dlCenterActiveVerificationUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlCenterActiveVerificationUpdate->ExternalCenter"
  ASN-NAME "DlCenterActiveVerificationUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 81 }
  URL "Pub.gif"
  DEFINITION      "A publication dialog that allows an owner center to provide to an
external center periodic active verification updates."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "nil"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 9 }, -- centerActiveVerificationResponseMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 3 }, -- connectionManagement
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.22.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_CenterActiveVerificationUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:centerActiveVerificationResponseMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
```

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlCenterActiveVerificationUpdate">
  <documentation><objectClass>ConnectionManagement</objectClass><objectClass>Ext
ernalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_CenterActiveVerificationUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.23 Detector Class Dialogs

3.1.23.1 dlDetectorInventoryUpdate

3.1.23.1.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.23.1.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.23.1.3 *ASN.1 REPRESENTATION*

```
dlDetectorInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlDetectorInventoryUpdate->ExternalCenter"
  ASN-NAME "DlDetectorInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 82 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's detector stations and
sensors."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 13 }, -- detectorInventoryMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 4 }, -- detector
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.23.1.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DetectorInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:detectorInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
```

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDetectorInventoryUpdate">
  <documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DetectorInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.23.2 dlDetectorStatusUpdate

3.1.23.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.23.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.23.2.3 ASN.1 REPRESENTATION

```
dlDetectorStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlDetectorStatusUpdate->ExternalCenter"
  ASN-NAME "DlDetectorStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 83 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's detector stations and sensors."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device status",
                                "field equipment status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 16 }, -- detectorStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 4 }, -- detector
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.23.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DetectorStatusUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:detectorStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
```

```
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDetectorStatusUpdate">
  <documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DetectorStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.23.3 dlDetectorDataUpdate

3.1.23.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDetectorDataSubscription dialog.

3.1.23.3.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.23.3.3 ASN.1 REPRESENTATION

```
dlDetectorDataUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlDetectorDataUpdate->ExternalCenter"
  ASN-NAME "DlDetectorDataUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 84 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide
collected data updates to an external center on the owner center's detector stations
and sensors."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data",
                                "road network conditions",
                                "traffic information for media"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 11 }, -- detectorDataMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 4 }, -- detector
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.23.3.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DetectorDataUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:detectorDataMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDetectorDataUpdate">
```

```
<documentation><objectClass>Detector</objectClass><objectClass>ExternalCenter<
/objectClass><objectClass>OwnerCenter</objectClass></documentation>
<input message="tns:MSG_DetectorDataUpdate"/>
<output message="tns:MSG_ConfirmationReceipt"/>
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.24 DMS Class Dialogs

3.1.24.1 dlDMSInventoryUpdate

3.1.24.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.24.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.24.1.3 ASN.1 REPRESENTATION

```
dlDMSInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME "OwnerCenter<-DlDMSInventoryUpdate->ExternalCenter"
    ASN-NAME "DlDMSInventoryUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 85 }
    URL "Pub.gif"
    DEFINITION "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's dynamic message signs."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 25 }, -- dMSInventoryMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 6 }, -- dMS
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.24.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSInventoryUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:dMSInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDMSInventoryUpdate">
    <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
```

```
<input message="tns:MSG_DMSInventoryUpdate"/>
<output message="tns:MSG_ConfirmationReceipt"/>
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.24.2 dlDMSMessageInventoryUpdate

3.1.24.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDMSMessageInventorySubscription dialog.

3.1.24.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.24.2.3 ASN.1 REPRESENTATION

```
dlDMSMessageInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlDMSMessageInventoryUpdate->ExternalCenter"
  ASN-NAME               "DlDMSMessageInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 86 }
  URL "Pub.gif"
  DEFINITION             "A publication dialog that allows an owner center to provide message
  library updates to an external center on the owner center's dynamic message signs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 28 }, -- dMSMessageInventoryMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.24.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_DMSMessageInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:dMSMessageInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlDMSMessageInventoryUpdate">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DMSMessageInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
```

```
<fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.24.3 dLDMSStatusUpdate

3.1.24.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.24.3.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.24.3.3 ASN.1 REPRESENTATION

```
dLDMSStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlDMSStatusUpdate->ExternalCenter"
  ASN-NAME "DlDMSStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 87 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
  updates to an external center on the owner center's dynamic message signs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device status",
                                "emergency traffic control information",
                                "field equipment status"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 31 }, -- dMSStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 6 }, -- dMS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.24.3.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_DMSStatusUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:dMSStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlDMSStatusUpdate">
  <documentation><objectClass>DMS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_DMSStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```


3.1.25 ESS Class Dialogs

3.1.25.1 dlESSInventoryUpdate

3.1.25.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.25.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.25.1.3 ASN.1 REPRESENTATION

```
dlESSInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlESSInventoryUpdate->ExternalCenter"
  ASN-NAME "DlESSInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 88 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's environmental sensor
stations."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data",
                                "environmental conditions data "      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 32 }, -- eSSInventoryMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 7 }, -- eSS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.25.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ESSInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:eSSInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlESSInventoryUpdate">
  <documentation><objectClass>ESS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_ESSInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.25.2 dlESSStatusUpdate

3.1.25.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.25.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.25.2.3 ASN.1 REPRESENTATION

```
dlESSStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlESSStatusUpdate->ExternalCenter"
  ASN-NAME "DlESSStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 89 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's environmental sensor stations."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device status",
                                "field equipment status"    }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 35 }, -- eSSStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 7 }, -- eSS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.25.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ESSStatusUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:eSSStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlESSStatusUpdate">
  <documentation><objectClass>ESS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_ESSStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.25.3 dlESSObservationReportUpdate

3.1.25.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.25.3.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.25.3.3 *ASN.1 REPRESENTATION*

```
dlESSObservationReportUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlESSObservationReportUpdate->ExternalCenter"
    ASN-NAME "DlESSObservationReportUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 90 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide
    observation report updates to an external center on the owner center's ESS weather
    observations."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data",
    "environmental conditions data ",
    "road data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 34 }, -- eSSObservationReportMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 7 }, -- eSS
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.25.3.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_ESSObservationReportUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:eSSObservationReportMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlESSObservationReportUpdate">
    <documentation><objectClass>ESS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_ESSObservationReportUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.26 Event Class Dialogs

3.1.26.1 dlFullEventUpdateUpdate

3.1.26.1.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlFullEventUpdateSubscription dialog.

3.1.26.1.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.26.1.3 *ASN.1 REPRESENTATION*

```
dlFullEventUpdateUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "OwnerCenter<-DlFullEventUpdateUpdate->ExternalCenter"
  ASN-NAME "DlFullEventUpdateUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 91 }
  URL "Pub.gif"
  DEFINITION                "A publication dialog that allows an owner center to provide updates
  to an external center on the owner center's events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "incident information",
                                "incident response status",
                                "transportation system status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 39 }, -- fEUMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 8 }, -- event
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.26.1.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_FullEventUpdateUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:fEUMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlFullEventUpdateUpdate">
  <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_FullEventUpdateUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.26.2 *dlEventIndexUpdate*

3.1.26.2.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlEventIndexSubscription dialog.

3.1.26.2.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.26.2.3 *ASN.1 REPRESENTATION*

```
dlEventIndexUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlEventIndexUpdate->ExternalCenter"
  ASN-NAME "DlEventIndexUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 92 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
  updates to an external center on the owner center's event index."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "incident information",
    "incident response status",
    "transportation system status" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 37 }, -- eventIndexMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 8 }, -- event
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.26.2.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_EventIndexUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:eventIndexMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlEventIndexUpdate">
  <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_EventIndexUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.26.3 *dlActionLogUpdate*

3.1.26.3.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlActionLogSubscription dialog.

3.1.26.3.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.26.3.3 *ASN.1 REPRESENTATION*

```
dlActionLogUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "OwnerCenter<-DlActionLogUpdate->ExternalCenter"
    ASN-NAME                  "DlActionLogUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 93 }
    URL "Pub.gif"
    DEFINITION                "A publication dialog that allows an owner center to provide updates
    to an external center on the owner center's action logs."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "event plans",
        "incident information",
        "incident response status"  }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 36 } , -- actionLogMsg  (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt  (Output Message)
        { tmddMessages 10 } -- errorReportMsg  (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 8 }, -- event
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.26.3.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ActionLogUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:actionLogMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlActionLogUpdate">
    <documentation><objectClass>Event</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_ActionLogUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault message="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.27 *Gate Class Dialogs*

3.1.27.1 *dlGateInventoryUpdate*

3.1.27.1.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.27.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.27.1.3 ASN.1 REPRESENTATION

```
dlGateInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "OwnerCenter<-DlGateInventoryUpdate->ExternalCenter"
    ASN-NAME                  "DlGateInventoryUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 94 }
    URL "Pub.gif"
    DEFINITION                "A publication dialog that allows an owner center to provide
    inventory updates to an external center on the owner center's gates."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data",
        "emergency traffic coordination" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 42 }, -- gateInventoryMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 10 }, -- gate
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.27.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_GateInventoryUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:gateInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlGateInventoryUpdate">
    <documentation><objectClass>Gate</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_GateInventoryUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.27.2 dlGateStatusUpdate

3.1.27.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.27.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.27.2.3 *ASN.1 REPRESENTATION*

```
dlGateStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlGateStatusUpdate->ExternalCenter"
    ASN-NAME "DlGateStatusUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 95 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's gates."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "emergency traffic control information",
        "device status",
        "field equipment status"  }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 43 }, -- gateStatusMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 10 }, -- gate
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.27.2.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_GateStatusUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:gateStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlGateStatusUpdate">
    <documentation><objectClass>Gate</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_GateStatusUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.27.3 *dlGateControlScheduleUpdate*

3.1.27.3.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.27.3.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.27.3.3 *ASN.1 REPRESENTATION*

```
dlGateControlScheduleUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlGateControlScheduleUpdate->ExternalCenter"
  ASN-NAME "DlGateControlScheduleUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 96 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide control
  schedule updates to an external center on the owner center's gates."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 41 }, -- gateControlScheduleMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 10 }, -- gate
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.27.3.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_GateControlScheduleUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:gateControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlGateControlScheduleUpdate">
  <documentation><objectClass>Gate</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_GateControlScheduleUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.28 HAR Class Dialogs

3.1.28.1 dlHARInventoryUpdate

3.1.28.1.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.28.1.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.28.1.3 *ASN.1 REPRESENTATION*

```
dlHARInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlHARInventoryUpdate->ExternalCenter"
    ASN-NAME "DlHARInventoryUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 97 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's highway advisory
radios."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 46 }, -- hARInventoryMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 12 }, -- hAR
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.28.1.4 *XML REPRESENTATION*

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARInventoryUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:hARInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlHARInventoryUpdate">
    <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_HARInventoryUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.28.2 *dlHARMessageInventoryUpdate*

3.1.28.2.1 *PRE CONDITIONS*

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.28.2.2 *DIALOG REFERENCE*

See Clause 2.4.3 Generic Publication Update Dialog

3.1.28.2.3 *ASN.1 REPRESENTATION*

```
dlHARMessageInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "OwnerCenter<-DlHARMessageInventoryUpdate->ExternalCenter"
  ASN-NAME "DlHARMessageInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 98 }
  URL "Pub.gif"
  DEFINITION                "A publication dialog that allows an owner center to provide message
  library updates to an external center on the owner center's highway advisory radios."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "device data"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 47 }, -- hARMessageInventoryMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 12 }, -- hAR
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.28.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_HARMessageInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:hARMessageInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlHARMessageInventoryUpdate">
  <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_HARMessageInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.28.3 dlHARStatusUpdate

3.1.28.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.28.3.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.28.3.3 ASN.1 REPRESENTATION

```
dlHARStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "OwnerCenter<-DlHARStatusUpdate->ExternalCenter"
```

```
ASN-NAME "DlHARStatusUpdate"
ASN-OBJECT-IDENTIFIER { tmddDialogs 99 }
URL "Pub.gif"
DEFINITION "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's highway advisory radios."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "emergency traffic control information",
    "device status",
    "field equipment status" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 49 }, -- hARStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 12 }, -- hAR
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.28.3.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARStatusUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:hARStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlHARStatusUpdate">
    <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_HARStatusUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.28.4 dlHARControlScheduleUpdate

3.1.28.4.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.28.4.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.28.4.3 ASN.1 REPRESENTATION

```
dlHARControlScheduleUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME "OwnerCenter<-DlHARControlScheduleUpdate->ExternalCenter"
    ASN-NAME "DlHARControlScheduleUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 100 }
```

```

URL "Pub.gif"
DEFINITION "A publication dialog that allows an owner center to provide control
schedule updates to an external center on the owner center's highway advisory radios."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 45 }, -- hARControlScheduleMsg (Input Message)
  { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 12 }, -- hAR
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.28.4.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_HARControlScheduleUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:hARControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlHARControlScheduleUpdate">
  <documentation><objectClass>HAR</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_HARControlScheduleUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.29 IntersectionSignal Class Dialogs

3.1.29.1 dlIntersectionSignalInventoryUpdate

3.1.29.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.29.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.29.1.3 ASN.1 REPRESENTATION

```

dlIntersectionSignalInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "OwnerCenter<-DlIntersectionSignalInventoryUpdate-
>ExternalCenter"
  ASN-NAME "DlIntersectionSignalInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 101 }
  URL "Pub.gif"

```

```

DEFINITION          "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's traffic signals."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {          "device data"          }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 53 }, -- intersectionSignalInventoryMsg (Input Message)
  { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 13 }, -- intersectionSignal
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.29.1.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:intersectionSignalInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalInventoryUpdate">
  <documentation><objectClass>IntersectionSignal</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_IntersectionSignalInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.29.2 dlIntersectionSignalTimingPatternInventoryUpdate

3.1.29.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlIntersectionSignalTimingPatternInventorySubscription dialog.

3.1.29.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.29.2.3 ASN.1 REPRESENTATION

```

dlIntersectionSignalTimingPatternInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME          "OwnerCenter<-DlIntersectionSignalTimingPatternInventoryUpdate-
>ExternalCenter"
ASN-NAME "DlIntersectionSignalTimingPatternInventoryUpdate"
ASN-OBJECT-IDENTIFIER { tmddDialogs 102 }
URL "Pub.gif"

```

DEFINITION "A publication dialog that allows an owner center to provide timing pattern updates to an external center on the owner center's traffic signals."

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

ARCHITECTURE-REFERENCE { "device data" }

ARCHITECTURE-NAME {"U.S. National ITS Architecture"}

ARCHITECTURE-VERSION {"7.0"}

DATA-CONCEPT-TYPE interface-dialogue

STANDARD "TMDD"

REFERENCED-MESSAGES {

 { [tmddMessages 56](#) }, -- intersectionSignalTimingPatternInventoryMsg (Input Message)

 { [c2cMessages c2cMessageReceipt\(1\)](#) }, -- c2cMessageReceipt (Output Message)

 { [tmddMessages 10](#) } -- errorReportMsg (Fault Message)

}

REFERENCED-OBJECT-CLASSES {

 { tmddObjectClasses 13 }, -- intersectionSignal

 { tmddObjectClasses 9 }, -- externalCenter

 { tmddObjectClasses 18 } -- ownerCenter

}

3.1.29.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalTimingPatternInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message"
element="tmdd:intersectionSignalTimingPatternInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalTimingPatternInventoryUpdate">
  <documentation><objectClass>IntersectionSignal</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_IntersectionSignalTimingPatternInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.29.3 dlIntersectionSignalStatusUpdate

3.1.29.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.29.3.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.29.3.3 ASN.1 REPRESENTATION

```
dlIntersectionSignalStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME "OwnerCenter<-DlIntersectionSignalStatusUpdate->ExternalCenter"
ASN-NAME "DlIntersectionSignalStatusUpdate"
ASN-OBJECT-IDENTIFIER { tmddDialogs 103 }
URL "Pub.gif"
```

```

DEFINITION          "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's traffic signals."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {          "emergency traffic control information",
    "device status",
    "field equipment status"    }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 55 }, -- intersectionSignalStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 13 }, -- intersectionSignal
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.29.3.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalStatusUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:intersectionSignalStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalStatusUpdate">
    <documentation><objectClass>IntersectionSignal</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_IntersectionSignalStatusUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.29.4 dlIntersectionSignalControlScheduleUpdate

3.1.29.4.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.29.4.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.29.4.3 ASN.1 REPRESENTATION

```

dlIntersectionSignalControlScheduleUpdate ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME          "OwnerCenter<-DlIntersectionSignalControlScheduleUpdate-
>ExternalCenter"
ASN-NAME "DlIntersectionSignalControlScheduleUpdate"
ASN-OBJECT-IDENTIFIER { tmddDialogs 104 }

```



```
URL "Pub.gif"
DEFINITION "A publication dialog that allows an owner center to provide control
schedule updates to an external center on the owner center's traffic signals."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 52 }, -- intersectionSignalControlScheduleMsg (Input Message)
  { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 13 }, -- intersectionSignal
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.29.4.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_IntersectionSignalControlScheduleUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:intersectionSignalControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlIntersectionSignalControlScheduleUpdate">
  <documentation><objectClass>IntersectionSignal</objectClass><objectClass>Exter
nalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_IntersectionSignalControlScheduleUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.30 LCS Class Dialogs

3.1.30.1 dlLCSInventoryUpdate

3.1.30.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.30.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.30.1.3 ASN.1 REPRESENTATION

```
dlLCSInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "OwnerCenter<-DlLCSInventoryUpdate->ExternalCenter"
  ASN-NAME "DlLCSInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 105 }
```

```

URL "Pub.gif"
DEFINITION      "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's lane control signals."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {      "device data"      }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 60 }, -- lCSInventoryMsg (Input Message)
  { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 14 }, -- lCS
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.30.1.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LCSInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:lCSInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLCSInventoryUpdate">
  <documentation><objectClass>LCS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_LCSInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.30.2 dlLCSStatusUpdate

3.1.30.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.30.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.30.2.3 ASN.1 REPRESENTATION

```

dlLCSStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlLCSStatusUpdate->ExternalCenter"
  ASN-NAME "DlLCSStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 106 }
  URL "Pub.gif"
  DEFINITION      "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's lane control signals."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

```

```

ARCHITECTURE-REFERENCE {      "emergency traffic control information",
    "device status",
    "field equipment status" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 61 }, -- lCSStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 14 }, -- lCS
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.30.2.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LCSStatusUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:lCSStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLCSStatusUpdate">
    <documentation><objectClass>LCS</objectClass><objectClass>ExternalCenter</obje
ctClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_LCSStatusUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.30.3 dlLCSControlScheduleUpdate

3.1.30.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.30.3.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.30.3.3 ASN.1 REPRESENTATION

```

dlLCSControlScheduleUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlLCSControlScheduleUpdate->ExternalCenter"
    ASN-NAME "DlLCSControlScheduleUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 107 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide control
    schedule updates to an external center on the owner center's lane control signals."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}

```

```

ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 59 }, -- lCSControlScheduleMsg (Input Message)
  { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 14 }, -- lCS
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.30.3.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LCSControlScheduleUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:lCSControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLCSControlScheduleUpdate">
  <documentation><objectClass>LCS</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_LCSControlScheduleUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.31 Organization Class Dialogs

3.1.31.1 dlOrganizationInformationUpdate

3.1.31.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlOrganizationInformationSubscription dialog.

3.1.31.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.31.1.3 ASN.1 REPRESENTATION

```

dlOrganizationInformationUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "OwnerCenter<-DlOrganizationInformationUpdate->ExternalCenter"
  ASN-NAME "DlOrganizationInformationUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 108 }
  URL "Pub.gif"
  DEFINITION "A publication dialog that allows an owner center to provide updates
to an external center on the owner center's organization information."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "traffic information coordination" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue

```

```
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 66 }, -- organizationInformationMsg (Input Message)
  { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 17 }, -- organization
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.31.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_OrganizationInformationUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:organizationInformationMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlOrganizationInformationUpdate">
  <documentation><objectClass>Organization</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_OrganizationInformationUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.32 RampMeter Class Dialogs

3.1.32.1 dlRampMeterInventoryUpdate

3.1.32.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.32.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.32.1.3 ASN.1 REPRESENTATION

```
dlRampMeterInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME "OwnerCenter<-DlRampMeterInventoryUpdate->ExternalCenter"
  ASN-NAME "DlRampMeterInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 109 }
  URL "Pub.gif"
  DEFINITION "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's ramp meters."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "device data" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
```

```
STANDARD "TMDD"
REFERENCED-MESSAGES {
    { tmddMessages 70 }, -- rampMeterInventoryMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 19 }, -- rampMeter
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.32.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterInventoryUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:rampMeterInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRampMeterInventoryUpdate">
    <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_RampMeterInventoryUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.32.2 dlRampMeterStatusUpdate

3.1.32.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.32.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.32.2.3 ASN.1 REPRESENTATION

```
dlRampMeterStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME "OwnerCenter<-DlRampMeterStatusUpdate->ExternalCenter"
    ASN-NAME "DlRampMeterStatusUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 110 }
    URL "Pub.gif"
    DEFINITION "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's ramp meters."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "emergency traffic control information",
        "device status",
        "field equipment status" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
```

```

{ tmddMessages 73 }, -- rampMeterStatusMsg (Input Message)
{ c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
{ tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 19 }, -- rampMeter
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
}

```

3.1.32.2.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RampMeterStatusUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:rampMeterStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRampMeterStatusUpdate">
  <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_RampMeterStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.32.3 dlRampMeterControlScheduleUpdate

3.1.32.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.32.3.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.32.3.3 ASN.1 REPRESENTATION

```

dlRampMeterControlScheduleUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlRampMeterControlScheduleUpdate->ExternalCenter"
  ASN-NAME              "DlRampMeterControlScheduleUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 111 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide control
  schedule updates to an external center on the owner center's ramp meters."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "device data" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 69 }, -- rampMeterControlScheduleMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
}

```

```
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 19 }, -- rampMeter
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.32.3.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_RampMeterControlScheduleUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:rampMeterControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlRampMeterControlScheduleUpdate">
    <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_RampMeterControlScheduleUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.32.4 dlRampMeterPlanInventoryUpdate

3.1.32.4.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlRampMeterPlanInventorySubscription dialog.

3.1.32.4.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.32.4.3 ASN.1 REPRESENTATION

```
dlRampMeterPlanInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME "OwnerCenter<-DlRampMeterPlanInventoryUpdate->ExternalCenter"
    ASN-NAME "DlRampMeterPlanInventoryUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 112 }
    URL "Pub.gif"
    DEFINITION "A publication dialog that allows an owner center to provide timing
    plan updates to an external center on the owner center's ramp meters."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 71 }, -- rampMeterPlanInventoryMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 19 }, -- rampMeter
```



```
{ tmddObjectClasses 9 }, -- externalCenter
{ tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.32.4.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_RampMeterPlanInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:rampMeterPlanInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlRampMeterPlanInventoryUpdate">
  <documentation><objectClass>RampMeter</objectClass><objectClass>ExternalCenter
</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_RampMeterPlanInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.33 Section Class Dialogs

3.1.33.1 dlSectionStatusUpdate

3.1.33.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.33.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.33.1.3 ASN.1 REPRESENTATION

```
dlSectionStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlSectionStatusUpdate->ExternalCenter"
  ASN-NAME "DlSectionStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 113 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's intersection sections."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "emergency traffic control information",
    "device status",
    "field equipment status"   }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 81 }, -- sectionStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
}
```

```
REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 21 }, -- section
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
}
```

3.1.33.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_SectionStatusUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:sectionStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlSectionStatusUpdate">
    <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_SectionStatusUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.33.2 dlSectionControlScheduleUpdate

3.1.33.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.33.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.33.2.3 ASN.1 REPRESENTATION

```
dlSectionControlScheduleUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME "OwnerCenter<-DlSectionControlScheduleUpdate->ExternalCenter"
    ASN-NAME "DlSectionControlScheduleUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 114 }
    URL "Pub.gif"
    DEFINITION "A publication dialog that allows an owner center to provide control
    schedule updates to an external center on the owner center's traffic signal sections."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 78 }, -- sectionControlScheduleMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 21 }, -- section
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
```

} }

3.1.33.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_SectionControlScheduleUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:sectionControlScheduleMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlSectionControlScheduleUpdate">
  <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_SectionControlScheduleUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.33.3 dlSectionSignalTimingPatternInventoryUpdate

3.1.33.3.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlSectionSignalTimingPatternInventorySubscription dialog.

3.1.33.3.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.33.3.3 ASN.1 REPRESENTATION

```
dlSectionSignalTimingPatternInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
DESCRIPTIVE-NAME "OwnerCenter<-DlSectionSignalTimingPatternInventoryUpdate-
>ExternalCenter"
ASN-NAME "DlSectionSignalTimingPatternInventoryUpdate"
ASN-OBJECT-IDENTIFIER { tmddDialogs 125 }
URL "Pub.gif"
DEFINITION "A publication dialog that allows an owner center to provide timing
pattern updates to an external center on the owner center's signal sections."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE { "nil" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE interface-dialogue
STANDARD "TMDD"
REFERENCED-MESSAGES {
  { tmddMessages 86 }, -- SectionSignalTimingPatternInventoryMsg (Input Message)
  { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
  { tmddMessages 10 } -- errorReportMsg (Fault Message)
}
REFERENCED-OBJECT-CLASSES {
  { tmddObjectClasses 21 }, -- section
  { tmddObjectClasses 9 }, -- externalCenter
  { tmddObjectClasses 18 } -- ownerCenter
} }
```

3.1.33.3.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_SectionSignalTimingPatternInventoryUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:SectionSignalTimingPatternInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlSectionSignalTimingPatternInventoryUpdate">
    <documentation><objectClass>Section</objectClass><objectClass>ExternalCenter</
objectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_SectionSignalTimingPatternInventoryUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.34 Link Class Dialogs

3.1.34.1 dlLinkInventoryUpdate

3.1.34.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlTrafficNetworkInformationSubscription dialog.

3.1.34.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.34.1.3 ASN.1 REPRESENTATION

```
dlLinkInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlLinkInventoryUpdate->ExternalCenter"
    ASN-NAME "DlLinkInventoryUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 115 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's traffic network links."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "traffic information coordination",
        "road network conditions" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 62 }, -- linkInventoryMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 15 }, -- link
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}
```

3.1.34.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LinkInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:linkInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLinkInventoryUpdate">
  <documentation><objectClass>Link</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_LinkInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.34.2 dlLinkStatusUpdate

3.1.34.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlTrafficNetworkInformationSubscription dialog.

3.1.34.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.34.2.3 ASN.1 REPRESENTATION

```
dlLinkStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlLinkStatusUpdate->ExternalCenter"
  ASN-NAME "DlLinkStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 116 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's traffic network links."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE { "traffic information coordination",
    "road network conditions",
    "traffic information for media" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 63 }, -- linkStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 15 }, -- link
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.34.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_LinkStatusUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:linkStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlLinkStatusUpdate">
  <documentation><objectClass>Link</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_LinkStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.35 Node Class Dialogs

3.1.35.1 dlNodeInventoryUpdate

3.1.35.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlTrafficNetworkInformationSubscription dialog.

3.1.35.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.35.1.3 ASN.1 REPRESENTATION

```
dlNodeInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlNodeInventoryUpdate->ExternalCenter"
  ASN-NAME "DlNodeInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 117 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's traffic network nodes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "traffic information coordination",
                                "road network conditions"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 64 }, -- nodeInventoryMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 16 }, -- node
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.35.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_NodeInventoryUpdate">
```

```

        <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
        <part name="message" element="tmdd:nodeInventoryMsg"/>
    </message>
    <message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
        <part name="message" element="c2c:c2cMessageReceipt"/>
    </message>
    <message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
        <part name="message" element="tmdd:errorReportMsg"/>
    </message>
    <operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlNodeInventoryUpdate">
        <documentation><objectClass>Node</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
        <input message="tns:MSG_NodeInventoryUpdate"/>
        <output message="tns:MSG_ConfirmationReceipt"/>
        <fault name="errorReport" message="tns:MSG_ErrorReport"/>
    </operation>

```

3.1.35.2 dlNodeStatusUpdate

3.1.35.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlTrafficNetworkInformationSubscription dialog.

3.1.35.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.35.2.3 ASN.1 REPRESENTATION

```

dlNodeStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlNodeStatusUpdate->ExternalCenter"
    ASN-NAME "DlNodeStatusUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 118 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's traffic network nodes."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE { "traffic information coordination",
        "road network conditions",
        "traffic information for media" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 65 }, -- nodeStatusMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 16 }, -- node
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.35.2.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_NodeStatusUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:nodeStatusMsg"/>

```

```
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlNodeStatusUpdate">
  <documentation><objectClass>Node</objectClass><objectClass>ExternalCenter</obj
ectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_NodeStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.36 Route Class Dialogs

3.1.36.1 dlRouteInventoryUpdate

3.1.36.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlTrafficNetworkInformationSubscription dialog.

3.1.36.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.36.1.3 ASN.1 REPRESENTATION

```
dlRouteInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME          "OwnerCenter<-DlRouteInventoryUpdate->ExternalCenter"
  ASN-NAME "DlRouteInventoryUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 119 }
  URL "Pub.gif"
  DEFINITION                "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's traffic network routes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {          "road network conditions"      }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 74 }, -- routeInventoryMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 20 }, -- route
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.36.1.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RouteInventoryUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:routeInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
```



```

        <part name="message" element="c2c:c2cMessageReceipt"/>
    </message>
    <message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
        <part name="message" element="tmdd:errorReportMsg"/>
    </message>
    <operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRouteInventoryUpdate">
        <documentation><objectClass>Route</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
        <input message="tns:MSG_RouteInventoryUpdate"/>
        <output message="tns:MSG_ConfirmationReceipt"/>
        <fault name="errorReport" message="tns:MSG_ErrorReport"/>
    </operation>

```

3.1.36.2 dlRouteStatusUpdate

3.1.36.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlTrafficNetworkInformationSubscription dialog.

3.1.36.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.36.2.3 ASN.1 REPRESENTATION

```

dlRouteStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME          "OwnerCenter<-DlRouteStatusUpdate->ExternalCenter"
    ASN-NAME                  "DlRouteStatusUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 120 }
    URL "Pub.gif"
    DEFINITION                "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's traffic network routes."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "road network conditions",
        "traffic information for media"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 75 }, -- routeStatusMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 20 }, -- route
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.36.2.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_RouteStatusUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:routeStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">

```

```

        <part name="message" element="tmdd:errorReportMsg"/>
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlRouteStatusUpdate">
    <documentation><objectClass>Route</objectClass><objectClass>ExternalCenter</ob
jectClass><objectClass>OwnerCenter</objectClass></documentation>
    <input message="tns:MSG_RouteStatusUpdate"/>
    <output message="tns:MSG_ConfirmationReceipt"/>
    <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>

```

3.1.37 VideoSwitch Class Dialogs

3.1.37.1 dlVideoSwitchInventoryUpdate

3.1.37.1.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.37.1.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.37.1.3 ASN.1 REPRESENTATION

```

dlVideoSwitchInventoryUpdate ITS-INTERFACE-DIALOGUE ::= {
    DESCRIPTIVE-NAME      "OwnerCenter<-DlVideoSwitchInventoryUpdate->ExternalCenter"
    ASN-NAME "DlVideoSwitchInventoryUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDialogs 121 }
    URL "Pub.gif"
    DEFINITION            "A publication dialog that allows an owner center to provide
inventory updates to an external center on the owner center's video switches."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {      "device data"      }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE interface-dialogue
    STANDARD "TMDD"
    REFERENCED-MESSAGES {
        { tmddMessages 84 }, -- videoSwitchInventoryMsg (Input Message)
        { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
        { tmddMessages 10 } -- errorReportMsg (Fault Message)
    }
    REFERENCED-OBJECT-CLASSES {
        { tmddObjectClasses 23 }, -- videoSwitch
        { tmddObjectClasses 9 }, -- externalCenter
        { tmddObjectClasses 18 } -- ownerCenter
    }
}

```

3.1.37.1.4 XML REPRESENTATION

```

<message xmlns="http://schemas.xmlsoap.org/wsdl/"
name="MSG_VideoSwitchInventoryUpdate">
    <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
    <part name="message" element="tmdd:videoSwitchInventoryMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
    <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
    <part name="message" element="tmdd:errorReportMsg"/>

```

```
</message>
<operation xmlns="http://schemas.xmlsoap.org/wsdl/"
name="DlVideoSwitchInventoryUpdate">
  <documentation><objectClass>VideoSwitch</objectClass><objectClass>ExternalCent
er</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_VideoSwitchInventoryUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.1.37.2 dlVideoSwitchStatusUpdate

3.1.37.2.1 PRE CONDITIONS

An owner center shall provide updates to an external center upon acceptance of a dlDeviceInformationSubscription dialog.

3.1.37.2.2 DIALOG REFERENCE

See Clause 2.4.3 Generic Publication Update Dialog

3.1.37.2.3 ASN.1 REPRESENTATION

```
dlVideoSwitchStatusUpdate ITS-INTERFACE-DIALOGUE ::= {
  DESCRIPTIVE-NAME      "OwnerCenter<-DlVideoSwitchStatusUpdate->ExternalCenter"
  ASN-NAME "DlVideoSwitchStatusUpdate"
  ASN-OBJECT-IDENTIFIER { tmddDialogs 122 }
  URL "Pub.gif"
  DEFINITION            "A publication dialog that allows an owner center to provide status
updates to an external center on the owner center's video switches."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {      "emergency traffic control information",
    "device status",
    "field equipment status"    }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE interface-dialogue
  STANDARD "TMDD"
  REFERENCED-MESSAGES {
    { tmddMessages 85 }, -- videoSwitchStatusMsg (Input Message)
    { c2cMessages c2cMessageReceipt\(1\) }, -- c2cMessageReceipt (Output Message)
    { tmddMessages 10 } -- errorReportMsg (Fault Message)
  }
  REFERENCED-OBJECT-CLASSES {
    { tmddObjectClasses 23 }, -- videoSwitch
    { tmddObjectClasses 9 }, -- externalCenter
    { tmddObjectClasses 18 } -- ownerCenter
  }
}
```

3.1.37.2.4 XML REPRESENTATION

```
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_VideoSwitchStatusUpdate">
  <part name="c2cMsgAdmin" element="c2c:c2cMessagePublication"/>
  <part name="message" element="tmdd:videoSwitchStatusMsg"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ConfirmationReceipt">
  <part name="message" element="c2c:c2cMessageReceipt"/>
</message>
<message xmlns="http://schemas.xmlsoap.org/wsdl/" name="MSG_ErrorReport">
  <part name="message" element="tmdd:errorReportMsg"/>
</message>
```

```
<operation xmlns="http://schemas.xmlsoap.org/wsdl/" name="DlVideoSwitchStatusUpdate">
  <documentation><objectClass>VideoSwitch</objectClass><objectClass>ExternalCenter</objectClass><objectClass>OwnerCenter</objectClass></documentation>
  <input message="tns:MSG_VideoSwitchStatusUpdate"/>
  <output message="tns:MSG_ConfirmationReceipt"/>
  <fault name="errorReport" message="tns:MSG_ErrorReport"/>
</operation>
```

3.2 Messages

3.2.1 ArchivedData Class Messages

3.2.1.1 archivedDataProcessingDocumentationMetadataMsg

3.2.1.1.1 ASN.1 REPRESENTATION

```
archivedDataProcessingDocumentationMetadataMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "ArchivedDataProcessingDocumentationMetadataMsg:message"
  ASN-NAME "ArchivedDataProcessingDocumentationMetadataMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 1 }
  DEFINITION "The information content describing an owner center's archived data
  processing documentation metadata."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "archive status",
    "traffic archive data" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 1 } -- ArchivedDataProcessingDocumentationMetadata }
  DATA-TYPE " ArchivedDataProcessingDocumentationMetadataMsg ::= SEQUENCE
  (SIZE(1..10240)) OF ArchivedDataProcessingDocumentationMetadata " }
```

3.2.1.1.2 XML REPRESENTATION

```
<xs:element name="archivedDataProcessingDocumentationMetadataMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="archived-data-processing-documentation-
  metadata-item" type="ArchivedDataProcessingDocumentationMetadata"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.1.2 archivedDataProcessingDocumentationMetadataRequestMsg

3.2.1.2.1 ASN.1 REPRESENTATION

```
archivedDataProcessingDocumentationMetadataRequestMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "ArchivedDataProcessingDocumentationMetadataRequestMsg:message"
  ASN-NAME "ArchivedDataProcessingDocumentationMetadataRequestMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 2 }
  DEFINITION "The information content necessary to request an owner center's
  archived data processing documentation metadata."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "archive requests" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
```

```
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 2 } -- ArchivedDataProcessingDocumentationMetadataRequest }
DATA-TYPE "ArchivedDataProcessingDocumentationMetadataRequestMsg ::=
ArchivedDataProcessingDocumentationMetadataRequest " }
```

3.2.1.2.2 XML REPRESENTATION

```
<xs:element name="archivedDataProcessingDocumentationMetadataRequestMsg"
type="ArchivedDataProcessingDocumentationMetadataRequest"/>
```

3.2.1.3 archivedDataTrafficMonitoringMetadataMsg

3.2.1.3.1 ASN.1 REPRESENTATION

```
archivedDataTrafficMonitoringMetadataMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "ArchivedDataTrafficMonitoringMetadataMsg:message"
ASN-NAME "ArchivedDataTrafficMonitoringMetadataMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 3 }
DEFINITION "The information content describing an owner center's archived data
traffic monitoring metadata."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "archive status",
    "traffic archive data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 3 } -- ArchivedDataTrafficMonitoringMetadata }
DATA-TYPE " ArchivedDataTrafficMonitoringMetadataMsg ::= SEQUENCE (SIZE(1..10240))
OF ArchivedDataTrafficMonitoringMetadata " }
```

3.2.1.3.2 XML REPRESENTATION

```
<xs:element name="archivedDataTrafficMonitoringMetadataMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="archived-data-traffic-monitoring-metadata-
item" type="ArchivedDataTrafficMonitoringMetadata"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

3.2.1.4 archivedDataTrafficMonitoringMetadataRequestMsg

3.2.1.4.1 ASN.1 REPRESENTATION

```
archivedDataTrafficMonitoringMetadataRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "ArchivedDataTrafficMonitoringMetadataRequestMsg:message"
ASN-NAME "ArchivedDataTrafficMonitoringMetadataRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 4 }
```

```

DEFINITION          "The information content necessary to request an owner center's
archived data traffic monitoring metadata."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "archive requests"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 4 } -- ArchivedDataTrafficMonitoringMetadataRequest }
DATA-TYPE "ArchivedDataTrafficMonitoringMetadataRequestMsg" ::=
ArchivedDataTrafficMonitoringMetadataRequest " " }

```

3.2.1.4.2 XML REPRESENTATION

```

<xs:element name="archivedDataTrafficMonitoringMetadataRequestMsg"
type="ArchivedDataTrafficMonitoringMetadataRequest"/>

```

3.2.2 CCTV Class Messages

3.2.2.1 cCTVControlRequestMsg

3.2.2.1.1 ASN.1 REPRESENTATION

```

cCTVControlRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "CCTVControlRequestMsg:message"
ASN-NAME "CCTVControlRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 5 }
DEFINITION          "The information content necessary to request a control action of an
owner center's CCTV camera."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device control request",
    "emergency traffic coordination"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 6 } -- CCTVControlRequest }
DATA-TYPE "CCTVControlRequestMsg" ::= CCTVControlRequest " " }

```

3.2.2.1.2 XML REPRESENTATION

```

<xs:element name="cCTVControlRequestMsg" type="CCTVControlRequest"/>

```

3.2.2.2 cCTVInventoryMsg

3.2.2.2.1 ASN.1 REPRESENTATION

```

cCTVInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "CCTVInventoryMsg:message"
ASN-NAME "CCTVInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 6 }

```

```

DEFINITION          "The information content describing an owner center's CCTV
inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic coordination"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 7 } -- CCTVInventory    }
DATA-TYPE "          CCTVInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF CCTVInventory    "    }

```

3.2.2.2 XML REPRESENTATION

```

<xs:element name="cCCTVInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="cctv-inventory-item" type="CCTVInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.2.3 cCCTVStatusMsg

3.2.2.3.1 ASN.1 REPRESENTATION

```

cCCTVStatusMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "CCTVStatusMsg:message"
ASN-NAME "CCTVStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 7 }
DEFINITION          "The information content describing an owner center's CCTV status for
a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device status",
    "emergency traffic control information",
    "emergency traffic coordination"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 8 } -- CCTVStatus    }
DATA-TYPE "          CCTVStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF CCTVStatus    "    }

```

3.2.2.3.2 XML REPRESENTATION

```

<xs:element name="cCCTVStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="cctv-status-item" type="CCTVStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.3 ConnectionManagement Class Messages

3.2.3.1 centerActiveVerificationRequestMsg

3.2.3.1.1 ASN.1 REPRESENTATION

```
centerActiveVerificationRequestMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "CenterActiveVerificationRequestMsg:message"
  ASN-NAME "CenterActiveVerificationRequestMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 8 }
  DEFINITION "The information content necessary to request verification of whether
  an owner center is active."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "nil" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 10 } -- CenterActiveVerificationRequest }
  DATA-TYPE "CenterActiveVerificationRequestMsg ::= CenterActiveVerificationRequest"
}
```

3.2.3.1.2 XML REPRESENTATION

```
<xs:element name="centerActiveVerificationRequestMsg"
type="CenterActiveVerificationRequest"/>
```

3.2.3.2 centerActiveVerificationResponseMsg

3.2.3.2.1 ASN.1 REPRESENTATION

```
centerActiveVerificationResponseMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "CenterActiveVerificationResponseMsg:message"
  ASN-NAME "CenterActiveVerificationResponseMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 9 }
  DEFINITION "The information content describing whether an owner center is
  active."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "nil" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 11 } -- CenterActiveVerificationResponse }
  DATA-TYPE "CenterActiveVerificationResponseMsg ::= CenterActiveVerificationResponse"
}
```

3.2.3.2.2 XML REPRESENTATION

```
<xs:element name="centerActiveVerificationResponseMsg"
type="CenterActiveVerificationResponse"/>
```


3.2.3.3 errorReportMsg

3.2.3.3.1 ASN.1 REPRESENTATION

```
errorReportMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "ErrorReportMsg:message"
  ASN-NAME "ErrorReportMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 10 }
  DEFINITION          "The information content describing errors in handling of requests
  made from an external center to an owner center."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "nil"    }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 12 } -- ErrorReport  }
  DATA-TYPE "ErrorReportMsg ::= ErrorReport  "  }
```

3.2.3.3.2 XML REPRESENTATION

```
<xs:element name="errorReportMsg" type="ErrorReport"/>
```

3.2.4 Detector Class Messages

3.2.4.1 detectorDataMsg

3.2.4.1.1 ASN.1 REPRESENTATION

```
detectorDataMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "DetectorDataMsg:message"
  ASN-NAME "DetectorDataMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 11 }
  DEFINITION          "The information content describing an owner center's detector data
  for a given set of stations and/or sensors."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic coordination",
    "road network conditions"  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 13 } -- DetectorData  }
  DATA-TYPE "      DetectorDataMsg ::= SEQUENCE (SIZE(1..10240)) OF DetectorData  "  }
```

3.2.4.1.2 XML REPRESENTATION

```
<xs:element name="detectorDataMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="detector-data-item" type="DetectorData"/>
```

```

        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.4.2 detectorDataRequestMsg

3.2.4.2.1 ASN.1 REPRESENTATION

```

detectorDataRequestMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "DetectorDataRequestMsg:message"
    ASN-NAME "DetectorDataRequestMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 12 }
    DEFINITION "The information content necessary to request an owner center's
    detector data for a given set of stations and/or sensors."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "emergency traffic coordination"
    }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 15 } -- DetectorDataRequest
    }
    DATA-TYPE "DetectorDataRequestMsg ::= DetectorDataRequest " }

```

3.2.4.2.2 XML REPRESENTATION

```
<xs:element name="detectorDataRequestMsg" type="DetectorDataRequest"/>
```

3.2.4.3 detectorInventoryMsg

3.2.4.3.1 ASN.1 REPRESENTATION

```

detectorInventoryMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "DetectorInventoryMsg:message"
    ASN-NAME "DetectorInventoryMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 13 }
    DEFINITION "The information content describing an owner center's detector and
    station inventory."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device data",
        "emergency traffic coordination"
    }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 16 } -- DetectorInventory
    }
    DATA-TYPE " DetectorInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF DetectorInventory
    " }

```

3.2.4.3.2 XML REPRESENTATION

```
<xs:element name="detectorInventoryMsg">
```

```

        <xs:complexType>
            <xs:sequence maxOccurs="10240">
                <xs:element name="detector-inventory-item"
type="DetectorInventory"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>

```

3.2.4.4 detectorMaintenanceHistoryMsg

3.2.4.4.1 ASN.1 REPRESENTATION

```

detectorMaintenanceHistoryMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "DetectorMaintenanceHistoryMsg:message"
    ASN-NAME "DetectorMaintenanceHistoryMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 14 }
    DEFINITION "The information content describing an owner center's detector
maintenance history for a given set of devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device data",
        "emergency traffic coordination",
        "archive status" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 18 } -- DetectorMaintenanceHistory }
    DATA-TYPE "DetectorMaintenanceHistoryMsg ::= SEQUENCE (SIZE(1..10240)) OF
DetectorMaintenanceHistory " }

```

3.2.4.4.2 XML REPRESENTATION

```

<xs:element name="detectorMaintenanceHistoryMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="detector-maintenance-history-item"
type="DetectorMaintenanceHistory"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.4.5 detectorMaintenanceHistoryRequestMsg

3.2.4.5.1 ASN.1 REPRESENTATION

```

detectorMaintenanceHistoryRequestMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "DetectorMaintenanceHistoryRequestMsg:message"
    ASN-NAME "DetectorMaintenanceHistoryRequestMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 15 }
    DEFINITION "The information content necessary to request an owner center's
detector maintenance history for a given set of devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "emergency traffic coordination",
        "archive requests" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message

```

```
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 20 } -- DetectorMaintenanceHistoryRequest }
DATA-TYPE "DetectorMaintenanceHistoryRequestMsg ::= DetectorMaintenanceHistoryRequest
" }
```

3.2.4.5.2 XML REPRESENTATION

```
<xs:element name="detectorMaintenanceHistoryRequestMsg"
type="DetectorMaintenanceHistoryRequest"/>
```

3.2.4.6 detectorStatusMsg

3.2.4.6.1 ASN.1 REPRESENTATION

```
detectorStatusMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DetectorStatusMsg:message"
ASN-NAME "DetectorStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 16 }
DEFINITION "The information content describing an owner center's detector status
for a given set of stations and/or sensors."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device status",
    "emergency traffic control information",
    "emergency traffic coordination" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 21 } -- DetectorStatus }
DATA-TYPE " DetectorStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF DetectorStatus "
```

3.2.4.6.2 XML REPRESENTATION

```
<xs:element name="detectorStatusMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="detector-status-item"
type="DetectorStatus"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

3.2.5 Device Class Messages

3.2.5.1 deviceCancelControlRequestMsg

3.2.5.1.1 ASN.1 REPRESENTATION

```
deviceCancelControlRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DeviceCancelControlRequestMsg:message"
ASN-NAME "DeviceCancelControlRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 17 }
```

```

DEFINITION          "The information content necessary to request an owner center to
cancel an external center's prior control request."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device control request",
    "emergency traffic control request",
    "emergency traffic coordination" }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 23 } -- DeviceCancelControlRequest }
DATA-TYPE "DeviceCancelControlRequestMsg ::= DeviceCancelControlRequest  "  }

```

3.2.5.1.2 XML REPRESENTATION

```
<xs:element name="deviceCancelControlRequestMsg" type="DeviceCancelControlRequest"/>
```

3.2.5.2 deviceControlResponseMsg

3.2.5.2.1 ASN.1 REPRESENTATION

```

deviceControlResponseMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DeviceControlResponseMsg:message"
ASN-NAME "DeviceControlResponseMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 18 }
DEFINITION          "The information content sent from an owner center to an external
center to confirm acceptance (or rejection) of device control."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic control information",
    "emergency traffic coordination" }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 25 } -- DeviceControlResponse }
DATA-TYPE "DeviceControlResponseMsg ::= DeviceControlResponse  "  }

```

3.2.5.2.2 XML REPRESENTATION

```
<xs:element name="deviceControlResponseMsg" type="DeviceControlResponse"/>
```

3.2.5.3 deviceControlStatusRequestMsg

3.2.5.3.1 ASN.1 REPRESENTATION

```

deviceControlStatusRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DeviceControlStatusRequestMsg:message"
ASN-NAME "DeviceControlStatusRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 19 }

```

```

DEFINITION          "The information content necessary to request an owner center to
provide status about an external center's prior control request."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device status",
    "emergency traffic coordination" }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 27 } -- DeviceControlStatusRequest }
DATA-TYPE "DeviceControlStatusRequestMsg ::= DeviceControlStatusRequest  "  }

```

3.2.5.3.2 XML REPRESENTATION

```
<xs:element name="deviceControlStatusRequestMsg" type="DeviceControlStatusRequest"/>
```

3.2.5.4 deviceInformationRequestMsg

3.2.5.4.1 ASN.1 REPRESENTATION

```

deviceInformationRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DeviceInformationRequestMsg:message"
ASN-NAME "DeviceInformationRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 20 }
DEFINITION          "The information content necessary to request an owner center to
provide inventory, status, schedule, or timing plan information for a given set of
devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device control request",
    "emergency traffic control request",
    "emergency traffic coordination" }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 28 } -- DeviceInformationRequest }
DATA-TYPE "DeviceInformationRequestMsg ::= DeviceInformationRequest  "  }

```

3.2.5.4.2 XML REPRESENTATION

```
<xs:element name="deviceInformationRequestMsg" type="DeviceInformationRequest"/>
```

3.2.5.5 devicePriorityQueueRequestMsg

3.2.5.5.1 ASN.1 REPRESENTATION

```

devicePriorityQueueRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DevicePriorityQueueRequestMsg:message"
ASN-NAME "DevicePriorityQueueRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 21 }

```

```

DEFINITION          "The information content necessary to request an owner center to
provide a control priority queue list for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic control information",
    "emergency traffic coordination" }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 33 } -- DevicePriorityQueueRequest }
DATA-TYPE "DevicePriorityQueueRequestMsg ::= DevicePriorityQueueRequest " }

```

3.2.5.5.2 XML REPRESENTATION

```
<xs:element name="devicePriorityQueueRequestMsg" type="DevicePriorityQueueRequest"/>
```

3.2.6 DMS Class Messages

3.2.6.1 dMSControlRequestMsg

3.2.6.1.1 ASN.1 REPRESENTATION

```

dMSControlRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DMSControlRequestMsg:message"
ASN-NAME "DMSControlRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 22 }
DEFINITION          "The information content necessary to request a control action of an
owner center's dynamic message sign."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device control request",
    "emergency traffic control request",
    "emergency traffic coordination" }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 38 } -- DMSControlRequest }
DATA-TYPE "DMSControlRequestMsg ::= DMSControlRequest " }

```

3.2.6.1.2 XML REPRESENTATION

```
<xs:element name="dMSControlRequestMsg" type="DMSControlRequest"/>
```

3.2.6.2 dMSFontTableMsg

3.2.6.2.1 ASN.1 REPRESENTATION

```

dMSFontTableMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DMSFontTableMsg:message"
ASN-NAME "DMSFontTableMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 23 }

```

```

DEFINITION          "The information content describing an owner center's dynamic message
sign font tables."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 39 } -- DMSFontTable }
DATA-TYPE "DMSFontTableMsg ::= SEQUENCE (SIZE(1..10240)) OF DMSFontTable " }

```

3.2.6.2.2 XML REPRESENTATION

```

<xs:element name="dMSFontTableMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="dms-font-table-item" type="DMSFontTable"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.6.3 dMSFontTableRequestMsg

3.2.6.3.1 ASN.1 REPRESENTATION

```

dMSFontTableRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DMSFontTableRequestMsg:message"
ASN-NAME "DMSFontTableRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 24 }
DEFINITION          "The information content necessary to request an owner center's
dynamic message sign font tables."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "emergency traffic coordination"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 40 } -- DMSFontTableRequest }
DATA-TYPE "DMSFontTableRequestMsg ::= DMSFontTableRequest " }

```

3.2.6.3.2 XML REPRESENTATION

```

<xs:element name="dMSFontTableRequestMsg" type="DMSFontTableRequest"/>

```

3.2.6.4 dMSInventoryMsg

3.2.6.4.1 ASN.1 REPRESENTATION

```

dMSInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DMSInventoryMsg:message"
ASN-NAME "DMSInventoryMsg"

```



```
ASN-OBJECT-IDENTIFIER { tmddMessages 25 }
DEFINITION "The information content describing an owner center's dynamic message
sign inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 41 } -- DMSInventory }
DATA-TYPE " DMSInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF DMSInventory " }
```

3.2.6.4.2 XML REPRESENTATION

```
<xs:element name="dMSInventoryMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="dms-inventory-item" type="DMSInventory"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

3.2.6.5 dMSMessageAppearanceMsg

3.2.6.5.1 ASN.1 REPRESENTATION

```
dMSMessageAppearanceMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DMSMessageAppearanceMsg:message"
ASN-NAME "DMSMessageAppearanceMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 26 }
DEFINITION "The information content describing an owner center's dynamic message
sign appearance attributes for a given set of signs."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 42 } -- DMSMessageAppearance }
DATA-TYPE "DMSMessageAppearanceMsg ::= DMSMessageAppearance " }
```

3.2.6.5.2 XML REPRESENTATION

```
<xs:element name="dMSMessageAppearanceMsg" type="DMSMessageAppearance"/>
```

3.2.6.6 dMSMessageAppearanceRequestMsg

3.2.6.6.1 ASN.1 REPRESENTATION

```
dMSMessageAppearanceRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DMSMessageAppearanceRequestMsg:message"
```

```
ASN-NAME "DMSMessageAppearanceRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 27 }
DEFINITION "The information content necessary to request an owner center's
dynamic message sign appearance attributes for a given set of signs."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "emergency traffic coordination" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 43 } -- DMSMessageAppearanceRequest }
DATA-TYPE "DMSMessageAppearanceRequestMsg ::= DMSMessageAppearanceRequest " }
```

3.2.6.6.2 XML REPRESENTATION

```
<xs:element name="dMSMessageAppearanceRequestMsg" type="DMSMessageAppearanceRequest"/>
```

3.2.6.7 dMSMessageInventoryMsg

3.2.6.7.1 ASN.1 REPRESENTATION

```
dMSMessageInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "DMSMessageInventoryMsg:message"
ASN-NAME "DMSMessageInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 28 }
DEFINITION "The information content describing an owner center's dynamic message
library for a given set of signs."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 45 } -- DMSMessageInventory }
DATA-TYPE " DMSMessageInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF
DMSMessageInventory " }
```

3.2.6.7.2 XML REPRESENTATION

```
<xs:element name="dMSMessageInventoryMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="dms-message-inventory-item"
type="DMSMessageInventory"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

3.2.6.8 dMSMessageInventoryRequestMsg

3.2.6.8.1 ASN.1 REPRESENTATION

```
dMSMessageInventoryRequestMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "DMSMessageInventoryRequestMsg:message"
  ASN-NAME "DMSMessageInventoryRequestMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 29 }
  DEFINITION          "The information content necessary to request an owner center's
dynamic message sign library for a given set of signs."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "emergency traffic coordination"  }
  ARCHITECTURE-NAME          {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 46 } -- DMSMessageInventoryRequest  }
  DATA-TYPE "DMSMessageInventoryRequestMsg ::= DMSMessageInventoryRequest  "  }
```

3.2.6.8.2 XML REPRESENTATION

```
<xs:element name="dMSMessageInventoryRequestMsg" type="DMSMessageInventoryRequest"/>
```

3.2.6.9 dMSPriorityQueueMsg

3.2.6.9.1 ASN.1 REPRESENTATION

```
dMSPriorityQueueMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "DMSPriorityQueueMsg:message"
  ASN-NAME "DMSPriorityQueueMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 30 }
  DEFINITION          "The information content describing an owner center's dynamic message
sign control priority queue for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic control information",
    "emergency traffic coordination"  }
  ARCHITECTURE-NAME          {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 47 } -- DMSPriorityQueue  }
  DATA-TYPE " DMSPriorityQueueMsg ::= SEQUENCE (SIZE(1..10240)) OF DMSPriorityQueue
"  }
```

3.2.6.9.2 XML REPRESENTATION

```
<xs:element name="dMSPriorityQueueMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="dms-priority-queue-item"
type="DMSPriorityQueue"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.6.10 dMSStatusMsg

3.2.6.10.1 ASN.1 REPRESENTATION

```
dMSStatusMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "DMSStatusMsg:message"
  ASN-NAME "DMSStatusMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 31 }
  DEFINITION          "The information content describing an owner center's dynamic message
  sign status for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device status",
    "emergency traffic control information"  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 48 } -- DMSStatus  }
  DATA-TYPE "      DMSStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF DMSStatus  "  }
```

3.2.6.10.2 XML REPRESENTATION

```
<xs:element name="dMSStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="dms-status-item" type="DMSStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.7 ESS Class Messages

3.2.7.1 eSSInventoryMsg

3.2.7.1.1 ASN.1 REPRESENTATION

```
eSSInventoryMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "ESSInventoryMsg:message"
  ASN-NAME "ESSInventoryMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 32 }
  DEFINITION          "The information content describing an owner center's environmental
  sensor station inventory."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data"  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 52 } -- ESSInventory  }
  DATA-TYPE "      ESSInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF ESSInventory  "  }
```

3.2.7.1.2 XML REPRESENTATION

```
<xs:element name="eSSInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="ess-inventory-item" type="ESSInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.7.2 eSSObservationMetadataMsg

3.2.7.2.1 ASN.1 REPRESENTATION

```
eSSObservationMetadataMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "ESSObservationMetadataMsg:message"
  ASN-NAME "ESSObservationMetadataMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 33 }
  DEFINITION "The information content describing an owner center's environmental
  sensor station observation metadata."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data",
    "environmental conditions data status"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 55 } -- ESSObservationMetadata  }
  DATA-TYPE " ESSObservationMetadataMsg ::= SEQUENCE (SIZE(1..10240)) OF
  ESSObservationMetadata  " }
```

3.2.7.2.2 XML REPRESENTATION

```
<xs:element name="eSSObservationMetadataMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="ess-observation-metadata-item"
type="ESSObservationMetadata"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.7.3 eSSObservationReportMsg

3.2.7.3.1 ASN.1 REPRESENTATION

```
eSSObservationReportMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "ESSObservationReportMsg:message"
  ASN-NAME "ESSObservationReportMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 34 }
  DEFINITION "The information content describing an owner center's environmental
  sensor station observation reports for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data",
    "environmental conditions data"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
```

```
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 57 } -- ESSObservationReport }
DATA-TYPE "    ESSObservationReportMsg ::= SEQUENCE (SIZE(1..10240)) OF
ESSObservationReport    " }
```

3.2.7.3.2 XML REPRESENTATION

```
<xs:element name="eSSObservationReportMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="ess-observation-report-item"
type="ESSObservationReport"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

3.2.7.4 eSSStatusMsg

3.2.7.4.1 ASN.1 REPRESENTATION

```
eSSStatusMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "ESSStatusMsg:message"
ASN-NAME "ESSStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 35 }
DEFINITION "The information content describing an owner center's environmental
sensor station status for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device status" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 65 } -- ESSStatus }
DATA-TYPE "    ESSStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF ESSStatus    " }
```

3.2.7.4.2 XML REPRESENTATION

```
<xs:element name="eSSStatusMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="ess-status-item" type="ESSStatus"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

3.2.8 Event Class Messages

3.2.8.1 actionLogMsg

3.2.8.1.1 ASN.1 REPRESENTATION

```
actionLogMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "ActionLogMsg:message"
ASN-NAME "ActionLogMsg"
}
```

```
ASN-OBJECT-IDENTIFIER { tmddMessages 36 }
DEFINITION "The information content describing an owner center's action logs."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "event plans",
    "incident information",
    "incident response status" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 66 } -- ActionLog }
DATA-TYPE " ActionLogMsg ::= SEQUENCE (SIZE(1..10240)) OF ActionLog " }
```

3.2.8.1.2 XML REPRESENTATION

```
<xs:element name="actionLogMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="log-entry" type="ActionLog"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.8.2 eventIndexMsg

3.2.8.2.1 ASN.1 REPRESENTATION

```
eventIndexMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "EventIndexMsg:message"
  ASN-NAME "EventIndexMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 37 }
  DEFINITION "The information content describing an owner center's list of current
  events and references (index)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

```
  ARCHITECTURE-REFERENCE {
    "event plans",
    "incident information",
    "incident response status" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 84 } -- EventIndex }
  DATA-TYPE " EventIndexMsg ::= SEQUENCE (SIZE(1..10240)) OF EventIndex " }
```

3.2.8.2.2 XML REPRESENTATION

```
<xs:element name="eventIndexMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="eventIndex" type="EventIndex"/>
    </xs:sequence>
  </xs:complexType>
```

</xs:element>

3.2.8.3 eventRequestMsg

3.2.8.3.1 ASN.1 REPRESENTATION

```
eventRequestMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "EventRequestMsg:message"
  ASN-NAME "EventRequestMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 38 }
  DEFINITION          "The information content necessary to request an owner center's
  events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "incident information"
  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 81 } -- EventFilterRequest
  }
  DATA-TYPE "EventRequestMsg ::= EventFilterRequest " }
```

3.2.8.3.2 XML REPRESENTATION

<xs:element name="eventRequestMsg" type="EventFilterRequest"/>

3.2.8.4 fEUMsg

3.2.8.4.1 ASN.1 REPRESENTATION

```
fEUMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "FEUMsg:message"
  ASN-NAME "FEUMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 39 }
  DEFINITION          "The information content describing an owner center's event
  information for a given set of events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "event plans",
    "incident information",
    "incident response status"
  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 95 } -- FullEventUpdate
  }
  DATA-TYPE " FEUMsg ::= SEQUENCE (SIZE(1..10240)) OF FullEventUpdate " }
```

3.2.8.4.2 XML REPRESENTATION

```
<xs:element name="fEUMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
```



```

        <xs:element name="FEU" type="FullEventUpdate"/>
    </xs:sequence>
</xs:complexType>
</xs:element>

```

3.2.9 Gate Class Messages

3.2.9.1 gateControlRequestMsg

3.2.9.1.1 ASN.1 REPRESENTATION

```

gateControlRequestMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "GateControlRequestMsg:message"
    ASN-NAME "GateControlRequestMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 40 }
    DEFINITION "The information content necessary to request a control action of an
    owner center's gate."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device control request",
        "emergency traffic control request",
        "emergency traffic coordination" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 110 } -- GateControlRequest }
    DATA-TYPE "GateControlRequestMsg ::= GateControlRequest " }

```

3.2.9.1.2 XML REPRESENTATION

```

<xs:element name="gateControlRequestMsg" type="GateControlRequest"/>

```

3.2.9.2 gateControlScheduleMsg

3.2.9.2.1 ASN.1 REPRESENTATION

```

gateControlScheduleMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "GateControlScheduleMsg:message"
    ASN-NAME "GateControlScheduleMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 41 }
    DEFINITION "The information content describing an owner center's gate control
    schedule for a given set of devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 111 } -- GateControlSchedule }
    DATA-TYPE " GateControlScheduleMsg ::= SEQUENCE (SIZE(1..10240)) OF
    GateControlSchedule " }

```

3.2.9.2.2 XML REPRESENTATION

```
<xs:element name="gateControlScheduleMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="gate-control-schedule-item"
type="GateControlSchedule"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.9.3 gateInventoryMsg

3.2.9.3.1 ASN.1 REPRESENTATION

```
gateInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "GateInventoryMsg:message"
ASN-NAME "GateInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 42 }
DEFINITION "The information content describing an owner center's gate
inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 112 } -- GateInventory }
DATA-TYPE " GateInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF GateInventory " }
```

3.2.9.3.2 XML REPRESENTATION

```
<xs:element name="gateInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="gate-inventory-item" type="GateInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.9.4 gateStatusMsg

3.2.9.4.1 ASN.1 REPRESENTATION

```
gateStatusMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "GateStatusMsg:message"
ASN-NAME "GateStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 43 }
DEFINITION "The information content describing an owner center's gate status for
a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "device status",
  "emergency traffic control information" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
```

```
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 113 } -- GateStatus }
DATA-TYPE " GateStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF GateStatus " }
```

3.2.9.4.2 XML REPRESENTATION

```
<xs:element name="gateStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="gate-status-item" type="GateStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.10 HAR Class Messages

3.2.10.1 hARControlRequestMsg

3.2.10.1.1 ASN.1 REPRESENTATION

```
hARControlRequestMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "HARControlRequestMsg:message"
  ASN-NAME "HARControlRequestMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 44 }
  DEFINITION "The information content necessary to request a control action of an
  owner center's highway advisory radio."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device control request",
    "emergency traffic control request",
    "emergency traffic coordination" }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 117 } -- HARControlRequest }
  DATA-TYPE "HARControlRequestMsg ::= HARControlRequest " }
```

3.2.10.1.2 XML REPRESENTATION

```
<xs:element name="hARControlRequestMsg" type="HARControlRequest"/>
```

3.2.10.2 hARControlScheduleMsg

3.2.10.2.1 ASN.1 REPRESENTATION

```
hARControlScheduleMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "HARControlScheduleMsg:message"
  ASN-NAME "HARControlScheduleMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 45 }
  DEFINITION "The information content describing an owner center's highway
  advisory radio control schedule for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
```

```

    "device data"    }
ARCHITECTURE-NAME    {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 118 } -- HARControlSchedule }
DATA-TYPE "HARControlScheduleMsg" ::= SEQUENCE (SIZE(1..10240)) OF
HARControlSchedule " " }

```

3.2.10.2.2 XML REPRESENTATION

```

<xs:element name="hARControlScheduleMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="har-control-schedule-item"
type="HARControlSchedule"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.10.3 hARInventoryMsg

3.2.10.3.1 ASN.1 REPRESENTATION

```

hARInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "HARInventoryMsg:message"
ASN-NAME "HARInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 46 }
DEFINITION "The information content describing an owner center's highway
advisory radio inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data"    }
ARCHITECTURE-NAME    {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 119 } -- HARInventory }
DATA-TYPE "HARInventoryMsg" ::= SEQUENCE (SIZE(1..10240)) OF HARInventory " " }

```

3.2.10.3.2 XML REPRESENTATION

```

<xs:element name="hARInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="har-inventory-item" type="HARInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.10.4 hARMessageInventoryMsg

3.2.10.4.1 ASN.1 REPRESENTATION

```

hARMessageInventoryMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "HARMessageInventoryMsg:message"
  ASN-NAME "HARMessageInventoryMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 47 }
  DEFINITION          "The information content describing an owner center's highway
  advisory message library for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data" }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 120 } -- HARMessageInventory }
  DATA-TYPE "HARMessageInventoryMsg" ::= SEQUENCE (SIZE(1..10240)) OF
  HARMessageInventory " " }

```

3.2.10.4.2 XML REPRESENTATION

```

<xs:element name="hARMessageInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="har-message-inventory-item"
type="HARMessageInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.10.5 hARPriorityQueueMsg

3.2.10.5.1 ASN.1 REPRESENTATION

```

hARPriorityQueueMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "HARPriorityQueueMsg:message"
  ASN-NAME "HARPriorityQueueMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 48 }
  DEFINITION          "The information content describing an owner center's highway
  advisory radio control priority queue for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic control information" }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 121 } -- HARPriorityQueue }
  DATA-TYPE "HARPriorityQueueMsg" ::= SEQUENCE (SIZE(1..10240)) OF HARPriorityQueue
  " " }

```

3.2.10.5.2 XML REPRESENTATION

```

<xs:element name="hARPriorityQueueMsg">
  <xs:complexType>

```

```

        <xs:sequence maxOccurs="10240">
            <xs:element name="har-priority-queue-item"
type="HARPriorityQueue"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.10.6 hARStatusMsg

3.2.10.6.1 ASN.1 REPRESENTATION

```

hARStatusMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "HARStatusMsg:message"
    ASN-NAME "HARStatusMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 49 }
    DEFINITION "The information content describing an owner center's highway
    advisory radio status for a given set of devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device status",
        "emergency traffic control information"
    }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 122 } -- HARStatus
    }
    DATA-TYPE "HARStatusMsg" ::= SEQUENCE (SIZE(1..10240)) OF HARStatus
}

```

3.2.10.6.2 XML REPRESENTATION

```

<xs:element name="hARStatusMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="har-status-item" type="HARStatus"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.11 IntersectionSignal Class Messages

3.2.11.1 intersectionSignalControlRequestMsg

3.2.11.1.1 ASN.1 REPRESENTATION

```

intersectionSignalControlRequestMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "IntersectionSignalControlRequestMsg:message"
    ASN-NAME "IntersectionSignalControlRequestMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 50 }
    DEFINITION "The information content necessary to request a control action of an
    owner center's traffic signal."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device control request",
        "emergency traffic control request",
        "emergency traffic coordination"
    }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
}

```

```
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 124 } -- IntersectionSignalControlRequest }
DATA-TYPE "IntersectionSignalControlRequestMsg ::= IntersectionSignalControlRequest
" }
```

3.2.11.1.2 XML REPRESENTATION

```
<xs:element name="intersectionSignalControlRequestMsg"
type="IntersectionSignalControlRequest"/>
```

3.2.11.2 intersectionSignalControlResponseMsg

3.2.11.2.1 ASN.1 REPRESENTATION

```
intersectionSignalControlResponseMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "IntersectionSignalControlResponseMsg:message"
ASN-NAME "IntersectionSignalControlResponseMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 51 }
DEFINITION "The information content describing an owner center's response to
traffic signal control request."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic control information" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 125 } -- IntersectionSignalControlResponse }
DATA-TYPE "IntersectionSignalControlResponseMsg ::= IntersectionSignalControlResponse
" }
```

3.2.11.2.2 XML REPRESENTATION

```
<xs:element name="intersectionSignalControlResponseMsg"
type="IntersectionSignalControlResponse"/>
```

3.2.11.3 intersectionSignalControlScheduleMsg

3.2.11.3.1 ASN.1 REPRESENTATION

```
intersectionSignalControlScheduleMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "IntersectionSignalControlScheduleMsg:message"
ASN-NAME "IntersectionSignalControlScheduleMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 52 }
DEFINITION "The information content describing an owner center's traffic signal
control schedule for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
```

```
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 126 } -- IntersectionSignalControlSchedule }
DATA-TYPE "IntersectionSignalControlScheduleMsg ::= SEQUENCE (SIZE(1..524288)) OF
IntersectionSignalControlSchedule " }
```

3.2.11.3.2 XML REPRESENTATION

```
<xs:element name="intersectionSignalControlScheduleMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="524288">
      <xs:element name="intersection-signal-control-schedule-item"
type="IntersectionSignalControlSchedule"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.11.4 intersectionSignalInventoryMsg

3.2.11.4.1 ASN.1 REPRESENTATION

```
intersectionSignalInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "IntersectionSignalInventoryMsg:message"
ASN-NAME "IntersectionSignalInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 53 }
DEFINITION "The information content describing an owner center's traffic signal
control inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 127 } -- IntersectionSignalInventory }
DATA-TYPE "IntersectionSignalInventoryMsg ::= SEQUENCE (SIZE(1..16384)) OF
IntersectionSignalInventory " }
```

3.2.11.4.2 XML REPRESENTATION

```
<xs:element name="intersectionSignalInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="16384">
      <xs:element name="intersection-signal-inventory-item"
type="IntersectionSignalInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.11.5 intersectionSignalPriorityQueueMsg

3.2.11.5.1 ASN.1 REPRESENTATION

```
intersectionSignalPriorityQueueMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "IntersectionSignalPriorityQueueMsg:message"
```



```
ASN-NAME "IntersectionSignalPriorityQueueMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 54 }
DEFINITION "The information content describing an owner center's traffic signal
control priority queue for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic coordination" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 135 } -- IntersectionSignalPriorityQueue }
DATA-TYPE "IntersectionSignalPriorityQueueMsg ::= SEQUENCE (SIZE(1..10240)) OF
IntersectionSignalPriorityQueue " }
```

3.2.11.5.2 XML REPRESENTATION

```
<xs:element name="intersectionSignalPriorityQueueMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="intersection-signal-priority-queue-item"
type="IntersectionSignalPriorityQueue"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.11.6 intersectionSignalStatusMsg

3.2.11.6.1 ASN.1 REPRESENTATION

```
intersectionSignalStatusMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "IntersectionSignalStatusMsg:message"
ASN-NAME "IntersectionSignalStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 55 }
DEFINITION "The information content describing an owner center's traffic signal
status for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device status",
    "emergency traffic control information" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 140 } -- IntersectionSignalStatus }
DATA-TYPE "IntersectionSignalStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF
IntersectionSignalStatus " }
```

3.2.11.6.2 XML REPRESENTATION

```
<xs:element name="intersectionSignalStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
```

```

        <xs:element name="intersection-signal-status-item"
type="IntersectionSignalStatus"/>
    </xs:sequence>
</xs:complexType>
</xs:element>

```

3.2.11.7 intersectionSignalTimingPatternInventoryMsg

3.2.11.7.1 ASN.1 REPRESENTATION

```

intersectionSignalTimingPatternInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "IntersectionSignalTimingPatternInventoryMsg:message"
ASN-NAME "IntersectionSignalTimingPatternInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 56 }
DEFINITION "The information content describing an owner center's traffic signal
timing pattern inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 141 } -- IntersectionSignalTimingPatternInventory }
DATA-TYPE "IntersectionSignalTimingPatternInventoryMsg ::= SEQUENCE
(SIZE(1..512000)) OF IntersectionSignalTimingPatternInventory " }

```

3.2.11.7.2 XML REPRESENTATION

```

<xs:element name="intersectionSignalTimingPatternInventoryMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="512000">
            <xs:element name="intersection-signal-timing-pattern-
inventory-item" type="IntersectionSignalTimingPatternInventory"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.11.8 intersectionSignalTimingPatternInventoryRequestMsg

3.2.11.8.1 ASN.1 REPRESENTATION

```

intersectionSignalTimingPatternInventoryRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "IntersectionSignalTimingPatternInventoryRequestMsg:message"
ASN-NAME "IntersectionSignalTimingPatternInventoryRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 57 }
DEFINITION "The information content necessary to request an owner center's
traffic signal timing pattern inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "nil" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {

```

```
{ tmddDataFrames 142 } -- IntersectionSignalTimingPatternInventoryRequest }
DATA-TYPE "IntersectionSignalTimingPatternInventoryRequestMsg ::=
IntersectionSignalTimingPatternInventoryRequest " }
```

3.2.11.8.2 XML REPRESENTATION

```
<xs:element name="intersectionSignalTimingPatternInventoryRequestMsg"
type="IntersectionSignalTimingPatternInventoryRequest"/>
```

3.2.12 LCS Class Messages

3.2.12.1 ICSCControlRequestMsg

3.2.12.1.1 ASN.1 REPRESENTATION

```
lCSControlRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "LCSCControlRequestMsg:message"
ASN-NAME "LCSCControlRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 58 }
DEFINITION "The information content necessary to request a control action of an
owner center's lane control signal."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
"device control request",
"emergency traffic control request",
"emergency traffic coordination" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
{ tmddDataFrames 144 } -- LCSCControlRequest }
DATA-TYPE "LCSCControlRequestMsg ::= LCSCControlRequest " }
```

3.2.12.1.2 XML REPRESENTATION

```
<xs:element name="lCSControlRequestMsg" type="LCSCControlRequest"/>
```

3.2.12.2 ICSCControlScheduleMsg

3.2.12.2.1 ASN.1 REPRESENTATION

```
lCSControlScheduleMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "LCSCControlScheduleMsg:message"
ASN-NAME "LCSCControlScheduleMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 59 }
DEFINITION "The information content describing an owner center's lane control
signal control schedule for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
"device data" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
```

```
{ tmddDataFrames 145 } -- LCSControlSchedule }
DATA-TYPE "    LCSControlScheduleMsg ::= SEQUENCE (SIZE(1..10240)) OF
LCSControlSchedule    "    }
```

3.2.12.2 XML REPRESENTATION

```
<xs:element name="LCSControlScheduleMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="lcs-control-schedule-item"
type="LCSControlSchedule"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.12.3 LCSInventoryMsg

3.2.12.3.1 ASN.1 REPRESENTATION

```
LCSInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "LCSInventoryMsg:message"
ASN-NAME "LCSInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 60 }
DEFINITION      "The information content describing an owner center's lane control
signal inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "device data"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 146 } -- LCSInventory }
DATA-TYPE "    LCSInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF LCSInventory    " }
```

3.2.12.3.2 XML REPRESENTATION

```
<xs:element name="LCSInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="lcs-inventory-item" type="LCSInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.12.4 LCSStatusMsg

3.2.12.4.1 ASN.1 REPRESENTATION

```
LCSStatusMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "LCSStatusMsg:message"
ASN-NAME "LCSStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 61 }
DEFINITION      "The information content describing an owner center's lane control
signal status for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
```

```

    "device status",
    "emergency traffic control information"
  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 147 } -- LCSStatus
  }
  DATA-TYPE "    LCSStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF LCSStatus    "

```

3.2.12.4.2 XML REPRESENTATION

```

<xs:element name="LCSStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="lcs-status-item" type="LCSStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.13 Link Class Messages

3.2.13.1 linkInventoryMsg

3.2.13.1.1 ASN.1 REPRESENTATION

```

linkInventoryMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "LinkInventoryMsg:message"
  ASN-NAME "LinkInventoryMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 62 }
  DEFINITION      "The information content describing an owner center's traffic network
  link inventory."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "road network conditions"
  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 148 } -- LinkInventory
  }
  DATA-TYPE "    LinkInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF LinkInventory    "
}

```

3.2.13.1.2 XML REPRESENTATION

```

<xs:element name="linkInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="link-inventory-item" type="LinkInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.13.2 linkStatusMsg

3.2.13.2.1 ASN.1 REPRESENTATION

```
linkStatusMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "LinkStatusMsg:message"
  ASN-NAME "LinkStatusMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 63 }
  DEFINITION          "The information content describing an owner center's traffic network
  link status."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "road network conditions",
    "traffic information for media"  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 150 } -- LinkStatus  }
  DATA-TYPE "      LinkStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF LinkStatus      " }
```

3.2.13.2.2 XML REPRESENTATION

```
<xs:element name="linkStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="link-status-item" type="LinkStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.14 Node Class Messages

3.2.14.1 nodeInventoryMsg

3.2.14.1.1 ASN.1 REPRESENTATION

```
nodeInventoryMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "NodeInventoryMsg:message"
  ASN-NAME "NodeInventoryMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 64 }
  DEFINITION          "The information content describing an owner center's traffic network
  node inventory."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "road network conditions"  }
  ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 152 } -- NodeInventory  }
  DATA-TYPE "      NodeInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF NodeInventory      " }
```

3.2.14.1.2 XML REPRESENTATION

```
<xs:element name="nodeInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="node-inventory-item" type="NodeInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

```

        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.14.2 nodeStatusMsg

3.2.14.2.1 ASN.1 REPRESENTATION

```

nodeStatusMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "NodeStatusMsg:message"
    ASN-NAME "NodeStatusMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 65 }
    DEFINITION "The information content describing an owner center's traffic network
    node status."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "road network conditions",
        "traffic information for media"    }
    ARCHITECTURE-NAME { "U.S. National ITS Architecture" }
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 154 } -- NodeStatus    }
    DATA-TYPE "    NodeStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF NodeStatus    "    }

```

3.2.14.2.2 XML REPRESENTATION

```

<xs:element name="nodeStatusMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="node-status-item" type="NodeStatus"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.15 Organization Class Messages

3.2.15.1 organizationInformationMsg

3.2.15.1.1 ASN.1 REPRESENTATION

```

organizationInformationMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "OrganizationInformationMsg:message"
    ASN-NAME "OrganizationInformationMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 66 }
    DEFINITION "The information content describing an owner center's organization
    and center information."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "nil"    }
    ARCHITECTURE-NAME { "U.S. National ITS Architecture" }
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 158 } -- OrganizationInformation    }

```

DATA-TYPE " OrganizationInformationMsg ::= SEQUENCE (SIZE(1..10240)) OF
OrganizationInformation " }

3.2.15.1.2 XML REPRESENTATION

```
<xs:element name="organizationInformationMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="organization-information-item"
type="OrganizationInformation"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.15.2 organizationInformationRequestMsg

3.2.15.2.1 ASN.1 REPRESENTATION

```
organizationInformationRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "OrganizationInformationRequestMsg:message"
ASN-NAME "OrganizationInformationRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 67 }
DEFINITION "The information content necessary to request an owner center's
organization or center information."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "nil" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 159 } -- OrganizationInformationRequest }
DATA-TYPE "OrganizationInformationRequestMsg ::= OrganizationInformationRequest "
}
```

3.2.15.2.2 XML REPRESENTATION

```
<xs:element name="organizationInformationRequestMsg"
type="OrganizationInformationRequest"/>
```

3.2.16 RampMeter Class Messages

3.2.16.1 rampMeterControlRequestMsg

3.2.16.1.1 ASN.1 REPRESENTATION

```
rampMeterControlRequestMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "RampMeterControlRequestMsg:message"
ASN-NAME "RampMeterControlRequestMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 68 }
DEFINITION "The information content necessary to request a control action of an
owner center's ramp meter."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "device control request",
  "emergency traffic control request",
  "emergency traffic coordination" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
```



```

ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 162 } -- RampMeterControlRequest }
DATA-TYPE "RampMeterControlRequestMsg ::= RampMeterControlRequest  "  }

```

3.2.16.1.2 XML REPRESENTATION

```
<xs:element name="rampMeterControlRequestMsg" type="RampMeterControlRequest"/>
```

3.2.16.2 rampMeterControlScheduleMsg

3.2.16.2.1 ASN.1 REPRESENTATION

```

rampMeterControlScheduleMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "RampMeterControlScheduleMsg:message"
    ASN-NAME "RampMeterControlScheduleMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 69 }
    DEFINITION          "The information content describing an owner center's ramp meter
    control schedule for a given set of devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device data" }
    ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 163 } -- RampMeterControlSchedule }
    DATA-TYPE "      RampMeterControlScheduleMsg ::= SEQUENCE (SIZE(1..10240)) OF
    RampMeterControlSchedule  "  }

```

3.2.16.2.2 XML REPRESENTATION

```

<xs:element name="rampMeterControlScheduleMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="ramp-meter-control-schedule-item"
type="RampMeterControlSchedule"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.16.3 rampMeterInventoryMsg

3.2.16.3.1 ASN.1 REPRESENTATION

```

rampMeterInventoryMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "RampMeterInventoryMsg:message"
    ASN-NAME "RampMeterInventoryMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 70 }
    DEFINITION          "The information content describing an owner center's ramp meter
    inventory."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

```

```

ARCHITECTURE-REFERENCE {
    "device data" }
ARCHITECTURE-NAME          {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 164 } -- RampMeterInventory }
DATA-TYPE "RampMeterInventoryMsg" ::= SEQUENCE (SIZE(1..10240)) OF
RampMeterInventory " " }

```

3.2.16.3.2 XML REPRESENTATION

```

<xs:element name="rampMeterInventoryMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="ramp-meter-inventory-item"
type="RampMeterInventory"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.16.4 rampMeterPlanInventoryMsg

3.2.16.4.1 ASN.1 REPRESENTATION

```

rampMeterPlanInventoryMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "RampMeterPlanInventoryMsg:message"
    ASN-NAME "RampMeterPlanInventoryMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 71 }
    DEFINITION "The information content describing an owner center's ramp meter
timing plan inventory."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device data" }
    ARCHITECTURE-NAME          {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 168 } -- RampMeterPlanInventory }
    DATA-TYPE "RampMeterPlanInventoryMsg" ::= SEQUENCE (SIZE(1..10240)) OF
RampMeterPlanInventory " " }

```

3.2.16.4.2 XML REPRESENTATION

```

<xs:element name="rampMeterPlanInventoryMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="ramp-meter-plan-inventory-item"
type="RampMeterPlanInventory"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.16.5 rampMeterPriorityQueueMsg

3.2.16.5.1 ASN.1 REPRESENTATION

```
rampMeterPriorityQueueMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "RampMeterPriorityQueueMsg:message"
    ASN-NAME "RampMeterPriorityQueueMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 72 }
    DEFINITION "The information content describing an owner center's ramp meter
    control priority queue for a given set of devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device data",
        "emergency traffic control information",
        "emergency traffic coordination" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 169 } -- RampMeterPriorityQueue }
    DATA-TYPE " RampMeterPriorityQueueMsg ::= SEQUENCE (SIZE(1..10240)) OF
    RampMeterPriorityQueue " }
```

3.2.16.5.2 XML REPRESENTATION

```
<xs:element name="rampMeterPriorityQueueMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="10240">
            <xs:element name="ramp-meter-priority-queue-item"
type="RampMeterPriorityQueue"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

3.2.16.6 rampMeterStatusMsg

3.2.16.6.1 ASN.1 REPRESENTATION

```
rampMeterStatusMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "RampMeterStatusMsg:message"
    ASN-NAME "RampMeterStatusMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 73 }
    DEFINITION "The information content describing an owner center's ramp meter
    status for a given set of devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device status",
        "emergency traffic control information" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 170 } -- RampMeterStatus }
    DATA-TYPE " RampMeterStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF RampMeterStatus "
}
```

3.2.16.6.2 XML REPRESENTATION

```
<xs:element name="rampMeterStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="ramp-meter-status-item"
type="RampMeterStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.17 Route Class Messages

3.2.17.1 routeInventoryMsg

3.2.17.1.1 ASN.1 REPRESENTATION

```
routeInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "RouteInventoryMsg:message"
ASN-NAME "RouteInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 74 }
DEFINITION "The information content describing an owner center's traffic network
route inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "road network conditions" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 171 } -- RouteInventory }
DATA-TYPE "RouteInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF RouteInventory"
}
```

3.2.17.1.2 XML REPRESENTATION

```
<xs:element name="routeInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="route-inventory-item"
type="RouteInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

3.2.17.2 routeStatusMsg

3.2.17.2.1 ASN.1 REPRESENTATION

```
routeStatusMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "RouteStatusMsg:message"
ASN-NAME "RouteStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 75 }
DEFINITION "The information content describing an owner center's traffic network
route status."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
  "road network conditions",
```

```

        "traffic information for media"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 173 } -- RouteStatus  }
DATA-TYPE "RouteStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF RouteStatus  " }

```

3.2.17.2.2 XML REPRESENTATION

```

<xs:element name="routeStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="route-status-item" type="RouteStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.18 Section Class Messages

3.2.18.1 sectionControlRequestMsg

3.2.18.1.1 ASN.1 REPRESENTATION

```

sectionControlRequestMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "SectionControlRequestMsg:message"
  ASN-NAME "SectionControlRequestMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 76 }
  DEFINITION "The information content sent from an external center to an owner
center to request a control action for a section of intersections."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device control request",
    "emergency traffic control request",
    "emergency traffic coordination"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 176 } -- SectionControlRequest  }
  DATA-TYPE "SectionControlRequestMsg ::= SectionControlRequest  " }

```

3.2.18.1.2 XML REPRESENTATION

```

<xs:element name="sectionControlRequestMsg" type="SectionControlRequest"/>

```

3.2.18.2 sectionControlResponseMsg

3.2.18.2.1 ASN.1 REPRESENTATION

```

sectionControlResponseMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "SectionControlResponseMsg:message"
  ASN-NAME "SectionControlResponseMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 77 }

```

```

DEFINITION          "The information content sent from an owner center to an external
center to confirm acceptance (or rejection) of a control action request for a section
of intersections."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic control information"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 177 } -- SectionControlResponse    }
DATA-TYPE "SectionControlResponseMsg ::= SectionControlResponse    "    }

```

3.2.18.2.2 XML REPRESENTATION

```
<xs:element name="sectionControlResponseMsg" type="SectionControlResponse"/>
```

3.2.18.3 sectionControlScheduleMsg

3.2.18.3.1 ASN.1 REPRESENTATION

```

sectionControlScheduleMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "SectionControlScheduleMsg:message"
ASN-NAME "SectionControlScheduleMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 78 }
DEFINITION          "The information content describing an owner center's traffic signal
section control schedule for a given set of sections."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic coordination"    }
ARCHITECTURE-NAME      {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 178 } -- SectionControlSchedule    }
DATA-TYPE "    SectionControlScheduleMsg ::= SEQUENCE (SIZE(1..1024)) OF
SectionControlSchedule    "    }

```

3.2.18.3.2 XML REPRESENTATION

```

<xs:element name="sectionControlScheduleMsg">
    <xs:complexType>
        <xs:sequence maxOccurs="1024">
            <xs:element name="section-control-schedule-item"
type="SectionControlSchedule"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.18.4 sectionControlStatusRequestMsg

3.2.18.4.1 ASN.1 REPRESENTATION

```
sectionControlStatusRequestMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "SectionControlStatusRequestMsg:message"
  ASN-NAME "SectionControlStatusRequestMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 79 }
  DEFINITION "The information content necessary to request an owner center to
  provide traffic signal section control status about an external center's prior section
  control request."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "emergency traffic coordination",
    "emergency traffic control information"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 179 } -- SectionControlStatusRequest  }
  DATA-TYPE "SectionControlStatusRequestMsg ::= SectionControlStatusRequest  "  }
```

3.2.18.4.2 XML REPRESENTATION

```
<xs:element name="sectionControlStatusRequestMsg" type="SectionControlStatusRequest"/>
```

3.2.18.5 sectionPriorityQueueMsg

3.2.18.5.1 ASN.1 REPRESENTATION

```
sectionPriorityQueueMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "SectionPriorityQueueMsg:message"
  ASN-NAME "SectionPriorityQueueMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 80 }
  DEFINITION "The information content describing an owner center's section control
  priority queue for a given set of sections."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device data",
    "emergency traffic control information",
    "emergency traffic coordination"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 180 } -- SectionPriorityQueue  }
  DATA-TYPE "SectionPriorityQueueMsg ::= SectionPriorityQueue  "  }
```

3.2.18.5.2 XML REPRESENTATION

```
<xs:element name="sectionPriorityQueueMsg" type="SectionPriorityQueue"/>
```

3.2.18.6 sectionStatusMsg

3.2.18.6.1 ASN.1 REPRESENTATION

```
sectionStatusMsg ITS-MESSAGE ::= {
```

```

DESCRIPTIVE-NAME "SectionStatusMsg:message"
ASN-NAME "SectionStatusMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 81 }
DEFINITION "The information content describing an owner center's section status
for a given set of sections."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "device status",
    "emergency traffic control information" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 181 } -- SectionStatus }
DATA-TYPE "    SectionStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF SectionStatus    " }

```

3.2.18.6.2 XML REPRESENTATION

```

<xs:element name="sectionStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="section-status-item" type="SectionStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.2.18.7 sectionSignalTimingPatternInventoryMsg

3.2.18.7.1 ASN.1 REPRESENTATION

```

sectionSignalTimingPatternInventoryMsg ITS-MESSAGE ::= {
DESCRIPTIVE-NAME "SectionSignalTimingPatternInventoryMsg:message"
ASN-NAME "SectionSignalTimingPatternInventoryMsg"
ASN-OBJECT-IDENTIFIER { tmddMessages 86 }
DEFINITION "The information content describing an owner center's signal section
timing pattern inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
ARCHITECTURE-REFERENCE {
    "nil" }
ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "TMDD"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 190 } -- SectionTimingPatternInventory }
DATA-TYPE "    SectionSignalTimingPatternInventoryMsg ::= SEQUENCE (SIZE(1..512000))
OF SectionTimingPatternInventory    " }

```

3.2.18.7.2 XML REPRESENTATION

```

<xs:element name="SectionSignalTimingPatternInventoryMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="512000">
      <xs:element name="signal-section-timing-pattern-inventory-
item" type="SectionTimingPatternInventory"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```



```

        </xs:sequence>
    </xs:complexType>
</xs:element>

```

3.2.18.8 sectionSignalTimingPatternInventoryRequestMsg

3.2.18.8.1 ASN.1 REPRESENTATION

```

sectionSignalTimingPatternInventoryRequestMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "SectionSignalTimingPatternInventoryRequestMsg:message"
    ASN-NAME "SectionSignalTimingPatternInventoryRequestMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 87 }
    DEFINITION "The information content necessary to request an owner center's
    signal section timing pattern inventory."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "nil" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 191 } -- SectionSignalTimingPatternInventoryRequest }
    DATA-TYPE "SectionSignalTimingPatternInventoryRequestMsg ::=
    SectionSignalTimingPatternInventoryRequest " }

```

3.2.18.8.2 XML REPRESENTATION

```

<xs:element name="SectionSignalTimingPatternInventoryRequestMsg"
type="SectionSignalTimingPatternInventoryRequest"/>

```

3.2.19 TransportationNetwork Class Messages

3.2.19.1 trafficNetworkInformationRequestMsg

3.2.19.1.1 ASN.1 REPRESENTATION

```

trafficNetworkInformationRequestMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "TrafficNetworkInformationRequestMsg:message"
    ASN-NAME "TrafficNetworkInformationRequestMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 82 }
    DEFINITION "The information content necessary to request a inventory or status
    of traffic network nodes, links, or routes."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "nil" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 182 } -- TrafficNetworkInformationRequest }
    DATA-TYPE "TrafficNetworkInformationRequestMsg ::= TrafficNetworkInformationRequest
    " }

```

3.2.19.1.2 XML REPRESENTATION

```
<xs:element name="trafficNetworkInformationRequestMsg"
type="TrafficNetworkInformationRequest"/>
```

3.2.20 VideoSwitch Class Messages

3.2.20.1 videoSwitchControlRequestMsg

3.2.20.1.1 ASN.1 REPRESENTATION

```
videoSwitchControlRequestMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "VideoSwitchControlRequestMsg:message"
    ASN-NAME "VideoSwitchControlRequestMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 83 }
    DEFINITION "The information content necessary to request a control action of an
owner center's video switch."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device control request",
        "emergency traffic control request" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 183 } -- VideoSwitchControlRequest }
    DATA-TYPE "VideoSwitchControlRequestMsg ::= VideoSwitchControlRequest " }
```

3.2.20.1.2 XML REPRESENTATION

```
<xs:element name="videoSwitchControlRequestMsg" type="VideoSwitchControlRequest"/>
```

3.2.20.2 videoSwitchInventoryMsg

3.2.20.2.1 ASN.1 REPRESENTATION

```
videoSwitchInventoryMsg ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "VideoSwitchInventoryMsg:message"
    ASN-NAME "VideoSwitchInventoryMsg"
    ASN-OBJECT-IDENTIFIER { tmddMessages 84 }
    DEFINITION "The information content describing an owner center's video switch
inventory."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    ARCHITECTURE-REFERENCE {
        "device data" }
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "TMDD"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 185 } -- VideoSwitchInventory }
    DATA-TYPE " VideoSwitchInventoryMsg ::= SEQUENCE (SIZE(1..10240)) OF
VideoSwitchInventory " }
```

3.2.20.2.2 XML REPRESENTATION

```
<xs:element name="videoSwitchInventoryMsg">
```

```

    <xs:complexType>
      <xs:sequence maxOccurs="10240">
        <xs:element name="video-switch-inventory-item"
type="VideoSwitchInventory"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

```

3.2.20.3 videoSwitchStatusMsg

3.2.20.3.1 ASN.1 REPRESENTATION

```

videoSwitchStatusMsg ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "VideoSwitchStatusMsg:message"
  ASN-NAME "VideoSwitchStatusMsg"
  ASN-OBJECT-IDENTIFIER { tmddMessages 85 }
  DEFINITION "The information content describing an owner center's video switch
status for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  ARCHITECTURE-REFERENCE {
    "device status",
    "emergency traffic control information"  }
  ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "TMDD"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 184 } -- VideoSwitchDeviceStatus  }
  DATA-TYPE " VideoSwitchStatusMsg ::= SEQUENCE (SIZE(1..10240)) OF
VideoSwitchDeviceStatus "  }

```

3.2.20.3.2 XML REPRESENTATION

```

<xs:element name="videoSwitchStatusMsg">
  <xs:complexType>
    <xs:sequence maxOccurs="10240">
      <xs:element name="video-switch-status-item"
type="VideoSwitchDeviceStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

3.3 Data Frames

3.3.1 ArchivedData Class Data Frames

3.3.1.1 archivedDataProcessingDocumentationMetadata

3.3.1.1.1 ASN.1 REPRESENTATION

```

archivedDataProcessingDocumentationMetadata ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ArchivedDataProcessingDocumentationMetadata:frame"
  ASN-NAME "ArchivedDataProcessingDocumentationMetadata"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 1 }
  DEFINITION "The information content describing an owner center's archived data
processing documentation metadata."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions

```

```

    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 114 } -- DateTimeZone
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 79 } -- Event-description-notes-and-comments }
DATA-TYPE "ArchivedDataProcessingDocumentationMetadata ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    last-update-date DateTimeZone,
    processing-metadata-name Organization-resource-name,
    processing-metadata-version Organization-resource-identifier,
    publication-date-time DateTimeZone OPTIONAL,
    processing-method-name Organization-resource-name OPTIONAL,
    processing-method-description Event-description-notes-and-comments OPTIONAL,
    processing-method-application-rules Event-description-notes-and-comments OPTIONAL,
    processing-method-results Event-description-notes-and-comments OPTIONAL,
    ... }"
}

```

3.3.1.1.2 XML REPRESENTATION

```

<xs:complexType name="ArchivedDataProcessingDocumentationMetadata">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="last-update-date" type="DateTimeZone"/>
    <xs:element name="processing-metadata-name" type="Organization-
resource-name"/>
    <xs:element name="processing-metadata-version" type="Organization-
resource-identifier"/>
    <xs:element name="publication-date-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="processing-method-name" type="Organization-
resource-name" minOccurs="0"/>
    <xs:element name="processing-method-description" type="Event-
description-notes-and-comments" minOccurs="0"/>
    <xs:element name="processing-method-application-rules" type="Event-
description-notes-and-comments" minOccurs="0"/>
    <xs:element name="processing-method-results" type="Event-description-
notes-and-comments" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.1.2 archivedDataProcessingDocumentationMetadataRequest

3.3.1.2.1 ASN.1 REPRESENTATION

```

archivedDataProcessingDocumentationMetadataRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ArchivedDataProcessingDocumentationMetadataRequest:frame"
  ASN-NAME "ArchivedDataProcessingDocumentationMetadataRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 2 }
  DEFINITION "The information content necessary to request an owner center's
archived data processing documentation metadata."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 9 }, -- Authentication
    { tmddDataFrames 158 } -- OrganizationInformation }
}

```

```
DATA-TYPE "ArchivedDataProcessingDocumentationMetadataRequest" ::= SEQUENCE {
    authentication Authentication,
    organization-information OrganizationInformation,
    ... }
}
```

3.3.1.2.2 XML REPRESENTATION

```
<xs:complexType name="ArchivedDataProcessingDocumentationMetadataRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

3.3.1.3 archivedDataTrafficMonitoringMetadata

3.3.1.3.1 ASN.1 REPRESENTATION

```
archivedDataTrafficMonitoringMetadata ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ArchivedDataTrafficMonitoringMetadata:frame"
    ASN-NAME "ArchivedDataTrafficMonitoringMetadata"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 3 }
    DEFINITION "The information content describing an owner center's archived data
traffic monitoring metadata."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 }, -- DateTimeZone
        { tmddDataFrames 115 } -- UrlReference
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 3 }, -- Archived-data-set-type
        { tmddDataElements 79 }, -- Event-description-notes-and-comments
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 1 }, -- Archived-data-set-progress-status
        { tmddDataElements 2 }, -- Archived-data-set-maintenance-frequency
        { tmddDataElements 201 }, -- Transportation-network-identifier
        { tmddDataElements 170 }, -- Link-route-designator
        { tmddDataElements 156 }, -- Link-location-linear-reference
        { tmddDataElements 157 } -- Link-location-linear-reference-version
    }
    DATA-TYPE "ArchivedDataTrafficMonitoringMetadata" ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        data-set-type Archived-data-set-type,
        data-set-description Event-description-notes-and-comments,
        data-collection-time-period-start DateTimeZone,
        data-collection-time-period-end DateTimeZone,
        data-set-publication-date-time DateTimeZone,
        data-set-purpose Event-description-notes-and-comments OPTIONAL,
        data-set-title Organization-resource-name OPTIONAL,
        data-set-version Organization-resource-identifier OPTIONAL,
        data-set-publication-information Event-description-notes-and-comments OPTIONAL,
        data-set-progress-status Archived-data-set-progress-status OPTIONAL,
        data-set-maintenance-frequency Archived-data-set-maintenance-frequency OPTIONAL,
        data-set-url UrlReference OPTIONAL,
```

```

    data-set-roadway-network-id-list SEQUENCE (SIZE(1..20480)) OF Transportation-
network-identifier OPTIONAL,
    data-set-link-id-list SEQUENCE (SIZE(1..20480)) OF Transportation-network-
identifier OPTIONAL,
    data-set-route-designator-list SEQUENCE (SIZE(1..2048)) OF Link-route-designator
OPTIONAL,
    data-set-linear-reference-list SEQUENCE (SIZE(1..2048)) OF Link-location-linear-
reference OPTIONAL,
    data-set-linear-reference-version Link-location-linear-reference-version OPTIONAL,
    ... }"
}

```

3.3.1.3.2 XML REPRESENTATION

```

<xs:complexType name="ArchivedDataTrafficMonitoringMetadata">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="data-set-type" type="Archived-data-set-type"/>
    <xs:element name="data-set-description" type="Event-description-
notes-and-comments"/>
    <xs:element name="data-collection-time-period-start"
type="DateTimeZone"/>
    <xs:element name="data-collection-time-period-end"
type="DateTimeZone"/>
    <xs:element name="data-set-publication-date-time"
type="DateTimeZone"/>
    <xs:element name="data-set-purpose" type="Event-description-notes-
and-comments" minOccurs="0"/>
    <xs:element name="data-set-title" type="Organization-resource-name"
minOccurs="0"/>
    <xs:element name="data-set-version" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="data-set-publication-information" type="Event-
description-notes-and-comments" minOccurs="0"/>
    <xs:element name="data-set-progress-status" type="Archived-data-set-
progress-status" minOccurs="0"/>
    <xs:element name="data-set-maintenance-frequency" type="Archived-
data-set-maintenance-frequency" minOccurs="0"/>
    <xs:element name="data-set-url" type="UrlReference" minOccurs="0"/>
    <xs:element name="data-set-roadway-network-id-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="20480">
          <xs:element name="data-set-roadway-network-
id-list" type="Transportation-network-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="data-set-link-id-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="20480">
          <xs:element name="data-set-link-id-list"
type="Transportation-network-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="data-set-route-designator-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="2048">
          <xs:element name="data-set-route-designator"
type="Link-route-designator"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

        </xs:element>
        <xs:element name="data-set-linear-reference-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="2048">
                    <xs:element name="data-set-linear-reference"
type="Link-location-linear-reference"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="data-set-linear-reference-version" type="Link-
location-linear-reference-version" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.1.4 archivedDataTrafficMonitoringMetadataRequest

3.3.1.4.1 ASN.1 REPRESENTATION

```

archivedDataTrafficMonitoringMetadataRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ArchivedDataTrafficMonitoringMetadataRequest:frame"
    ASN-NAME "ArchivedDataTrafficMonitoringMetadataRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 4 }
    DEFINITION "The information content necessary to request an owner center's
archived data traffic monitoring metadata."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 9 }, -- Authentication
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 3 }, -- Archived-data-set-type
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 187 } -- Contact-mailing-address-state }
    DATA-TYPE "ArchivedDataTrafficMonitoringMetadataRequest ::= SEQUENCE {
        authentication Authentication OPTIONAL,
        organization-information OrganizationInformation,
        organization-requesting OrganizationInformation,
        filter-data-set-type Archived-data-set-type OPTIONAL,
        filter-collection-period-start DateTimeZone OPTIONAL,
        filter-collection-period-end DateTimeZone OPTIONAL,
        filter-location-county Organization-resource-name OPTIONAL,
        filter-location-state Contact-mailing-address-state OPTIONAL,
        ... }"
}

```

3.3.1.4.2 XML REPRESENTATION

```

<xs:complexType name="ArchivedDataTrafficMonitoringMetadataRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:element name="filter-data-set-type" type="Archived-data-set-type"
minOccurs="0"/>
        <xs:element name="filter-collection-period-start" type="DateTimeZone"
minOccurs="0"/>

```

```

        <xs:element name="filter-collection-period-end" type="DateTimeZone"
minOccurs="0"/>
        <xs:element name="filter-location-county" type="Organization-
resource-name" minOccurs="0"/>
        <xs:element name="filter-location-state" type="Contact-mailing-
address-state" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.2 CCTV Class Data Frames

3.3.2.1 cCCTVControlDetails

3.3.2.1.1 ASN.1 REPRESENTATION

```

cCCTVControlDetails ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "CCTVControlDetails:frame"
ASN-NAME "CCTVControlDetails"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 5 }
DEFINITION          "The control parameter associated with the command in a CCTV control
request."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { cctvPreset 1 }, -- NTCIP.PresetGotoPosition
    { cctvPosition 1 }, -- NTCIP.PositionPan
    { cctvPosition 2 }, -- NTCIP.PositionTilt
    { cctvPosition 3 }, -- NTCIP.PositionZoomLens
    { cctvPosition 5 }, -- NTCIP.PositionIrisLens
    { cctvPosition 4 }, -- NTCIP.PositionFocusLens
    { cctvSystem 1 }, -- NTCIP.SystemCameraFeatureControl
    { tmddDataElements 7 }, -- Cctv-titling-text
    { tmddDataElements 118 } -- Binary-flag }
DATA-TYPE "CCTVControlDetails ::= CHOICE {
    cctv-position-preset NTCIP.PresetGotoPosition,
    cctv-position-pan NTCIP.PositionPan,
    cctv-position-tilt NTCIP.PositionTilt,
    cctv-position-zoom-lens NTCIP.PositionZoomLens,
    cctv-position-iris-lens NTCIP.PositionIrisLens,
    cctv-position-focus-lens NTCIP.PositionFocusLens,
    cctv-environment NTCIP.SystemCameraFeatureControl,
    cctv-text Cctv-titling-text,
    cctv-lock Binary-flag,
    ... }"
}

```

3.3.2.1.2 XML REPRESENTATION

```

<xs:complexType name="CCTVControlDetails">
    <xs:choice>
        <xs:element name="cctv-position-preset"
type="ntcip:PresetGotoPosition"/>
        <xs:element name="cctv-position-pan" type="ntcip:PositionPan"/>
        <xs:element name="cctv-position-tilt" type="ntcip:PositionTilt"/>
        <xs:element name="cctv-position-zoom-lens"
type="ntcip:PositionZoomLens"/>
        <xs:element name="cctv-position-iris-lens"
type="ntcip:PositionIrisLens"/>
        <xs:element name="cctv-position-focus-lens"
type="ntcip:PositionFocusLens"/>
        <xs:element name="cctv-environment"
type="ntcip:SystemCameraFeatureControl"/>
    </xs:choice>
</xs:complexType>

```



```

        <xs:element name="cctv-text" type="Cctv-titling-text"/>
        <xs:element name="cctv-lock" type="Binary-flag"/>
    </xs:choice>
</xs:complexType>

```

3.3.2.2 cCTVControlRequest

3.3.2.2.1 ASN.1 REPRESENTATION

```

cCTVControlRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "CCTVControlRequest:frame"
    ASN-NAME "CCTVControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 6 }
    DEFINITION "The information content necessary to request a control action of an
owner center's CCTV camera."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 24 }, -- DeviceControlRequestHeader
        { tmddDataFrames 5 } -- CCTVControlDetails
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 6 } -- Cctv-request-command }
    DATA-TYPE "CCTVControlRequest ::= SEQUENCE {
        device-control-request-header DeviceControlRequestHeader,
        cctv-request-command Cctv-request-command,
        cctv-command-parameters CCTVControlDetails,
        ... }"
}

```

3.3.2.2.2 XML REPRESENTATION

```

<xs:complexType name="CCTVControlRequest">
    <xs:sequence>
        <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
        <xs:element name="cctv-request-command" type="Cctv-request-command"/>
        <xs:element name="cctv-command-parameters"
type="CCTVControlDetails"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.2.3 cCTVInventory

3.3.2.3.1 ASN.1 REPRESENTATION

```

cCTVInventory ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "CCTVInventory:frame"
    ASN-NAME "CCTVInventory"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 7 }
    DEFINITION "The information content describing an entry in the owner center's
CCTV inventory for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 30 } -- DeviceInventoryHeader
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 6 }, -- Cctv-request-command
        { tmddDataElements 5 }, -- Cctv-image-supported
    }
}

```

```

{ tmddDataElements 7 }, -- Cctv-titling-text
{ tmddDataElements 4 }, -- Cctv-camera-type
{ cctvRange 2 }, -- NTCIP.RangePanLeftLimit
{ cctvRange 3 }, -- NTCIP.RangePanRightLimit
{ cctvRange 6 }, -- NTCIP.RangeTiltUpLimit
{ cctvRange 7 }, -- NTCIP.RangeTiltDownLimit
{ cctvRange 8 }, -- NTCIP.RangeZoomLimit
{ cctvRange 9 }, -- NTCIP.RangeFocusLimit
{ cctvRange 10 }, -- NTCIP.RangeIrisLimit
{ cctvSystem 3 } -- NTCIP.SystemCameraEquipped }
DATA-TYPE "CCTVInventory" ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    cctv-requests-supported-list SEQUENCE (SIZE(1..16)) OF Cctv-request-command,
    cctv-image-list SEQUENCE (SIZE(1..8)) OF Cctv-image-supported,
    cctv-titling-text Cctv-titling-text OPTIONAL,
    cctv-camera-type Cctv-camera-type OPTIONAL,
    cctv-camera-pan-left-limit NTCIP.RangePanLeftLimit OPTIONAL,
    cctv-camera-pan-right-limit NTCIP.RangePanRightLimit OPTIONAL,
    cctv-camera-tilt-up-limit NTCIP.RangeTiltUpLimit OPTIONAL,
    cctv-camera-tilt-down-limit NTCIP.RangeTiltDownLimit OPTIONAL,
    cctv-camera-zoom-limit NTCIP.RangeZoomLimit OPTIONAL,
    cctv-camera-focus-limit NTCIP.RangeFocusLimit OPTIONAL,
    cctv-camera-iris-limit NTCIP.RangeIrisLimit OPTIONAL,
    cctv-camera-environmental NTCIP.SystemCameraEquipped OPTIONAL,
    ... }"
}

```

3.3.2.3.2 XML REPRESENTATION

```

<xs:complexType name="CCTVInventory">
  <xs:sequence>
    <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
    <xs:element name="cctv-requests-supported-list">
      <xs:complexType>
        <xs:sequence maxOccurs="16">
          <xs:element name="cctv-requests-supported"
type="Cctv-request-command"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="cctv-image-list">
      <xs:complexType>
        <xs:sequence maxOccurs="8">
          <xs:element name="cctv-image" type="Cctv-
image-supported"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="cctv-titling-text" type="Cctv-titling-text"
minOccurs="0"/>
    <xs:element name="cctv-camera-type" type="Cctv-camera-type"
minOccurs="0"/>
    <xs:element name="cctv-camera-pan-left-limit"
type="ntcip:RangePanLeftLimit" minOccurs="0"/>
    <xs:element name="cctv-camera-pan-right-limit"
type="ntcip:RangePanRightLimit" minOccurs="0"/>
    <xs:element name="cctv-camera-tilt-up-limit"
type="ntcip:RangeTiltUpLimit" minOccurs="0"/>
    <xs:element name="cctv-camera-tilt-down-limit"
type="ntcip:RangeTiltDownLimit" minOccurs="0"/>
    <xs:element name="cctv-camera-zoom-limit" type="ntcip:RangeZoomLimit"
minOccurs="0"/>

```

```

        <xs:element name="cctv-camera-focus-limit"
type="ntcip:RangeFocusLimit" minOccurs="0"/>
        <xs:element name="cctv-camera-iris-limit" type="ntcip:RangeIrisLimit"
minOccurs="0"/>
        <xs:element name="cctv-camera-environmental"
type="ntcip:SystemCameraEquipped" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.2.4 cCTVStatus

3.3.2.4.1 ASN.1 REPRESENTATION

```

cCTVStatus ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "CCTVStatus:frame"
ASN-NAME "CCTVStatus"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 8 }
DEFINITION          "The information content describing an owner center's CCTV status for
a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 35 } -- DeviceStatusHeader
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 23 }, -- Device-error
    { tmddDataElements 5 }, -- Cctv-image-supported
    { cctvPreset 1 }, -- NTCIP.PresetGotoPosition
    { cctvPosition 1 }, -- NTCIP.PositionPan
    { cctvPosition 2 }, -- NTCIP.PositionTilt
    { cctvPosition 3 }, -- NTCIP.PositionZoomLens
    { cctvPosition 5 }, -- NTCIP.PositionIrisLens
    { cctvPosition 4 }, -- NTCIP.PositionFocusLens
    { cctvSystem 2 } -- NTCIP.SystemCameraFeatureStatus }
DATA-TYPE "CCTVStatus ::= SEQUENCE {
    device-status-header DeviceStatusHeader,
    cctv-error Device-error OPTIONAL,
    cctv-image-list SEQUENCE (SIZE(1..8)) OF Cctv-image-supported OPTIONAL,
    cctv-position-preset NTCIP.PresetGotoPosition OPTIONAL,
    cctv-position-pan NTCIP.PositionPan OPTIONAL,
    cctv-position-tilt NTCIP.PositionTilt OPTIONAL,
    cctv-position-zoom-lens NTCIP.PositionZoomLens OPTIONAL,
    cctv-position-iris-lens NTCIP.PositionIrisLens OPTIONAL,
    cctv-position-focus-lens NTCIP.PositionFocusLens OPTIONAL,
    cctv-environmental-status NTCIP.SystemCameraFeatureStatus OPTIONAL,
    ... }"
}

```

3.3.2.4.2 XML REPRESENTATION

```

<xs:complexType name="CCTVStatus">
    <xs:sequence>
        <xs:element name="device-status-header" type="DeviceStatusHeader"/>
        <xs:element name="cctv-error" type="Device-error" minOccurs="0"/>
        <xs:element name="cctv-image-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="8">
                    <xs:element name="cctv-image" type="Cctv-
image-supported" minOccurs="0"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
    </xs:sequence>
</xs:complexType>

```

```

        </xs:element>
        <xs:element name="cctv-position-preset"
type="ntcip:PresetGotoPosition" minOccurs="0"/>
        <xs:element name="cctv-position-pan" type="ntcip:PositionPan"
minOccurs="0"/>
        <xs:element name="cctv-position-tilt" type="ntcip:PositionTilt"
minOccurs="0"/>
        <xs:element name="cctv-position-zoom-lens"
type="ntcip:PositionZoomLens" minOccurs="0"/>
        <xs:element name="cctv-position-iris-lens"
type="ntcip:PositionIrisLens" minOccurs="0"/>
        <xs:element name="cctv-position-focus-lens"
type="ntcip:PositionFocusLens" minOccurs="0"/>
        <xs:element name="cctv-environmental-status"
type="ntcip:SystemCameraFeatureStatus" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.3 ConnectionManagement Class Data Frames

3.3.3.1 authentication

3.3.3.1.1 ASN.1 REPRESENTATION

```

authentication ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "Authentication:frame"
    ASN-NAME "Authentication"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 9 }
    DEFINITION "The information content describing request authentication, including
user name and password."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 9 } -- Security-password }
    DATA-TYPE "Authentication ::= SEQUENCE {
        user-id Organization-resource-identifier,
        password Security-password,
        operator-id Organization-resource-identifier OPTIONAL,
        ... }"
}

```

3.3.3.1.2 XML REPRESENTATION

```

<xs:complexType name="Authentication">
    <xs:sequence>
        <xs:element name="user-id" type="Organization-resource-identifier"/>
        <xs:element name="password" type="Security-password"/>
        <xs:element name="operator-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.3.2 centerActiveVerificationRequest

3.3.3.2.1 ASN.1 REPRESENTATION

```

centerActiveVerificationRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "CenterActiveVerificationRequest:frame"
    ASN-NAME "CenterActiveVerificationRequest"
}

```

```
ASN-OBJECT-IDENTIFIER { tmddDataFrames 10 }
DEFINITION "The information content necessary to request verification of whether
an owner center is active."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 9 }, -- Authentication
    { tmddDataFrames 158 } -- OrganizationInformation }
DATA-TYPE "CenterActiveVerificationRequest ::= SEQUENCE {
    authentication Authentication,
    organization-requesting OrganizationInformation,
    ... }"
```

3.3.3.2.2 XML REPRESENTATION

```
<xs:complexType name="CenterActiveVerificationRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

3.3.3.3 centerActiveVerificationResponse

3.3.3.3.1 ASN.1 REPRESENTATION

```
centerActiveVerificationResponse ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "CenterActiveVerificationResponse:frame"
ASN-NAME "CenterActiveVerificationResponse"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 11 }
DEFINITION "The information content describing whether an owner center is
active."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 } -- OrganizationInformation }
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 193 } -- Organization-resource-name }
DATA-TYPE "CenterActiveVerificationResponse ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    center-id Organization-resource-identifier,
    center-name Organization-resource-name,
    ... }"
```

3.3.3.3.2 XML REPRESENTATION

```
<xs:complexType name="CenterActiveVerificationResponse">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
    </xs:sequence>
</xs:complexType>
```

```

        <xs:element name="center-id" type="Organization-resource-
identifier"/>
        <xs:element name="center-name" type="Organization-resource-name"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.3.4 errorReport

3.3.3.4.1 ASN.1 REPRESENTATION

```

errorReport ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ErrorReport:frame"
    ASN-NAME "ErrorReport"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 12 }
    DEFINITION "The information content describing errors in handling a single
request made from an external center to an owner center."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 } -- OrganizationInformation
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 8 }, -- Error-report-code
        { tmddDataElements 212 } -- InformationalText
    }
    DATA-TYPE "ErrorReport ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        organization-requesting OrganizationInformation,
        error-code Error-report-code,
        error-text InformationalText,
        ... }"
}

```

3.3.3.4.2 XML REPRESENTATION

```

<xs:complexType name="ErrorReport">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:element name="error-code" type="Error-report-code"/>
        <xs:element name="error-text" type="InformationalText"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.4 Detector Class Data Frames

3.3.4.1 detectorData

3.3.4.1.1 ASN.1 REPRESENTATION

```

detectorData ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DetectorData:frame"
    ASN-NAME "DetectorData"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 13 }
    DEFINITION "The information content describing an owner center's detector data
for a single station or sensor."
}

```

```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 14 } -- DetectorDataDetail }
DATA-TYPE "DetectorData ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    detector-data-list SEQUENCE (SIZE(0..65535)) OF DetectorDataDetail,
    ... }"
}

```

3.3.4.1.2 XML REPRESENTATION

```

<xs:complexType name="DetectorData">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="detector-data-list">
            <xs:complexType>
                <xs:sequence minOccurs="0" maxOccurs="65535">
                    <xs:element name="detector-data-detail"
type="DetectorDataDetail"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.4.2 detectorDataDetail

3.3.4.2.1 ASN.1 REPRESENTATION

```

detectorDataDetail ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DetectorDataDetail:frame"
    ASN-NAME "DetectorDataDetail"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 14 }
    DEFINITION "The information content describing an owner center's detector data
for a single station or sensor."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 13 }, -- Detector-vehicle-count
        { tmddDataElements 11 }, -- Detector-occupancy
        { tmddDataElements 147 }, -- Link-data-type
        { tmddDataElements 15 }, -- Detector-vehicle-speed
        { tmddDataElements 14 }, -- Detector-vehicle-queue-length
        { tmddDataElements 16 }, -- Detector-vehicle-stops
        { tmddDataElements 28 } -- Device-operational-status }
    DATA-TYPE "DetectorDataDetail ::= SEQUENCE {
        station-id Organization-resource-identifier OPTIONAL,
        detector-id Organization-resource-identifier,
        detection-time-stamp DateTimeZone,
        vehicle-count Detector-vehicle-count OPTIONAL,

```

```

vehicle-occupancy Detector-occupancy OPTIONAL,
start-time DateTimeZone OPTIONAL,
end-time DateTimeZone OPTIONAL,
detector-data-type Link-data-type OPTIONAL,
vehicle-speed Detector-vehicle-speed OPTIONAL,
queue-length Detector-vehicle-queue-length OPTIONAL,
vehicle-stops Detector-vehicle-stops OPTIONAL,
vehicle-count-bin1 Detector-vehicle-count OPTIONAL,
vehicle-count-bin2 Detector-vehicle-count OPTIONAL,
vehicle-count-bin3 Detector-vehicle-count OPTIONAL,
vehicle-count-bin4 Detector-vehicle-count OPTIONAL,
vehicle-count-bin5 Detector-vehicle-count OPTIONAL,
vehicle-count-bin6 Detector-vehicle-count OPTIONAL,
vehicle-count-bin7 Detector-vehicle-count OPTIONAL,
detector-status Device-operational-status OPTIONAL,
... }"
}

```

3.3.4.2.2 XML REPRESENTATION

```

<xs:complexType name="DetectorDataDetail">
  <xs:sequence>
    <xs:element name="station-id" type="Organization-resource-identifier"
minOccurs="0"/>
    <xs:element name="detector-id" type="Organization-resource-
identifier"/>
    <xs:element name="detection-time-stamp" type="DateTimeZone"/>
    <xs:element name="vehicle-count" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="vehicle-occupancy" type="Detector-occupancy"
minOccurs="0"/>
    <xs:element name="start-time" type="DateTimeZone" minOccurs="0"/>
    <xs:element name="end-time" type="DateTimeZone" minOccurs="0"/>
    <xs:element name="detector-data-type" type="Link-data-type"
minOccurs="0"/>
    <xs:element name="vehicle-speed" type="Detector-vehicle-speed"
minOccurs="0"/>
    <xs:element name="queue-length" type="Detector-vehicle-queue-length"
minOccurs="0"/>
    <xs:element name="vehicle-stops" type="Detector-vehicle-stops"
minOccurs="0"/>
    <xs:element name="vehicle-count-bin1" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="vehicle-count-bin2" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="vehicle-count-bin3" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="vehicle-count-bin4" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="vehicle-count-bin5" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="vehicle-count-bin6" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="vehicle-count-bin7" type="Detector-vehicle-count"
minOccurs="0"/>
    <xs:element name="detector-status" type="Device-operational-status"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.4.3 detectorDataRequest

3.3.4.3.1 ASN.1 REPRESENTATION


```

detectorDataRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorDataRequest:frame"
  ASN-NAME "DetectorDataRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 15 }
  DEFINITION      "The information content necessary to request an owner center's
  detector data for a given set of stations and/or sensors.  If the optional detector-
  data-type is not sent as part of the request, the default device-sensor-data-type is
  requested, as agreed by the external center and the owner center (outside the scope of
  this standard)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
 DATA-CONCEPT-TYPE data-frame
 STANDARD "TMDD"
 REFERENCED-DATA-FRAMES {
 { [tmddDataFrames 28](#) } -- DeviceInformationRequest
 }
 REFERENCED-DATA-ELEMENTS {
 { [tmddDataElements 192](#) }, -- Organization-resource-identifier
 { [tmddDataElements 31](#) } -- Device-sensor-data-type }
 DATA-TYPE "DetectorDataRequest ::= SEQUENCE {
 device-information-request-header DeviceInformationRequest,
 detector-station-id Organization-resource-identifier OPTIONAL,
 detector-data-type Device-sensor-data-type OPTIONAL,
 ... }"

3.3.4.3.2 XML REPRESENTATION

```

<xs:complexType name="DetectorDataRequest">
  <xs:sequence>
    <xs:element name="device-information-request-header"
type="DeviceInformationRequest"/>
    <xs:element name="detector-station-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="detector-data-type" type="Device-sensor-data-type"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.4.4 detectorInventory

3.3.4.4.1 ASN.1 REPRESENTATION

```

detectorInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorInventory:frame"
  ASN-NAME "DetectorInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 16 }
  DEFINITION      "The information content describing an entry in the owner center's
  detector/station inventory for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 }, -- DeviceInventoryHeader
    { tmddDataFrames 17 } -- DetectorInventoryDetails }
  DATA-TYPE "DetectorInventory ::= SEQUENCE {
    detector-station-inventory-header DeviceInventoryHeader OPTIONAL,
    detector-inventory-list SEQUENCE (SIZE(0..65535)) OF DetectorInventoryDetails,
    ... }"
```

3.3.4.4.2 XML REPRESENTATION

```
<xs:complexType name="DetectorInventory">
  <xs:sequence>
    <xs:element name="detector-station-inventory-header"
type="DeviceInventoryHeader" minOccurs="0"/>
    <xs:element name="detector-inventory-list">
      <xs:complexType>
        <xs:sequence minOccurs="0" maxOccurs="65535">
          <xs:element name="detector"
type="DetectorInventoryDetails"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.4.5 detectorInventoryDetails

3.3.4.5.1 ASN.1 REPRESENTATION

```
detectorInventoryDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorInventoryDetails:frame"
  ASN-NAME "DetectorInventoryDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 17 }
  DEFINITION "The information content describing an entry in an owner center's
detector/station inventory."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 } -- DeviceInventoryHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 12 }, -- Detector-type
    { tmddDataElements 152 }, -- Link-lane-number
    { tmddDataElements 118 }, -- Binary-flag
    { tmddDataElements 10 } -- Detector-bin-length }
  DATA-TYPE "DetectorInventoryDetails ::= SEQUENCE {
    detector-inventory-header DeviceInventoryHeader,
    detector-type Detector-type,
    detection-lanes SEQUENCE (SIZE(1..64)) OF Link-lane-number OPTIONAL,
    is-detector-speed-trap-flag Binary-flag OPTIONAL,
    vehicle-classification-bin1 Detector-bin-length OPTIONAL,
    vehicle-classification-bin2 Detector-bin-length OPTIONAL,
    vehicle-classification-bin3 Detector-bin-length OPTIONAL,
    vehicle-classification-bin4 Detector-bin-length OPTIONAL,
    vehicle-classification-bin5 Detector-bin-length OPTIONAL,
    vehicle-classification-bin6 Detector-bin-length OPTIONAL,
    ... }"
```

3.3.4.5.2 XML REPRESENTATION

```
<xs:complexType name="DetectorInventoryDetails">
  <xs:sequence>
    <xs:element name="detector-inventory-header"
type="DeviceInventoryHeader"/>
    <xs:element name="detector-type" type="Detector-type"/>
    <xs:element name="detection-lanes" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="lanes" type="Link-lane-
number"/>
```

```

        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="is-detector-speed-trap-flag" type="Binary-flag"
minOccurs="0"/>
    <xs:element name="vehicle-classification-bin1" type="Detector-bin-
length" minOccurs="0"/>
    <xs:element name="vehicle-classification-bin2" type="Detector-bin-
length" minOccurs="0"/>
    <xs:element name="vehicle-classification-bin3" type="Detector-bin-
length" minOccurs="0"/>
    <xs:element name="vehicle-classification-bin4" type="Detector-bin-
length" minOccurs="0"/>
    <xs:element name="vehicle-classification-bin5" type="Detector-bin-
length" minOccurs="0"/>
    <xs:element name="vehicle-classification-bin6" type="Detector-bin-
length" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.4.6 detectorMaintenanceHistory

3.3.4.6.1 ASN.1 REPRESENTATION

```

detectorMaintenanceHistory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorMaintenanceHistory:frame"
  ASN-NAME "DetectorMaintenanceHistory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 18 }
  DEFINITION "The information content describing an owner center's detector
maintenance history for a list of detectors or detector stations, including
organization information."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 19 } -- DetectorMaintenanceHistoryDetail }
  DATA-TYPE "DetectorMaintenanceHistory ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    detector-history-list SEQUENCE (SIZE(0..65535)) OF
    DetectorMaintenanceHistoryDetail,
    ... }"
}

```

3.3.4.6.2 XML REPRESENTATION

```

<xs:complexType name="DetectorMaintenanceHistory">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="detector-history-list">
      <xs:complexType>
        <xs:sequence minOccurs="0" maxOccurs="65535">
          <xs:element name="detector"
type="DetectorMaintenanceHistoryDetail"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

```
</xs:sequence>
</xs:complexType>
```

3.3.4.7 detectorMaintenanceHistoryDetail

3.3.4.7.1 ASN.1 REPRESENTATION

```
detectorMaintenanceHistoryDetail ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorMaintenanceHistoryDetail:frame"
  ASN-NAME "DetectorMaintenanceHistoryDetail"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 19 }
  DEFINITION          "The information content describing an owner center's detector
  maintenance history for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 12 }, -- Detector-type
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 79 } -- Event-description-notes-and-comments  }
  DATA-TYPE "DetectorMaintenanceHistoryDetail ::= SEQUENCE {
    station-id Organization-resource-identifier OPTIONAL,
    detector-id Organization-resource-identifier,
    detector-type Detector-type OPTIONAL,
    detector-installation-date DateTimeZone OPTIONAL,
    detector-calibration-date DateTimeZone OPTIONAL,
    detector-calibration-method Organization-resource-name OPTIONAL,
    detector-last-operational-date DateTimeZone OPTIONAL,
    detector-last-non-operational-date DateTimeZone OPTIONAL,
    detector-repair-description Event-description-notes-and-comments OPTIONAL,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
```

3.3.4.7.2 XML REPRESENTATION

```
<xs:complexType name="DetectorMaintenanceHistoryDetail">
  <xs:sequence>
    <xs:element name="station-id" type="Organization-resource-identifier"
minOccurs="0"/>
    <xs:element name="detector-id" type="Organization-resource-
identifier"/>
    <xs:element name="detector-type" type="Detector-type" minOccurs="0"/>
    <xs:element name="detector-installation-date" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="detector-calibration-date" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="detector-calibration-method" type="Organization-
resource-name" minOccurs="0"/>
    <xs:element name="detector-last-operational-date" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="detector-last-non-operational-date"
type="DateTimeZone" minOccurs="0"/>
    <xs:element name="detector-repair-description" type="Event-
description-notes-and-comments" minOccurs="0"/>
    <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
```

</xs:complexType>

3.3.4.8 detectorMaintenanceHistoryRequest

3.3.4.8.1 ASN.1 REPRESENTATION

```
detectorMaintenanceHistoryRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorMaintenanceHistoryRequest:frame"
  ASN-NAME "DetectorMaintenanceHistoryRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 20 }
  DEFINITION          "The information content necessary to request an owner center's
  detector maintenance history for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 28 } -- DeviceInformationRequest
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 } -- Organization-resource-identifier }
  DATA-TYPE "DetectorMaintenanceHistoryRequest ::= SEQUENCE {
    device-information-request-header DeviceInformationRequest,
    detector-station-id Organization-resource-identifier OPTIONAL,
    ... }"
```

3.3.4.8.2 XML REPRESENTATION

```
<xs:complexType name="DetectorMaintenanceHistoryRequest">
  <xs:sequence>
    <xs:element name="device-information-request-header"
type="DeviceInformationRequest"/>
    <xs:element name="detector-station-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.4.9 detectorStatus

3.3.4.9.1 ASN.1 REPRESENTATION

```
detectorStatus ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorStatus:frame"
  ASN-NAME "DetectorStatus"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 21 }
  DEFINITION          "The information content describing an owner center's
  detector/station status for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 35 }, -- DeviceStatusHeader
    { tmddDataFrames 22 } -- DetectorStatusDetails }
  DATA-TYPE "DetectorStatus ::= SEQUENCE {
    detector-station-status-header DeviceStatusHeader OPTIONAL,
    detector-status-list SEQUENCE (SIZE(0..65535)) OF DetectorStatusDetails,
    ... }"
```

3.3.4.9.2 XML REPRESENTATION

```
<xs:complexType name="DetectorStatus">
  <xs:sequence>
    <xs:element name="detector-station-status-header"
type="DeviceStatusHeader" minOccurs="0"/>
    <xs:element name="detector-status-list">
      <xs:complexType>
        <xs:sequence minOccurs="0" maxOccurs="65535">
          <xs:element name="detector"
type="DetectorStatusDetails"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.4.10 detectorStatusDetails

3.3.4.10.1 ASN.1 REPRESENTATION

```
detectorStatusDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DetectorStatusDetails:frame"
  ASN-NAME "DetectorStatusDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 22 }
  DEFINITION "The information content describing an owner center's detector status
for a single station or sensor."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 35 } -- DeviceStatusHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 152 }, -- Link-lane-number
    { tmddDataElements 150 }, -- Link-direction
    { outputConditioningEntry 1 } -- NTCIP.SensorZoneOutputMode }
  DATA-TYPE "DetectorStatusDetails ::= SEQUENCE {
    detector-status-header DeviceStatusHeader,
    detector-lane-number Link-lane-number OPTIONAL,
    lane-direction Link-direction OPTIONAL,
    detector-outputmode NTCIP.SensorZoneOutputMode OPTIONAL,
    ... }"
}
```

3.3.4.10.2 XML REPRESENTATION

```
<xs:complexType name="DetectorStatusDetails">
  <xs:sequence>
    <xs:element name="detector-status-header" type="DeviceStatusHeader"/>
    <xs:element name="detector-lane-number" type="Link-lane-number"
minOccurs="0"/>
    <xs:element name="lane-direction" type="Link-direction"
minOccurs="0"/>
    <xs:element name="detector-outputmode"
type="ntcip:SensorZoneOutputMode" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.5 Device Class Data Frames

3.3.5.1 deviceCancelControlRequest

3.3.5.1.1 ASN.1 REPRESENTATION

```
deviceCancelControlRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceCancelControlRequest:frame"
    ASN-NAME "DeviceCancelControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 23 }
    DEFINITION "The information content necessary to request an owner center to
    cancel an external center's prior control request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 9 }, -- Authentication
        { tmddDataFrames 158 } -- OrganizationInformation
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 } -- Organization-resource-identifier }
    DATA-TYPE "DeviceCancelControlRequest ::= SEQUENCE {
        authentication Authentication,
        organization-requesting OrganizationInformation,
        device-id Organization-resource-identifier,
        request-id Organization-resource-identifier,
        ... }"
}
```

3.3.5.1.2 XML REPRESENTATION

```
<xs:complexType name="DeviceCancelControlRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="request-id" type="Organization-resource-
identifier"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

3.3.5.2 deviceControlRequestHeader

3.3.5.2.1 ASN.1 REPRESENTATION

```
deviceControlRequestHeader ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceControlRequestHeader:frame"
    ASN-NAME "DeviceControlRequestHeader"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 24 }
    DEFINITION "The information content header included with all device control."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 9 }, -- Authentication
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 20 } -- Device-command-request-priority }
    DATA-TYPE "DeviceControlRequestHeader ::= SEQUENCE {
        authentication Authentication,
        organization-requesting OrganizationInformation,
```

```

device-id Organization-resource-identifier,
request-id Organization-resource-identifier,
event-id Organization-resource-identifier OPTIONAL,
response-plan-id Organization-resource-identifier OPTIONAL,
command-request-priority Device-command-request-priority OPTIONAL,
command-start-time DateTimeZone OPTIONAL,
command-end-time DateTimeZone OPTIONAL,
command-request-time DateTimeZone OPTIONAL,
... }"
}

```

3.3.5.2.2 XML REPRESENTATION

```

<xs:complexType name="DeviceControlRequestHeader">
  <xs:sequence>
    <xs:element name="authentication" type="Authentication"/>
    <xs:element name="organization-requesting"
type="OrganizationInformation"/>
    <xs:element name="device-id" type="Organization-resource-
identifier"/>
    <xs:element name="request-id" type="Organization-resource-
identifier"/>
    <xs:element name="event-id" type="Organization-resource-identifier"
minOccurs="0"/>
    <xs:element name="response-plan-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="command-request-priority" type="Device-command-
request-priority" minOccurs="0"/>
    <xs:element name="command-start-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="command-end-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="command-request-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.5.3 deviceControlResponse

3.3.5.3.1 ASN.1 REPRESENTATION

```

deviceControlResponse ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DeviceControlResponse:frame"
  ASN-NAME "DeviceControlResponse"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 25 }
  DEFINITION "The information content sent from an owner center to an external
center to confirm acceptance (or rejection) of device control."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 18 } -- Device-acknowledge-control }
  DATA-TYPE "DeviceControlResponse ::= SEQUENCE {
    organization-information OrganizationInformation,
    device-id Organization-resource-identifier,
    request-id Organization-resource-identifier,
    operator-id Organization-resource-identifier OPTIONAL,

```



```

        operator-lock-id Organization-resource-identifier OPTIONAL,
        request-status Device-acknowledge-control,
        operator-last-revised DateTimeZone OPTIONAL,
        ... }"
    }

```

3.3.5.3.2 XML REPRESENTATION

```

<xs:complexType name="DeviceControlResponse">
    <xs:sequence>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="request-id" type="Organization-resource-
identifier"/>
        <xs:element name="operator-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="operator-lock-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="request-status" type="Device-acknowledge-control"/>
        <xs:element name="operator-last-revised" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.5.4 deviceControlScheduleHeader

3.3.5.4.1 ASN.1 REPRESENTATION

```

deviceControlScheduleHeader ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceControlScheduleHeader:frame"
    ASN-NAME "DeviceControlScheduleHeader"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 26 }
    DEFINITION "The information content header included with all device control
schedules."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { timeBaseScheduleEntry 1 }, -- NTCIP.TimeBaseScheduleNumber
        { timeBaseScheduleEntry 2 }, -- NTCIP.TimeBaseScheduleMonth
        { timeBaseScheduleEntry 3 }, -- NTCIP.TimeBaseScheduleDay
        { timeBaseScheduleEntry 4 }, -- NTCIP.TimeBaseScheduleDate
        { timeBaseScheduleEntry 5 }, -- NTCIP.TimeBaseScheduleDayPlan
        { timeBaseDayPlanEntry 3 }, -- NTCIP.DayPlanHour
        { timeBaseDayPlanEntry 4 } -- NTCIP.DayPlanMinute }
    DATA-TYPE "DeviceControlScheduleHeader ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        device-id Organization-resource-identifier,
        time-base-schedule-number NTCIP.TimeBaseScheduleNumber,
        time-base-schedule-month NTCIP.TimeBaseScheduleMonth,
        time-base-schedule-day NTCIP.TimeBaseScheduleDay,
        time-base-schedule-date NTCIP.TimeBaseScheduleDate,
        time-base-schedule-day-plan NTCIP.TimeBaseScheduleDayPlan,

```

```

    day-plan-hour NTCIP.DayPlanHour,
    day-plan-minute NTCIP.DayPlanMinute,
    last-update-time DateTimeZone,
    ... }"
}

```

3.3.5.4.2 XML REPRESENTATION

```

<xs:complexType name="DeviceControlScheduleHeader">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="device-id" type="Organization-resource-
identifier"/>
    <xs:element name="time-base-schedule-number"
type="ntcip:TimeBaseScheduleNumber"/>
    <xs:element name="time-base-schedule-month"
type="ntcip:TimeBaseScheduleMonth"/>
    <xs:element name="time-base-schedule-day"
type="ntcip:TimeBaseScheduleDay"/>
    <xs:element name="time-base-schedule-date"
type="ntcip:TimeBaseScheduleDate"/>
    <xs:element name="time-base-schedule-day-plan"
type="ntcip:TimeBaseScheduleDayPlan"/>
    <xs:element name="day-plan-hour" type="ntcip:DayPlanHour"/>
    <xs:element name="day-plan-minute" type="ntcip:DayPlanMinute"/>
    <xs:element name="last-update-time" type="DateTimeZone"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.5.5 deviceControlStatusRequest

3.3.5.5.1 ASN.1 REPRESENTATION

```

deviceControlStatusRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DeviceControlStatusRequest:frame"
  ASN-NAME "DeviceControlStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 27 }
  DEFINITION "The information content necessary to request an owner center to
  provide status about an external center's prior control request."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 9 }, -- Authentication
    { tmddDataFrames 158 } -- OrganizationInformation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 } -- Organization-resource-identifier }
  DATA-TYPE "DeviceControlStatusRequest ::= SEQUENCE {
    authentication Authentication OPTIONAL,
    organization-requesting OrganizationInformation,
    device-id Organization-resource-identifier,
    request-id Organization-resource-identifier,
    ... }"
}

```

3.3.5.5.2 XML REPRESENTATION

```

<xs:complexType name="DeviceControlStatusRequest">

```

```

        <xs:sequence>
            <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
            <xs:element name="organization-requesting"
type="OrganizationInformation"/>
            <xs:element name="device-id" type="Organization-resource-
identifier"/>
            <xs:element name="request-id" type="Organization-resource-
identifier"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>

```

3.3.5.6 deviceInformationRequest

3.3.5.6.1 ASN.1 REPRESENTATION

```

deviceInformationRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceInformationRequest:frame"
    ASN-NAME "DeviceInformationRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 28 }
    DEFINITION "The information content necessary to request an owner center to
provide inventory, status, schedule, or timing plan information for a given set of
devices."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 9 }, -- Authentication
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 29 } -- DeviceInformationRequestFilter
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 32 }, -- Device-type
        { tmddDataElements 24 } -- Device-information-type }
    DATA-TYPE "DeviceInformationRequest ::= SEQUENCE {
        authentication Authentication OPTIONAL,
        organization-information OrganizationInformation,
        organization-requesting OrganizationInformation OPTIONAL,
        device-type Device-type,
        device-information-type Device-information-type,
        device-filter DeviceInformationRequestFilter OPTIONAL,
        ... }"
}

```

3.3.5.6.2 XML REPRESENTATION

```

<xs:complexType name="DeviceInformationRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation" minOccurs="0"/>
        <xs:element name="device-type" type="Device-type"/>
        <xs:element name="device-information-type" type="Device-information-
type"/>
        <xs:element name="device-filter"
type="DeviceInformationRequestFilter" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.5.7 deviceInformationRequestFilter

3.3.5.7.1 ASN.1 REPRESENTATION

```
deviceInformationRequestFilter ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceInformationRequestFilter:frame"
    ASN-NAME "DeviceInformationRequestFilter"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 29 }
    DEFINITION "The information content describing filters that can be applied to a
    device information request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 189 } -- LinearReferenceRange
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 201 }, -- Transportation-network-identifier
        { tmddDataElements 170 } -- Link-route-designator }
    DATA-TYPE "DeviceInformationRequestFilter ::= SEQUENCE {
        device-id-list SEQUENCE (SIZE(1..10000)) OF Organization-resource-identifier
    OPTIONAL,
        network-id-list SEQUENCE (SIZE(1..255)) OF Transportation-network-identifier
    OPTIONAL,
        link-id-list SEQUENCE (SIZE(1..255)) OF Transportation-network-identifier
    OPTIONAL,
        link-designator-list SEQUENCE (SIZE(1..255)) OF Link-route-designator OPTIONAL,
        linear-reference LinearReferenceRange OPTIONAL,
        section-id-list SEQUENCE (SIZE(1..10240)) OF Organization-resource-identifier
    OPTIONAL,
        pattern-id-list SEQUENCE (SIZE(1..256)) OF Organization-resource-identifier
    OPTIONAL,
        center-id-list SEQUENCE (SIZE(1..256)) OF Organization-resource-identifier
    OPTIONAL,
        ... }"
```

3.3.5.7.2 XML REPRESENTATION

```
<xs:complexType name="DeviceInformationRequestFilter">
    <xs:sequence>
        <xs:element name="device-id-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="10000">
                    <xs:element name="device-id"
type="Organization-resource-identifier"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="network-id-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="255">
                    <xs:element name="network-id"
type="Transportation-network-identifier"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="link-id-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="255">
                    <xs:element name="link"
type="Transportation-network-identifier"/>
                </xs:sequence>
```

```

        </xs:complexType>
    </xs:element>
    <xs:element name="link-designator-list" minOccurs="0">
        <xs:complexType>
            <xs:sequence maxOccurs="255">
                <xs:element name="link-designator"
type="Link-route-designator"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="linear-reference" type="LinearReferenceRange"
minOccurs="0"/>
    <xs:element name="section-id-list" minOccurs="0">
        <xs:complexType>
            <xs:sequence maxOccurs="10240">
                <xs:element name="section-id"
type="Organization-resource-identifier"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="pattern-id-list" minOccurs="0">
        <xs:complexType>
            <xs:sequence maxOccurs="256">
                <xs:element name="pattern-id"
type="Organization-resource-identifier"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="center-id-list" minOccurs="0">
        <xs:complexType>
            <xs:sequence maxOccurs="256">
                <xs:element name="center-id"
type="Organization-resource-identifier"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

3.3.5.8 deviceInventoryHeader

3.3.5.8.1 ASN.1 REPRESENTATION

```

deviceInventoryHeader ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceInventoryHeader:frame"
    ASN-NAME "DeviceInventoryHeader"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 30 }
    DEFINITION "The information content header included with all device
inventories."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { lrmsDataFrames geoLocation\(1\) }, -- LRMS.GeoLocation
        { tmddDataFrames 115 }, -- UrlReference
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 22 }, -- Device-control-type
        { tmddDataElements 201 }, -- Transportation-network-identifier
    }
}

```

```

{ tmddDataElements 203 }, -- Transportation-network-name
{ tmddDataElements 150 }, -- Link-direction
{ tmddDataElements 156 }, -- Link-location-linear-reference
{ tmddDataElements 157 }, -- Link-location-linear-reference-version
{ tmddDataElements 170 } -- Link-route-designator }
DATA-TYPE "DeviceInventoryHeader" ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    device-id Organization-resource-identifier,
    device-location LRMS.GeoLocation,
    device-name Organization-resource-name,
    device-description Organization-resource-name OPTIONAL,
    device-control-type Device-control-type OPTIONAL,
    controller-description Organization-resource-name OPTIONAL,
    network-id Transportation-network-identifier OPTIONAL,
    node-id Transportation-network-identifier OPTIONAL,
    node-name Transportation-network-name OPTIONAL,
    link-id Transportation-network-identifier OPTIONAL,
    link-name Transportation-network-name OPTIONAL,
    link-direction Link-direction OPTIONAL,
    linear-reference Link-location-linear-reference OPTIONAL,
    linear-reference-version Link-location-linear-reference-version OPTIONAL,
    route-designator Link-route-designator OPTIONAL,
    device-url UrlReference OPTIONAL,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.5.8.2 XML REPRESENTATION

```

<xs:complexType name="DeviceInventoryHeader">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="device-id" type="Organization-resource-
identifier"/>
    <xs:element name="device-location" type="lrms:GeoLocation"/>
    <xs:element name="device-name" type="Organization-resource-name"/>
    <xs:element name="device-description" type="Organization-resource-
name" minOccurs="0"/>
    <xs:element name="device-control-type" type="Device-control-type"
minOccurs="0"/>
    <xs:element name="controller-description" type="Organization-
resource-name" minOccurs="0"/>
    <xs:element name="network-id" type="Transportation-network-
identifier" minOccurs="0"/>
    <xs:element name="node-id" type="Transportation-network-identifier"
minOccurs="0"/>
    <xs:element name="node-name" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="link-id" type="Transportation-network-identifier"
minOccurs="0"/>
    <xs:element name="link-name" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="link-direction" type="Link-direction"
minOccurs="0"/>
    <xs:element name="linear-reference" type="Link-location-linear-
reference" minOccurs="0"/>
    <xs:element name="linear-reference-version" type="Link-location-
linear-reference-version" minOccurs="0"/>
    <xs:element name="route-designator" type="Link-route-designator"
minOccurs="0"/>
    <xs:element name="device-url" type="UrlReference" minOccurs="0"/>

```

```

        <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.5.9 devicePriorityQueueHeader

3.3.5.9.1 ASN.1 REPRESENTATION

```

devicePriorityQueueHeader ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DevicePriorityQueueHeader:frame"
    ASN-NAME "DevicePriorityQueueHeader"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 31 }
    DEFINITION "The information content header included with all device priority
    queues."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 32 } -- DevicePriorityQueueItem
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 32 }, -- Device-type
        { tmddDataElements 20 } -- Device-command-request-priority }
    DATA-TYPE "DevicePriorityQueueHeader ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        device-id Organization-resource-identifier,
        device-type Device-type,
        current-device-priority Device-command-request-priority,
        device-priority-queue-list SEQUENCE (SIZE(1..8)) OF DevicePriorityQueueItem,
        ... }"
}

```

3.3.5.9.2 XML REPRESENTATION

```

<xs:complexType name="DevicePriorityQueueHeader">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="device-type" type="Device-type"/>
        <xs:element name="current-device-priority" type="Device-command-
request-priority"/>
        <xs:element name="device-priority-queue-list">
            <xs:complexType>
                <xs:sequence maxOccurs="8">
                    <xs:element name="device-priority-queue-
item" type="DevicePriorityQueueItem"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.5.10 devicePriorityQueueItem

3.3.5.10.1 ASN.1 REPRESENTATION

```

devicePriorityQueueItem ITS-DATA-FRAME ::= {

```

```

DESCRIPTIVE-NAME "DevicePriorityQueueItem:frame"
ASN-NAME "DevicePriorityQueueItem"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 32 }
DEFINITION       "The information content of a single item in a device priority queue
list."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 114 } -- DateTimeZone
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 20 }, -- Device-command-request-priority
    { tmddDataElements 192 } -- Organization-resource-identifier }
DATA-TYPE "DevicePriorityQueueItem ::= SEQUENCE {
    organization-requesting OrganizationInformation,
    command-request-priority Device-command-request-priority,
    operator-id Organization-resource-identifier OPTIONAL,
    request-id Organization-resource-identifier OPTIONAL,
    event-id Organization-resource-identifier OPTIONAL,
    response-plan-id Organization-resource-identifier OPTIONAL,
    command-start-time DateTimeZone OPTIONAL,
    command-end-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.5.10.2 XML REPRESENTATION

```

<xs:complexType name="DevicePriorityQueueItem">
  <xs:sequence>
    <xs:element name="organization-requesting"
type="OrganizationInformation"/>
    <xs:element name="command-request-priority" type="Device-command-
request-priority"/>
    <xs:element name="operator-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="request-id" type="Organization-resource-identifier"
minOccurs="0"/>
    <xs:element name="event-id" type="Organization-resource-identifier"
minOccurs="0"/>
    <xs:element name="response-plan-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="command-start-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="command-end-time" type="DateTimeZone"
minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.5.11 devicePriorityQueueRequest

3.3.5.11.1 ASN.1 REPRESENTATION

```

devicePriorityQueueRequest ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "DevicePriorityQueueRequest:frame"
ASN-NAME "DevicePriorityQueueRequest"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 33 }
DEFINITION       "The information content necessary to request an owner center to
provide a control priority queue list for a given set of devices."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"

```



```

REFERENCED-DATA-FRAMES {
    { tmddDataFrames 9 }, -- Authentication
    { tmddDataFrames 158 } -- OrganizationInformation
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 } -- Organization-resource-identifier }
DATA-TYPE "DevicePriorityQueueRequest ::= SEQUENCE {
    authentication Authentication OPTIONAL,
    organization-requesting OrganizationInformation,
    device-id-list SEQUENCE (SIZE(1..10000)) OF Organization-resource-identifier,
    ... }"
}

```

3.3.5.11.2 XML REPRESENTATION

```

<xs:complexType name="DevicePriorityQueueRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:element name="device-id-list">
            <xs:complexType>
                <xs:sequence maxOccurs="10000">
                    <xs:element name="device-id"
type="Organization-resource-identifier"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.5.12 deviceReference

3.3.5.12.1 ASN.1 REPRESENTATION

```

deviceReference ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceReference:frame"
    ASN-NAME "DeviceReference"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 34 }
    DEFINITION "The information content describing a reference to a device including
type and identifier."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 32 } -- Device-type }
    DATA-TYPE "DeviceReference ::= SEQUENCE {
        device-id Organization-resource-identifier,
        device-type Device-type OPTIONAL,
        ... }"
}

```

3.3.5.12.2 XML REPRESENTATION

```

<xs:complexType name="DeviceReference">
    <xs:sequence>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="device-type" type="Device-type" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

```

        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.5.13 deviceStatusHeader

3.3.5.13.1 ASN.1 REPRESENTATION

```

deviceStatusHeader ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DeviceStatusHeader:frame"
    ASN-NAME "DeviceStatusHeader"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 35 }
    DEFINITION "The information content header included with all device status."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 28 }, -- Device-operational-status
        { tmddDataElements 21 } -- Device-communications-status }
    DATA-TYPE "DeviceStatusHeader ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        device-id Organization-resource-identifier,
        device-status Device-operational-status,
        center-id Organization-resource-identifier OPTIONAL,
        device-comm-status Device-communications-status OPTIONAL,
        operator-id Organization-resource-identifier OPTIONAL,
        event-id Organization-resource-identifier OPTIONAL,
        response-plan-id Organization-resource-identifier OPTIONAL,
        last-comm-time DateTimeZone OPTIONAL,
        ... }"
}

```

3.3.5.13.2 XML REPRESENTATION

```

<xs:complexType name="DeviceStatusHeader">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="device-status" type="Device-operational-status"/>
        <xs:element name="center-id" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="device-comm-status" type="Device-communications-
status" minOccurs="0"/>
        <xs:element name="operator-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="event-id" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="response-plan-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="last-comm-time" type="DateTimeZone" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.6 DMS Class Data Frames

3.3.6.1 dMSCharacterTableEntry

3.3.6.1.1 ASN.1 REPRESENTATION

```
dMSCharacterTableEntry ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DMSCharacterTableEntry:frame"
  ASN-NAME "DMSCharacterTableEntry"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 36 }
  DEFINITION          "The information content describing an entry in the dynamic message
  sign character table."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { characterEntry 1 }, -- NTCIP.CharacterNumber
    { characterEntry 2 }, -- NTCIP.CharacterWidth
    { characterEntry 3 } -- NTCIP.CharacterBitmap }
  DATA-TYPE "DMSCharacterTableEntry ::= SEQUENCE {
    character-number NTCIP.CharacterNumber,
    character-width NTCIP.CharacterWidth,
    character-bitmap NTCIP.CharacterBitmap,
    ... }"
}
```

3.3.6.1.2 XML REPRESENTATION

```
<xs:complexType name="DMSCharacterTableEntry">
  <xs:sequence>
    <xs:element name="character-number" type="ntcip:CharacterNumber"/>
    <xs:element name="character-width" type="ntcip:CharacterWidth"/>
    <xs:element name="character-bitmap" type="ntcip:CharacterBitmap"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.6.2 dMSControlDetails

3.3.6.2.1 ASN.1 REPRESENTATION

```
dMSControlDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DMSControlDetails:frame"
  ASN-NAME "DMSControlDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 37 }
  DEFINITION          "The control parameter associated with the command in a DMS control
  request."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { dmsMessageEntry 3 }, -- NTCIP.DmsMessageMultiString
    { signControl 5 } -- NTCIP.DmsMsgTableSource }
  DATA-TYPE "DMSControlDetails ::= CHOICE {
    dms-message NTCIP.DmsMessageMultiString,
    message-number NTCIP.DmsMsgTableSource,
    ... }"
}
```

3.3.6.2.2 XML REPRESENTATION

```
<xs:complexType name="DMSControlDetails">
```

```

        <xs:choice>
            <xs:element name="dms-message" type="ntcip:DmsMessageMultiString"/>
            <xs:element name="message-number" type="ntcip:DmsMsgTableSource"/>
        </xs:choice>
    </xs:complexType>

```

3.3.6.3 dMSControlRequest

3.3.6.3.1 ASN.1 REPRESENTATION

```

dMSControlRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DMSControlRequest:frame"
    ASN-NAME "DMSControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 38 }
    DEFINITION          "The information content necessary to request a control action of an
owner center's dynamic message sign."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 24 }, -- DeviceControlRequestHeader
        { tmddDataFrames 37 } -- DMSControlDetails
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 33 }, -- Dms-request-command
        { dmsMessageEntry 6 } -- NTCIP.DmsMessageBeacon }
    DATA-TYPE "DMSControlRequest ::= SEQUENCE {
        device-control-request-header DeviceControlRequestHeader,
        dms-request-command Dms-request-command,
        dms-command-parameters DMSControlDetails,
        dms-beacon-control NTCIP.DmsMessageBeacon OPTIONAL,
        ... }"
}

```

3.3.6.3.2 XML REPRESENTATION

```

<xs:complexType name="DMSControlRequest">
    <xs:sequence>
        <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
        <xs:element name="dms-request-command" type="Dms-request-command"/>
        <xs:element name="dms-command-parameters" type="DMSControlDetails"/>
        <xs:element name="dms-beacon-control" type="ntcip:DmsMessageBeacon"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.6.4 dMSFontTable

3.3.6.4.1 ASN.1 REPRESENTATION

```

dMSFontTable ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DMSFontTable:frame"
    ASN-NAME "DMSFontTable"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 39 }
    DEFINITION          "The information content describing an owner center's font table for
a single DMS."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
    }
}

```

```

    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 36 }, -- DMSCharacterTableEntry
    { tmddDataFrames 114 } -- DateTimeZone
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { multiCfg 5 }, -- NTCIP.DefaultFont
    { fontEntry 1 }, -- NTCIP.FontNumber
    { fontEntry 4 }, -- NTCIP.FontHeight
    { fontEntry 5 }, -- NTCIP.FontCharSpacing
    { fontEntry 6 }, -- NTCIP.FontLineSpacing
    { fontEntry 7 }, -- NTCIP.FontVersionID
    { fontEntry 8 } -- NTCIP.FontStatus }
DATA-TYPE "DMSFontTable ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    device-id Organization-resource-identifier,
    defaultFont NTCIP.DefaultFont,
    fontNumber NTCIP.FontNumber,
    fontHeight NTCIP.FontHeight,
    fontCharSpacing NTCIP.FontCharSpacing,
    fontLineSpacing NTCIP.FontLineSpacing,
    fontVersionID NTCIP.FontVersionID,
    fontStatus NTCIP.FontStatus,
    characterTable SEQUENCE (SIZE(1..65535)) OF DMSCharacterTableEntry,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.6.4.2 XML REPRESENTATION

```

<xs:complexType name="DMSFontTable">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="defaultFont" type="ntcip:DefaultFont"/>
        <xs:element name="fontNumber" type="ntcip:FontNumber"/>
        <xs:element name="fontHeight" type="ntcip:FontHeight"/>
        <xs:element name="fontCharSpacing" type="ntcip:FontCharSpacing"/>
        <xs:element name="fontLineSpacing" type="ntcip:FontLineSpacing"/>
        <xs:element name="fontVersionID" type="ntcip:FontVersionID"/>
        <xs:element name="fontStatus" type="ntcip:FontStatus"/>
        <xs:element name="characterTable">
            <xs:complexType>
                <xs:sequence maxOccurs="65535">
                    <xs:element name="characterTableEntry"
type="DMSCharacterTableEntry"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.6.5 dMSFontTableRequest

3.3.6.5.1 ASN.1 REPRESENTATION

```
dMSFontTableRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DMSFontTableRequest:frame"
  ASN-NAME "DMSFontTableRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 40 }
  DEFINITION          "The information content necessary to request an owner center's
dynamic message sign font tables. All font tables are being requested if the optional
fontNumber is not sent as part of the request."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 28 } -- DeviceInformationRequest
  }
  REFERENCED-DATA-ELEMENTS {
    { fontEntry 1 } -- NTCIP.FontNumber }
  DATA-TYPE "DMSFontTableRequest ::= SEQUENCE {
    device-information-request-header DeviceInformationRequest,
    fontNumber NTCIP.FontNumber OPTIONAL,
    ... }"
}
```

3.3.6.5.2 XML REPRESENTATION

```
<xs:complexType name="DMSFontTableRequest">
  <xs:sequence>
    <xs:element name="device-information-request-header"
type="DeviceInformationRequest"/>
    <xs:element name="fontNumber" type="ntcip:FontNumber" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.6.6 dMSInventory

3.3.6.6.1 ASN.1 REPRESENTATION

```
dMSInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DMSInventory:frame"
  ASN-NAME "DMSInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 41 }
  DEFINITION          "The information content describing an entry in the owner center's
dynamic message sign inventory for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 } -- DeviceInventoryHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { dmsSignCfg 1 }, -- NTCIP.DmsSignType
    { dmsSignCfg 9 }, -- NTCIP.DmsSignTechnology
    { vmsCfg 3 }, -- NTCIP.VmsSignHeightPixels
    { vmsCfg 4 }, -- NTCIP.VmsSignWidthPixels
    { dmsSignCfg 3 }, -- NTCIP.DmsSignHeight
    { dmsSignCfg 4 }, -- NTCIP.DmsSignWidth
    { vmsCfg 1 }, -- NTCIP.VmsCharacterHeightPixels
    { vmsCfg 2 }, -- NTCIP.VmsCharacterWidthPixels
    { dmsSignCfg 8 }, -- NTCIP.DmsBeaconType
    { dmsSignCfg 6 }, -- NTCIP.DmsVerticalBorder
    { dmsSignCfg 5 }, -- NTCIP.DmsHorizontalBorder
    { vmsCfg 6 }, -- NTCIP.VmsVerticalPitch
    { vmsCfg 5 }, -- NTCIP.VmsHorizontalPitch
    { multiCfg 15 }, -- NTCIP.DmsMaxNumberPages
  }
```

```

    { multiCfg 16 }, -- NTCIP.DmsMaxMultiStringLength
    { multiCfg 11 }, -- NTCIP.DmsColorScheme
    { multiCfg 14 } -- NTCIP.DmsSupportedMultiTags }
DATA-TYPE "DMSInventory" ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    dms-sign-type NTCIP.DmsSignType,
    signTechnology NTCIP.DmsSignTechnology OPTIONAL,
    signHeightPixels NTCIP.VmsSignHeightPixels OPTIONAL,
    signWidthPixels NTCIP.VmsSignWidthPixels OPTIONAL,
    signHeight NTCIP.DmsSignHeight OPTIONAL,
    signWidth NTCIP.DmsSignWidth OPTIONAL,
    charHeightPixels NTCIP.VmsCharacterHeightPixels OPTIONAL,
    charWidthPixels NTCIP.VmsCharacterWidthPixels OPTIONAL,
    dms-beacon-type NTCIP.DmsBeaconType OPTIONAL,
    dms-vertical-border NTCIP.DmsVerticalBorder OPTIONAL,
    dms-horizontal-border NTCIP.DmsHorizontalBorder OPTIONAL,
    dms-vertical-pixel-pitch NTCIP.VmsVerticalPitch OPTIONAL,
    dms-horizontal-pixel-pitch NTCIP.VmsHorizontalPitch OPTIONAL,
    dms-max-pages NTCIP.DmsMaxNumberPages OPTIONAL,
    dms-max-message-length NTCIP.DmsMaxMultiStringLength OPTIONAL,
    dms-color-scheme NTCIP.DmsColorScheme OPTIONAL,
    dms-multi-tag-support NTCIP.DmsSupportedMultiTags OPTIONAL,
    ... }"
}

```

3.3.6.6.2 XML REPRESENTATION

```

<xs:complexType name="DMSInventory">
  <xs:sequence>
    <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
    <xs:element name="dms-sign-type" type="ntcip:DmsSignType"/>
    <xs:element name="signTechnology" type="ntcip:DmsSignTechnology"
minOccurs="0"/>
    <xs:element name="signHeightPixels" type="ntcip:VmsSignHeightPixels"
minOccurs="0"/>
    <xs:element name="signWidthPixels" type="ntcip:VmsSignWidthPixels"
minOccurs="0"/>
    <xs:element name="signHeight" type="ntcip:DmsSignHeight"
minOccurs="0"/>
    <xs:element name="signWidth" type="ntcip:DmsSignWidth"
minOccurs="0"/>
    <xs:element name="charHeightPixels"
type="ntcip:VmsCharacterHeightPixels" minOccurs="0"/>
    <xs:element name="charWidthPixels"
type="ntcip:VmsCharacterWidthPixels" minOccurs="0"/>
    <xs:element name="dms-beacon-type" type="ntcip:DmsBeaconType"
minOccurs="0"/>
    <xs:element name="dms-vertical-border" type="ntcip:DmsVerticalBorder"
minOccurs="0"/>
    <xs:element name="dms-horizontal-border"
type="ntcip:DmsHorizontalBorder" minOccurs="0"/>
    <xs:element name="dms-vertical-pixel-pitch"
type="ntcip:VmsVerticalPitch" minOccurs="0"/>
    <xs:element name="dms-horizontal-pixel-pitch"
type="ntcip:VmsHorizontalPitch" minOccurs="0"/>
    <xs:element name="dms-max-pages" type="ntcip:DmsMaxNumberPages"
minOccurs="0"/>
    <xs:element name="dms-max-message-length"
type="ntcip:DmsMaxMultiStringLength" minOccurs="0"/>
    <xs:element name="dms-color-scheme" type="ntcip:DmsColorScheme"
minOccurs="0"/>
    <xs:element name="dms-multi-tag-support"
type="ntcip:DmsSupportedMultiTags" minOccurs="0"/>
  
```

```

        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.6.7 dMSMessageAppearance

3.3.6.7.1 ASN.1 REPRESENTATION

```

dMSMessageAppearance ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DMSMessageAppearance:frame"
    ASN-NAME "DMSMessageAppearance"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 42 }
    DEFINITION "The information content describing an owner center's dynamic message
    sign appearance attributes for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 } -- OrganizationInformation
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { dmsSignCfg 1 }, -- NTCIP.DmsSignType
        { vmsCfg 3 }, -- NTCIP.VmsSignHeightPixels
        { vmsCfg 4 }, -- NTCIP.VmsSignWidthPixels
        { dmsSignCfg 3 }, -- NTCIP.DmsSignHeight
        { dmsSignCfg 4 }, -- NTCIP.DmsSignWidth
        { vmsCfg 1 }, -- NTCIP.VmsCharacterHeightPixels
        { vmsCfg 2 }, -- NTCIP.VmsCharacterWidthPixels
        { dmsSignCfg 6 }, -- NTCIP.DmsVerticalBorder
        { dmsSignCfg 5 }, -- NTCIP.DmsHorizontalBorder
        { vmsCfg 6 }, -- NTCIP.VmsVerticalPitch
        { vmsCfg 5 }, -- NTCIP.VmsHorizontalPitch
        { multiCfg 15 }, -- NTCIP.DmsMaxNumberPages
        { multiCfg 16 }, -- NTCIP.DmsMaxMultiStringLength
        { multiCfg 11 }, -- NTCIP.DmsColorScheme
        { multiCfg 14 } -- NTCIP.DmsSupportedMultiTags }
    DATA-TYPE "DMSMessageAppearance ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        device-id Organization-resource-identifier,
        dms-sign-type NTCIP.DmsSignType,
        signHeightPixels NTCIP.VmsSignHeightPixels OPTIONAL,
        signWidthPixels NTCIP.VmsSignWidthPixels OPTIONAL,
        signHeight NTCIP.DmsSignHeight OPTIONAL,
        signWidth NTCIP.DmsSignWidth OPTIONAL,
        charHeightPixels NTCIP.VmsCharacterHeightPixels OPTIONAL,
        charWidthPixels NTCIP.VmsCharacterWidthPixels OPTIONAL,
        dms-vertical-border NTCIP.DmsVerticalBorder OPTIONAL,
        dms-horizontal-border NTCIP.DmsHorizontalBorder OPTIONAL,
        dms-vertical-pixel-pitch NTCIP.VmsVerticalPitch OPTIONAL,
        dms-horizontal-pixel-pitch NTCIP.VmsHorizontalPitch OPTIONAL,
        dms-max-pages NTCIP.DmsMaxNumberPages OPTIONAL,
        dms-max-message-length NTCIP.DmsMaxMultiStringLength OPTIONAL,
        dms-color-scheme NTCIP.DmsColorScheme OPTIONAL,
        dms-multi-tag-support NTCIP.DmsSupportedMultiTags OPTIONAL,
        ... }"
    }
}

```

3.3.6.7.2 XML REPRESENTATION

```

<xs:complexType name="DMSMessageAppearance">

```



```

        <xs:sequence>
            <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
            <xs:element name="organization-information"
type="OrganizationInformation"/>
            <xs:element name="device-id" type="Organization-resource-
identifier"/>
            <xs:element name="dms-sign-type" type="ntcip:DmsSignType"/>
            <xs:element name="signHeightPixels" type="ntcip:VmsSignHeightPixels"
minOccurs="0"/>
            <xs:element name="signWidthPixels" type="ntcip:VmsSignWidthPixels"
minOccurs="0"/>
            <xs:element name="signHeight" type="ntcip:DmsSignHeight"
minOccurs="0"/>
            <xs:element name="signWidth" type="ntcip:DmsSignWidth"
minOccurs="0"/>
            <xs:element name="charHeightPixels"
type="ntcip:VmsCharacterHeightPixels" minOccurs="0"/>
            <xs:element name="charWidthPixels"
type="ntcip:VmsCharacterWidthPixels" minOccurs="0"/>
            <xs:element name="dms-vertical-border" type="ntcip:DmsVerticalBorder"
minOccurs="0"/>
            <xs:element name="dms-horizontal-border"
type="ntcip:DmsHorizontalBorder" minOccurs="0"/>
            <xs:element name="dms-vertical-pixel-pitch"
type="ntcip:VmsVerticalPitch" minOccurs="0"/>
            <xs:element name="dms-horizontal-pixel-pitch"
type="ntcip:VmsHorizontalPitch" minOccurs="0"/>
            <xs:element name="dms-max-pages" type="ntcip:DmsMaxNumberPages"
minOccurs="0"/>
            <xs:element name="dms-max-message-length"
type="ntcip:DmsMaxMultiStringLength" minOccurs="0"/>
            <xs:element name="dms-color-scheme" type="ntcip:DmsColorScheme"
minOccurs="0"/>
            <xs:element name="dms-multi-tag-support"
type="ntcip:DmsSupportedMultiTags" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>

```

3.3.6.8 dMSMessageAppearanceRequest

3.3.6.8.1 ASN.1 REPRESENTATION

```

dMSMessageAppearanceRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DMSMessageAppearanceRequest:frame"
    ASN-NAME "DMSMessageAppearanceRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 43 }
    DEFINITION "The information content necessary to request an owner center's
dynamic message sign appearance attributes for a given set of signs."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 28 }, -- DeviceInformationRequest
        { tmddDataFrames 44 } -- DMSMessageAppearanceRequestType }
    DATA-TYPE "DMSMessageAppearanceRequest ::= SEQUENCE {
        device-information-request-header DeviceInformationRequest,
        dms-message-appearance DMSMessageAppearanceRequestType,
        ... }"
}

```

3.3.6.8.2 XML REPRESENTATION

```
<xs:complexType name="DMSMessageAppearanceRequest">
  <xs:sequence>
    <xs:element name="device-information-request-header"
type="DeviceInformationRequest"/>
    <xs:element name="dms-message-appearance"
type="DMSMessageAppearanceRequestType"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.6.9 dMSMessageAppearanceRequestType

3.3.6.9.1 ASN.1 REPRESENTATION

```
dMSMessageAppearanceRequestType ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "DMSMessageAppearanceRequestType:frame"
ASN-NAME "DMSMessageAppearanceRequestType"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 44 }
DEFINITION      "A data frame that defines the choices for a DMS message appearance
request."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
  { dmsMessageEntry 3 }, -- NTCIP.DmsMessageMultiString
  { signControl 5 }, -- NTCIP.DmsMsgTableSource
  { tmddDataElements 30 } -- Device-return-current-message-snapshot-flag }
DATA-TYPE "DMSMessageAppearanceRequestType ::= CHOICE {
  dms-message NTCIP.DmsMessageMultiString,
  message-number NTCIP.DmsMsgTableSource,
  return-current-message-snapshot Device-return-current-message-snapshot-flag,
  ... }"
```

3.3.6.9.2 XML REPRESENTATION

```
<xs:complexType name="DMSMessageAppearanceRequestType">
  <xs:choice>
    <xs:element name="dms-message" type="ntcip:DmsMessageMultiString"/>
    <xs:element name="message-number" type="ntcip:DmsMsgTableSource"/>
    <xs:element name="return-current-message-snapshot" type="Device-
return-current-message-snapshot-flag"/>
  </xs:choice>
</xs:complexType>
```

3.3.6.10 dMSMessageInventory

3.3.6.10.1 ASN.1 REPRESENTATION

```
dMSMessageInventory ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "DMSMessageInventory:frame"
ASN-NAME "DMSMessageInventory"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 45 }
DEFINITION      "The information content describing an owner center's dynamic message
library for a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 160 }, -- Restrictions
  { tmddDataFrames 158 }, -- OrganizationInformation
  { tmddDataFrames 114 } -- DateTimeZone
}
```

```

REFERENCED-DATA-ELEMENTS {
    { tmdDataElements 192 }, -- Organization-resource-identifier
    { dmsMessageEntry 1 }, -- NTCIP.DmsMessageMemoryType
    { signControl 5 }, -- NTCIP.DmsMsgTableSource
    { dmsMessageEntry 3 }, -- NTCIP.DmsMessageMultiString
    { tmdDataElements 118 }, -- Binary-flag
    { dmsMessageEntry 8 }, -- NTCIP.DmsMessageRunTimePriority
    { dmsMessageEntry 9 } -- NTCIP.DmsMessageStatus }
DATA-TYPE "DMSMessageInventory" ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    device-id Organization-resource-identifier,
    message-memory-type NTCIP.DmsMessageMemoryType,
    message-number NTCIP.DmsMsgTableSource,
    message NTCIP.DmsMessageMultiString,
    message-owner-organization-information OrganizationInformation,
    enable-beacon-flag Binary-flag,
    message-run-time-priority NTCIP.DmsMessageRunTimePriority,
    message-status NTCIP.DmsMessageStatus,
    last-update-time DateTimeZone OPTIONAL,
    ... }
}

```

3.3.6.10.2 XML REPRESENTATION

```

<xs:complexType name="DMSMessageInventory">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="message-memory-type"
type="ntcip:DmsMessageMemoryType"/>
        <xs:element name="message-number" type="ntcip:DmsMsgTableSource"/>
        <xs:element name="message" type="ntcip:DmsMessageMultiString"/>
        <xs:element name="message-owner-organization-information"
type="OrganizationInformation"/>
        <xs:element name="enable-beacon-flag" type="Binary-flag"/>
        <xs:element name="message-run-time-priority"
type="ntcip:DmsMessageRunTimePriority"/>
        <xs:element name="message-status" type="ntcip:DmsMessageStatus"/>
        <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.6.11 dMSMessageInventoryRequest

3.3.6.11.1 ASN.1 REPRESENTATION

```

dMSMessageInventoryRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DMSMessageInventoryRequest:frame"
    ASN-NAME "DMSMessageInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmdDataFrames 46 }
    DEFINITION "The information content describing an owner center's dynamic message
library for a given set of signs. All messages are being requested if the optional
message-number is not sent as part of the request. Messages stored in all memory
types are being requested if the optional message-memory-type is not sent as part of
the request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
}

```

```

STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 28 } -- DeviceInformationRequest
}
REFERENCED-DATA-ELEMENTS {
    { signControl 5 }, -- NTCIP.DmsMsgTableSource
    { dmsMessageEntry 1 } -- NTCIP.DmsMessageMemoryType }
DATA-TYPE "DMSMessageInventoryRequest ::= SEQUENCE {
    device-information-request-header DeviceInformationRequest,
    message-number NTCIP.DmsMsgTableSource OPTIONAL,
    message-memory-type NTCIP.DmsMessageMemoryType OPTIONAL,
    ... }"
}

```

3.3.6.11.2 XML REPRESENTATION

```

<xs:complexType name="DMSMessageInventoryRequest">
    <xs:sequence>
        <xs:element name="device-information-request-header"
type="DeviceInformationRequest"/>
        <xs:element name="message-number" type="ntcip:DmsMsgTableSource"
minOccurs="0"/>
        <xs:element name="message-memory-type"
type="ntcip:DmsMessageMemoryType" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.6.12 dMSPriorityQueue

3.3.6.12.1 ASN.1 REPRESENTATION

```

dMSPriorityQueue ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DMSPriorityQueue:frame"
    ASN-NAME "DMSPriorityQueue"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 47 }
    DEFINITION "The information content describing an owner center's dynamic message
sign control priority queue for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 31 }, -- DevicePriorityQueueHeader
        { tmddDataFrames 37 } -- DMSControlDetails
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 33 } -- Dms-request-command }
    DATA-TYPE "DMSPriorityQueue ::= SEQUENCE {
        device-priority-queue-header DevicePriorityQueueHeader,
        dms-request-command Dms-request-command,
        dms-queue-parameters DMSControlDetails,
        ... }"
}

```

3.3.6.12.2 XML REPRESENTATION

```

<xs:complexType name="DMSPriorityQueue">
    <xs:sequence>
        <xs:element name="device-priority-queue-header"
type="DevicePriorityQueueHeader"/>
        <xs:element name="dms-request-command" type="Dms-request-command"/>
        <xs:element name="dms-queue-parameters" type="DMSControlDetails"/>
    </xs:sequence>
</xs:complexType>

```

```

        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.6.13 dMSStatus

3.3.6.13.1 ASN.1 REPRESENTATION

```

dMSStatus ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DMSStatus:frame"
    ASN-NAME "DMSStatus"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 48 }
    DEFINITION "The information content describing an owner center's dynamic message
    sign status for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 35 } -- DeviceStatusHeader
    }
    REFERENCED-DATA-ELEMENTS {
        { dmsMessageEntry 3 }, -- NTCIP.DmsMessageMultiString
        { signControl 5 }, -- NTCIP.DmsMsgTableSource
        { signControl 4 }, -- NTCIP.DmsMessageTimeRemaining
        { signControl 7 }, -- NTCIP.DmsMsgSourceMode
        { dmsMessageEntry 6 } -- NTCIP.DmsMessageBeacon }
    DATA-TYPE "DMSStatus ::= SEQUENCE {
        device-status-header DeviceStatusHeader,
        current-message NTCIP.DmsMessageMultiString,
        message-number NTCIP.DmsMsgTableSource OPTIONAL,
        message-time-remaining NTCIP.DmsMessageTimeRemaining OPTIONAL,
        message-source-mode NTCIP.DmsMsgSourceMode OPTIONAL,
        message-beacon NTCIP.DmsMessageBeacon OPTIONAL,
        ... }"
}

```

3.3.6.13.2 XML REPRESENTATION

```

<xs:complexType name="DMSStatus">
    <xs:sequence>
        <xs:element name="device-status-header" type="DeviceStatusHeader"/>
        <xs:element name="current-message"
type="ntcip:DmsMessageMultiString"/>
        <xs:element name="message-number" type="ntcip:DmsMsgTableSource"
minOccurs="0"/>
        <xs:element name="message-time-remaining"
type="ntcip:DmsMessageTimeRemaining" minOccurs="0"/>
        <xs:element name="message-source-mode" type="ntcip:DmsMsgSourceMode"
minOccurs="0"/>
        <xs:element name="message-beacon" type="ntcip:DmsMessageBeacon"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7 ESS Class Data Frames

3.3.7.1 eSSClimateRecordDetail

3.3.7.1.1 ASN.1 REPRESENTATION

```

eSSClimateRecordDetail ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSClimateRecordDetail:frame"

```

```
ASN-NAME "ESSClimateRecordDetail"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 49 }
DEFINITION "The information content describing the monthly average low and high
for a given site."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 47 }, -- Ess-observation-month
    { tmddDataElements 54 } -- Ess-observation-value-range-number }
DATA-TYPE "ESSClimateRecordDetail ::= SEQUENCE {
    climate-observation-month Ess-observation-month,
    climate-observation-month-min-value Ess-observation-value-range-number,
    climate-month-max-value Ess-observation-value-range-number,
    ... }"
```

3.3.7.1.2 XML REPRESENTATION

```
<xs:complexType name="ESSClimateRecordDetail">
    <xs:sequence>
        <xs:element name="climate-observation-month" type="Ess-observation-
month"/>
        <xs:element name="climate-observation-month-min-value" type="Ess-
observation-value-range-number"/>
        <xs:element name="climate-month-max-value" type="Ess-observation-
value-range-number"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

3.3.7.2 eSSDataCollectorInformation

3.3.7.2.1 ASN.1 REPRESENTATION

```
eSSDataCollectorInformation ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "ESSDataCollectorInformation:frame"
ASN-NAME "ESSDataCollectorInformation"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 50 }
DEFINITION "The information content describing the metadata for a data
collector."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 } -- DateTimeZone
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 79 }, -- Event-description-notes-and-comments
    { tmddDataElements 193 } -- Organization-resource-name }
DATA-TYPE "ESSDataCollectorInformation ::= SEQUENCE {
    data-collector-description Event-description-notes-and-comments,
    data-collector-installation-date DateTimeZone,
    data-collector-manufacturer Organization-resource-name,
    data-collector-product-name Organization-resource-name,
    data-collector-model-number-software-version Organization-resource-name,
    ... }"
```

3.3.7.2.2 XML REPRESENTATION

```
<xs:complexType name="ESSDataCollectorInformation">
```

```

        <xs:sequence>
            <xs:element name="data-collector-description" type="Event-
description-notes-and-comments"/>
            <xs:element name="data-collector-installation-date"
type="DateTimeZone"/>
            <xs:element name="data-collector-manufacturer" type="Organization-
resource-name"/>
            <xs:element name="data-collector-product-name" type="Organization-
resource-name"/>
            <xs:element name="data-collector-model-number-software-version"
type="Organization-resource-name"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>

```

3.3.7.3 eSSIImageInformation

3.3.7.3.1 ASN.1 REPRESENTATION

```

eSSIImageInformation ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSImageInformation:frame"
    ASN-NAME "ESSImageInformation"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 51 }
    DEFINITION          "The information content describing the metadata for an environmental
sensor station image."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 79 }, -- Event-description-notes-and-comments
        { tmddDataElements 122 } -- Url-reference }
    DATA-TYPE "ESSImageInformation ::= SEQUENCE {
        image-description Event-description-notes-and-comments,
        image-url Url-reference,
        ... }"
}

```

3.3.7.3.2 XML REPRESENTATION

```

<xs:complexType name="ESSImageInformation">
    <xs:sequence>
        <xs:element name="image-description" type="Event-description-notes-
and-comments"/>
        <xs:element name="image-url" type="Url-reference"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7.4 eSSIInventory

3.3.7.4.1 ASN.1 REPRESENTATION

```

eSSIInventory ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSInventory:frame"
    ASN-NAME "ESSInventory"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 52 }
    DEFINITION          "The information content describing an entry in the owner center's
environmental sensor station inventory for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 30 }, -- DeviceInventoryHeader

```

```

{ tmddDataFrames 53 } -- ESSInventoryDetails }
DATA-TYPE "ESSInventory ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    ess-inventory-list SEQUENCE (SIZE(0..64)) OF ESSInventoryDetails,
    ... }"
}

```

3.3.7.4.2 XML REPRESENTATION

```

<xs:complexType name="ESSInventory">
    <xs:sequence>
        <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
        <xs:element name="ess-inventory-list">
            <xs:complexType>
                <xs:sequence minOccurs="0" maxOccurs="64">
                    <xs:element name="ess-sensor"
type="ESSInventoryDetails"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7.5 eSSInventoryDetails

3.3.7.5.1 ASN.1 REPRESENTATION

```

eSSInventoryDetails ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSInventoryDetails:frame"
    ASN-NAME "ESSInventoryDetails"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 53 }
    DEFINITION "Static information attributes for a single environmental sensor."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 30 } -- DeviceInventoryHeader
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 152 }, -- Link-lane-number
        { tmddDataElements 25 }, -- Device-location-elevation
        { tmddDataElements 26 }, -- Device-location-height
        { tmddDataElements 59 }, -- Ess-sensor-type
        { tmddDataElements 29 }, -- Device-operation-type
        { tmddDataElements 27 } -- Device-mobility-type }
    DATA-TYPE "ESSInventoryDetails ::= SEQUENCE {
        ess-sensor-inventory-header DeviceInventoryHeader,
        lane-number Link-lane-number OPTIONAL,
        sensor-location-elevation Device-location-elevation OPTIONAL,
        sensor-location-height Device-location-height OPTIONAL,
        sensor-type Ess-sensor-type OPTIONAL,
        sensor-operation-type Device-operation-type OPTIONAL,
        sensor-mobility-type Device-mobility-type OPTIONAL,
        ... }"
}

```

3.3.7.5.2 XML REPRESENTATION

```

<xs:complexType name="ESSInventoryDetails">
    <xs:sequence>

```



```

        <xs:element name="ess-sensor-inventory-header"
type="DeviceInventoryHeader"/>
        <xs:element name="lane-number" type="Link-lane-number"
minOccurs="0"/>
        <xs:element name="sensor-location-elevation" type="Device-location-
elevation" minOccurs="0"/>
        <xs:element name="sensor-location-height" type="Device-location-
height" minOccurs="0"/>
        <xs:element name="sensor-type" type="Ess-sensor-type" minOccurs="0"/>
        <xs:element name="sensor-operation-type" type="Device-operation-type"
minOccurs="0"/>
        <xs:element name="sensor-mobility-type" type="Device-mobility-type"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7.6 eSSObservationDataSetMetadataDetail

3.3.7.6.1 ASN.1 REPRESENTATION

```

eSSObservationDataSetMetadataDetail ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "ESSObservationDataSetMetadataDetail:frame"
ASN-NAME "ESSObservationDataSetMetadataDetail"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 54 }
DEFINITION "The information content describing an owner center's environmental
sensor station metadata for the station, sensor, climate record, and site."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 40 }, -- Ess-data-set-file-name
    { tmddDataElements 41 }, -- Ess-data-set-file-path
    { tmddDataElements 37 }, -- Ess-data-set-file-access-protocol
    { tmddDataElements 39 }, -- Ess-data-set-file-host
    { tmddDataElements 38 }, -- Ess-data-set-file-access-protocol-port-address
    { tmddDataElements 67 }, -- Ess-time-span-minutes
    { tmddDataElements 52 }, -- Ess-observation-time-zone
    { tmddDataElements 118 }, -- Binary-flag
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 9 } -- Security-password }
DATA-TYPE "ESSObservationDataSetMetadataDetail ::= SEQUENCE {
    ess-data-set-file-name Ess-data-set-file-name,
    ess-data-set-file-directory-path Ess-data-set-file-path,
    ess-data-set-file-access-protocol Ess-data-set-file-access-protocol,
    ess-data-set-file-access-address Ess-data-set-file-host,
    ess-data-set-file-access-port-address Ess-data-set-file-access-protocol-port-
address,
    ess-observation-collection-frequency Ess-time-span-minutes,
    ess-observation-collection-offset Ess-time-span-minutes,
    ess-host-server-offset-minutes Ess-time-span-minutes,
    ess-host-server-time-zone Ess-observation-time-zone,
    ess-host-server-daylight-savings-in-effect-flag Binary-flag,
    user-id Organization-resource-identifier OPTIONAL,
    password Security-password OPTIONAL,
    ... }"
}

```

3.3.7.6.2 XML REPRESENTATION

```

<xs:complexType name="ESSObservationDataSetMetadataDetail">
    <xs:sequence>

```

```

        <xs:element name="ess-data-set-file-name" type="Ess-data-set-file-
name"/>
        <xs:element name="ess-data-set-file-directory-path" type="Ess-data-
set-file-path"/>
        <xs:element name="ess-data-set-file-access-protocol" type="Ess-data-
set-file-access-protocol"/>
        <xs:element name="ess-data-set-file-access-address" type="Ess-data-
set-file-host"/>
        <xs:element name="ess-data-set-file-access-port-address" type="Ess-
data-set-file-access-protocol-port-address"/>
        <xs:element name="ess-observation-collection-frequency" type="Ess-
time-span-minutes"/>
        <xs:element name="ess-observation-collection-offset" type="Ess-time-
span-minutes"/>
        <xs:element name="ess-host-server-offset-minutes" type="Ess-time-
span-minutes"/>
        <xs:element name="ess-host-server-time-zone" type="Ess-observation-
time-zone"/>
        <xs:element name="ess-host-server-daylight-savings-in-effect-flag"
type="Binary-flag"/>
        <xs:element name="user-id" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="password" type="Security-password" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7.7 eSSObservationMetadata

3.3.7.7.1 ASN.1 REPRESENTATION

```

eSSObservationMetadata ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSObservationMetadata:frame"
    ASN-NAME "ESSObservationMetadata"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 55 }
    DEFINITION "The information content describing an owner center's environmental
    sensor station metadata for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 54 }, -- ESSObservationDataSetMetadataDetail
        { tmddDataFrames 56 }, -- ESSObservationMetadataItem
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 61 }, -- ESSSensorMetadataDetail
        { tmddDataFrames 63 }, -- ESSSiteMetadataDetail
        { tmddDataFrames 64 }, -- ESSStationMetadataDetail
        { tmddDataFrames 49 }, -- ESSClimateRecordDetail
        { tmddDataFrames 50 }, -- ESSDataCollectorInformation
        { tmddDataFrames 51 } -- ESSImageInformation }
    DATA-TYPE "ESSObservationMetadata ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        ess-observation-data-set-metadata ESSObservationDataSetMetadataDetail,
        ess-collector-configuration SEQUENCE (SIZE(1..255)) OF ESSObservationMetadataItem
    OPTIONAL,
        organization-information OrganizationInformation OPTIONAL,
        ess-sensor-metadata-list SEQUENCE (SIZE(1..255)) OF ESSSensorMetadataDetail
    OPTIONAL,
        site-information ESSSiteMetadataDetail OPTIONAL,
        station-information ESSStationMetadataDetail OPTIONAL,
        climate-record-information ESSClimateRecordDetail OPTIONAL,
        data-collector-information ESSDataCollectorInformation OPTIONAL,
        image-information ESSImageInformation OPTIONAL,
        ... }"

```

}

3.3.7.7.2 XML REPRESENTATION

```
<xs:complexType name="ESSObservationMetadata">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="ess-observation-data-set-metadata"
type="ESSObservationDataSetMetadataDetail"/>
    <xs:element name="ess-collector-configuration" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="255">
          <xs:element name="ess-collector-metadata"
type="ESSObservationMetadataItem"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="organization-information"
type="OrganizationInformation" minOccurs="0"/>
    <xs:element name="ess-sensor-metadata-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="255">
          <xs:element name="ess-sensor-metadata"
type="ESSSensorMetadataDetail"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="site-information" type="ESSSiteMetadataDetail"
minOccurs="0"/>
    <xs:element name="station-information"
type="ESSStationMetadataDetail" minOccurs="0"/>
    <xs:element name="climate-record-information"
type="ESSClimateRecordDetail" minOccurs="0"/>
    <xs:element name="data-collector-information"
type="ESSDataCollectorInformation" minOccurs="0"/>
    <xs:element name="image-information" type="ESSImageInformation"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.7.8 eSSObservationMetadataItem

3.3.7.8.1 ASN.1 REPRESENTATION

```
eSSObservationMetadataItem ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ESSObservationMetadataItem:frame"
  ASN-NAME "ESSObservationMetadataItem"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 56 }
  DEFINITION "The information content describing an observation's positional
order, name, units, and scaling factor."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 50 }, -- Ess-observation-positional-order
    { tmddDataElements 44 }, -- Ess-object-label
    { tmddDataElements 45 }, -- Ess-object-name
    { tmddDataElements 46 }, -- Ess-object-null-value
    { tmddDataElements 53 }, -- Ess-observation-units
    { tmddDataElements 48 } -- Ess-observation-decimal-scaling-factor }
  DATA-TYPE "ESSObservationMetadataItem ::= SEQUENCE {
    ess-observation-positional-order Ess-observation-positional-order,
```

```

    ess-observation-label Ess-object-label,
    ess-observation-type Ess-object-name OPTIONAL,
    ess-observation-null-value Ess-object-null-value OPTIONAL,
    ess-observation-units Ess-observation-units,
    ess-observation-decimal-scaling-factor Ess-observation-decimal-scaling-factor,
    ... }"
}

```

3.3.7.8.2 XML REPRESENTATION

```

<xs:complexType name="ESSObservationMetadataItem">
  <xs:sequence>
    <xs:element name="ess-observation-positional-order" type="Ess-
observation-positional-order"/>
    <xs:element name="ess-observation-label" type="Ess-object-label"/>
    <xs:element name="ess-observation-type" type="Ess-object-name"
minOccurs="0"/>
    <xs:element name="ess-observation-null-value" type="Ess-object-null-
value" minOccurs="0"/>
    <xs:element name="ess-observation-units" type="Ess-observation-
units"/>
    <xs:element name="ess-observation-decimal-scaling-factor" type="Ess-
observation-decimal-scaling-factor"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.7.9 eSSObservationReport

3.3.7.9.1 ASN.1 REPRESENTATION

```

eSSObservationReport ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ESSObservationReport:frame"
  ASN-NAME "ESSObservationReport"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 57 }
  DEFINITION "The information content describing an owner center's environmental
sensor station observation reports for a given set of devices."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 58 } -- ESSObservationReportDetail
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 } -- Organization-resource-identifier }
  DATA-TYPE "ESSObservationReport ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    station-id Organization-resource-identifier,
    ess-data-list SEQUENCE (SIZE(0..64)) OF ESSObservationReportDetail,
    ... }"
}

```

3.3.7.9.2 XML REPRESENTATION

```

<xs:complexType name="ESSObservationReport">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>

```

```

        <xs:element name="station-id" type="Organization-resource-
identifier"/>
        <xs:element name="ess-data-list">
            <xs:complexType>
                <xs:sequence minOccurs="0" maxOccurs="64">
                    <xs:element name="ess-sensor"
type="ESSObservationReportDetail"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7.10 eSSObservationReportDetail

3.3.7.10.1 ASN.1 REPRESENTATION

```

eSSObservationReportDetail ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSObservationReportDetail:frame"
    ASN-NAME "ESSObservationReportDetail"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 58 }
    DEFINITION "The information content describing an environmental sensor station
observation report for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 114 }, -- DateTimeZone
        { tmddDataFrames 60 } -- ESSObservationType
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 } -- Organization-resource-identifier }
    DATA-TYPE "ESSObservationReportDetail ::= SEQUENCE {
        ess-sensor-id Organization-resource-identifier,
        ess-observation-timestamp DateTimeZone,
        ess-observation-type ESSObservationType,
        ... }"
}

```

3.3.7.10.2 XML REPRESENTATION

```

<xs:complexType name="ESSObservationReportDetail">
    <xs:sequence>
        <xs:element name="ess-sensor-id" type="Organization-resource-
identifier"/>
        <xs:element name="ess-observation-timestamp" type="DateTimeZone"/>
        <xs:element name="ess-observation-type" type="ESSObservationType"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7.11 eSSObservationType

3.3.7.11.1 ASN.1 REPRESENTATION

```

eSSObservationType ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSObservationType:frame"
    ASN-NAME "ESSObservationType"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 60 }
    DEFINITION "A block of ESS observation data: either weather, pavement, or sub-
surface information."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
}

```

```
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { essNtcipInstrumentation 5 }, -- NTCIP.EssWeatherBlock
    { essNtcipPavement 5 }, -- NTCIP.EssPavementBlock
    { essNtcipPavement 6 } -- NTCIP.EssSubSurfaceData }
DATA-TYPE "ESSObservationType ::= CHOICE {
    weather-data NTCIP.EssWeatherBlock,
    pavement-data NTCIP.EssPavementBlock,
    subsurface-data NTCIP.EssSubSurfaceData,
    ... }"
```

3.3.7.11.2 XML REPRESENTATION

```
<xs:complexType name="ESSObservationType">
  <xs:choice>
    <xs:element name="weather-data" type="ntcip:EssWeatherBlock"/>
    <xs:element name="pavement-data" type="ntcip:EssPavementBlock"/>
    <xs:element name="subsurface-data" type="ntcip:EssSubSurfaceData"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>
```

3.3.7.12 eSSSensorMetadataDetail

3.3.7.12.1 ASN.1 REPRESENTATION

```
eSSSensorMetadataDetail ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ESSSensorMetadataDetail:frame"
  ASN-NAME "ESSSensorMetadataDetail"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 61 }
  DEFINITION "The information content describing the metadata for a station
  sensor."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 79 }, -- Event-description-notes-and-comments
    { tmddDataElements 43 }, -- Ess-distribution-group
    { tmddDataElements 45 }, -- Ess-object-name
    { tmddDataElements 54 }, -- Ess-observation-value-range-number
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 51 }, -- Ess-observation-sensor-index
    { tmddDataElements 68 }, -- Ess-time-span-seconds
    { tmddDataElements 55 }, -- Ess-observation-rate-of-change
    { tmddDataElements 58 }, -- Ess-sensor-resolution
    { tmddDataElements 57 }, -- Ess-sensor-accuracy
    { tmddDataElements 42 }, -- Ess-distance-meters
    { tmddDataElements 66 }, -- Ess-time-span-milliseconds
    { tmddDataElements 53 } -- Ess-observation-units }
  DATA-TYPE "ESSSensorMetadataDetail ::= SEQUENCE {
    station-id Organization-resource-identifier,
    sensor-id Organization-resource-identifier,
    sensor-description Event-description-notes-and-comments OPTIONAL,
    sensor-information-distribution-group Ess-distribution-group,
    sensor-installation-date DateTimeZone OPTIONAL,
    ess-observation-type Ess-object-name,
    sensor-min-value-range Ess-observation-value-range-number OPTIONAL,
```

```

    sensor-max-value-range Ess-observation-value-range-number OPTIONAL,
    sensor-manufacturer Organization-resource-name,
    sensor-model-number Organization-resource-name,
    sensor-index Ess-observation-sensor-index,
    sensor-rate-of-change-interval Ess-time-span-seconds OPTIONAL,
    sensor-max-positive-rate-of-change Ess-observation-rate-of-change OPTIONAL,
    sensor-max-negative-rate-of-change Ess-observation-rate-of-change OPTIONAL,
    sensor-persistence-interval Ess-time-span-seconds OPTIONAL,
    sensor-persistence-threshold Ess-observation-rate-of-change OPTIONAL,
    sensor-like-instrument-threshold Ess-sensor-resolution OPTIONAL,
    sensor-maintenance-calibration-date DateTimeZone OPTIONAL,
    sensor-last-maintenance-date DateTimeZone OPTIONAL,
    sensor-serial-number Organization-resource-identifier OPTIONAL,
    sensor-resolution Ess-sensor-resolution OPTIONAL,
    sensor-accuracy Ess-sensor-accuracy OPTIONAL,
    sensor-min-value-output Ess-observation-value-range-number OPTIONAL,
    sensor-max-value-output Ess-observation-value-range-number OPTIONAL,
    sensor-to-station-north-south-offset Ess-distance-meters OPTIONAL,
    sensor-to-station-east-west-offset Ess-distance-meters OPTIONAL,
    sensor-to-station-elevation-offset Ess-distance-meters OPTIONAL,
    sensor-to-surface-elevation-offset Ess-distance-meters OPTIONAL,
    sensor-embedded-material-description Event-description-notes-and-comments
OPTIONAL,
    sensor-output-average-interval Ess-time-span-milliseconds OPTIONAL,
    sensor-output-internal-units Ess-observation-units OPTIONAL,
    sensor-last-out-of-service-begin-date-time DateTimeZone OPTIONAL,
    sensor-last-out-of-service-end-date-time DateTimeZone OPTIONAL,
    sensor-sampling-interval Ess-time-span-seconds OPTIONAL,
    ... }"
}

```

3.3.7.12.2 XML REPRESENTATION

```

<xs:complexType name="ESSSensorMetadataDetail">
  <xs:sequence>
    <xs:element name="station-id" type="Organization-resource-
  identifier"/>
    <xs:element name="sensor-id" type="Organization-resource-
  identifier"/>
    <xs:element name="sensor-description" type="Event-description-notes-
  and-comments" minOccurs="0"/>
    <xs:element name="sensor-information-distribution-group" type="Ess-
  distribution-group"/>
    <xs:element name="sensor-installation-date" type="DateTimeZone"
  minOccurs="0"/>
    <xs:element name="ess-observation-type" type="Ess-object-name"/>
    <xs:element name="sensor-min-value-range" type="Ess-observation-
  value-range-number" minOccurs="0"/>
    <xs:element name="sensor-max-value-range" type="Ess-observation-
  value-range-number" minOccurs="0"/>
    <xs:element name="sensor-manufacturer" type="Organization-resource-
  name"/>
    <xs:element name="sensor-model-number" type="Organization-resource-
  name"/>
    <xs:element name="sensor-index" type="Ess-observation-sensor-index"/>
    <xs:element name="sensor-rate-of-change-interval" type="Ess-time-
  span-seconds" minOccurs="0"/>
    <xs:element name="sensor-max-positive-rate-of-change" type="Ess-
  observation-rate-of-change" minOccurs="0"/>
    <xs:element name="sensor-max-negative-rate-of-change" type="Ess-
  observation-rate-of-change" minOccurs="0"/>
    <xs:element name="sensor-persistence-interval" type="Ess-time-span-
  seconds" minOccurs="0"/>
  
```

```

        <xs:element name="sensor-persistence-threshold" type="Ess-
observation-rate-of-change" minOccurs="0"/>
        <xs:element name="sensor-like-instrument-threshold" type="Ess-
sensor-resolution" minOccurs="0"/>
        <xs:element name="sensor-maintenance-calibration-date"
type="DateTimeZone" minOccurs="0"/>
        <xs:element name="sensor-last-maintenance-date" type="DateTimeZone"
minOccurs="0"/>
        <xs:element name="sensor-serial-number" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="sensor-resolution" type="Ess-sensor-resolution"
minOccurs="0"/>
        <xs:element name="sensor-accuracy" type="Ess-sensor-accuracy"
minOccurs="0"/>
        <xs:element name="sensor-min-value-output" type="Ess-observation-
value-range-number" minOccurs="0"/>
        <xs:element name="sensor-max-value-output" type="Ess-observation-
value-range-number" minOccurs="0"/>
        <xs:element name="sensor-to-station-north-south-offset" type="Ess-
distance-meters" minOccurs="0"/>
        <xs:element name="sensor-to-station-east-west-offset" type="Ess-
distance-meters" minOccurs="0"/>
        <xs:element name="sensor-to-station-elevation-offset" type="Ess-
distance-meters" minOccurs="0"/>
        <xs:element name="sensor-to-surface-elevation-offset" type="Ess-
distance-meters" minOccurs="0"/>
        <xs:element name="sensor-embedded-material-description" type="Event-
description-notes-and-comments" minOccurs="0"/>
        <xs:element name="sensor-output-average-interval" type="Ess-time-
span-milliseconds" minOccurs="0"/>
        <xs:element name="sensor-output-internal-units" type="Ess-
observation-units" minOccurs="0"/>
        <xs:element name="sensor-last-out-of-service-begin-date-time"
type="DateTimeZone" minOccurs="0"/>
        <xs:element name="sensor-last-out-of-service-end-date-time"
type="DateTimeZone" minOccurs="0"/>
        <xs:element name="sensor-sampling-interval" type="Ess-time-span-
seconds" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.7.13 eSSSensorStatusDetails

3.3.7.13.1 ASN.1 REPRESENTATION

```

eSSSensorStatusDetails ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ESSSensorStatusDetails:frame"
    ASN-NAME "ESSSensorStatusDetails"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 62 }
    DEFINITION "Dynamic information attributes for a single environmental sensor."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 35 } -- DeviceStatusHeader }
    DATA-TYPE "ESSSensorStatusDetails ::= SEQUENCE {
        device-status-header DeviceStatusHeader,
        ... }"
}

```

3.3.7.13.2 XML REPRESENTATION


```
<xs:complexType name="ESSSensorStatusDetails">
  <xs:sequence>
    <xs:element name="device-status-header" type="DeviceStatusHeader"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.7.14 eSSSiteMetadataDetail

3.3.7.14.1 ASN.1 REPRESENTATION

```
eSSSiteMetadataDetail ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ESSSiteMetadataDetail:frame"
  ASN-NAME "ESSSiteMetadataDetail"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 63 }
  DEFINITION "The information content describing the metadata for a station site."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 79 }, -- Event-description-notes-and-comments
    { tmddDataElements 118 }, -- Binary-flag
    { tmddDataElements 203 }, -- Transportation-network-name
    { tmddDataElements 156 }, -- Link-location-linear-reference
    { tmddDataElements 157 }, -- Link-location-linear-reference-version
    { lrmsDataElements lRMMethod(1) }, -- LRMS.LRMMethod
    { tmddDataElements 42 }, -- Ess-distance-meters
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 187 }, -- Contact-mailing-address-state
    { tmddDataElements 60 }, -- Ess-site-country-code
    { tmddDataElements 35 }, -- Ess-angle-degrees
    { tmddDataElements 49 } -- Ess-observation-percent }
  DATA-TYPE "ESSSiteMetadataDetail ::= SEQUENCE {
    site-id Organization-resource-identifier OPTIONAL,
    site-description Event-description-notes-and-comments,
    site-directions-description Event-description-notes-and-comments OPTIONAL,
    site-representativeness Event-description-notes-and-comments OPTIONAL,
    site-obstructions-description Event-description-notes-and-comments OPTIONAL,
    site-landscape-description Event-description-notes-and-comments OPTIONAL,
    site-has-access-control-flag Binary-flag OPTIONAL,
    site-roadway-name Transportation-network-name OPTIONAL,
    site-roadway-linear-reference Link-location-linear-reference OPTIONAL,
    site-roadway-linear-reference-version Link-location-linear-reference-version
  OPTIONAL,
    site-roadway-linear-reference-units LRMS.LRMMethod OPTIONAL,
    site-roadway-to-station-distance Ess-distance-meters OPTIONAL,
    site-roadway-to-station-elevation Ess-distance-meters OPTIONAL,
    site-jurisdiction-name Organization-resource-name OPTIONAL,
    site-state-code Contact-mailing-address-state OPTIONAL,
    site-country-code Ess-site-country-code OPTIONAL,
    site-slope-angle Ess-angle-degrees OPTIONAL,
    site-grade-direction Ess-angle-degrees OPTIONAL,
    site-wind-roughness-from-north Ess-observation-percent OPTIONAL,
    site-wind-roughness-from-south Ess-observation-percent OPTIONAL,
    site-wind-roughness-from-east Ess-observation-percent OPTIONAL,
    site-wind-roughness-from-west Ess-observation-percent OPTIONAL,
    site-soil-description Organization-resource-name OPTIONAL,
    site-soil-percent-sand Ess-observation-percent OPTIONAL,
    site-soil-percent-silt Ess-observation-percent OPTIONAL,
    site-soil-percent-clay Ess-observation-percent OPTIONAL,
    ... }"
```

3.3.7.14.2 XML REPRESENTATION

```
<xs:complexType name="ESSSiteMetadataDetail">
  <xs:sequence>
    <xs:element name="site-id" type="Organization-resource-identifier"
minOccurs="0"/>
    <xs:element name="site-description" type="Event-description-notes-
and-comments"/>
    <xs:element name="site-directions-description" type="Event-
description-notes-and-comments" minOccurs="0"/>
    <xs:element name="site-representativeness" type="Event-description-
notes-and-comments" minOccurs="0"/>
    <xs:element name="site-obstructions-description" type="Event-
description-notes-and-comments" minOccurs="0"/>
    <xs:element name="site-landscape-description" type="Event-
description-notes-and-comments" minOccurs="0"/>
    <xs:element name="site-has-access-control-flag" type="Binary-flag"
minOccurs="0"/>
    <xs:element name="site-roadway-name" type="Transportation-network-
name" minOccurs="0"/>
    <xs:element name="site-roadway-linear-reference" type="Link-location-
linear-reference" minOccurs="0"/>
    <xs:element name="site-roadway-linear-reference-version" type="Link-
location-linear-reference-version" minOccurs="0"/>
    <xs:element name="site-roadway-linear-reference-units"
type="lrms:LRMethod" minOccurs="0"/>
    <xs:element name="site-roadway-to-station-distance" type="Ess-
distance-meters" minOccurs="0"/>
    <xs:element name="site-roadway-to-station-elevation" type="Ess-
distance-meters" minOccurs="0"/>
    <xs:element name="site-jurisdiction-name" type="Organization-
resource-name" minOccurs="0"/>
    <xs:element name="site-state-code" type="Contact-mailing-address-
state" minOccurs="0"/>
    <xs:element name="site-country-code" type="Ess-site-country-code"
minOccurs="0"/>
    <xs:element name="site-slope-angle" type="Ess-angle-degrees"
minOccurs="0"/>
    <xs:element name="site-grade-direction" type="Ess-angle-degrees"
minOccurs="0"/>
    <xs:element name="site-wind-roughness-from-north" type="Ess-
observation-percent" minOccurs="0"/>
    <xs:element name="site-wind-roughness-from-south" type="Ess-
observation-percent" minOccurs="0"/>
    <xs:element name="site-wind-roughness-from-east" type="Ess-
observation-percent" minOccurs="0"/>
    <xs:element name="site-wind-roughness-from-west" type="Ess-
observation-percent" minOccurs="0"/>
    <xs:element name="site-soil-description" type="Organization-resource-
name" minOccurs="0"/>
    <xs:element name="site-soil-percent-sand" type="Ess-observation-
percent" minOccurs="0"/>
    <xs:element name="site-soil-percent-silt" type="Ess-observation-
percent" minOccurs="0"/>
    <xs:element name="site-soil-percent-clay" type="Ess-observation-
percent" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.7.15 eSSStationMetadataDetail

3.3.7.15.1 ASN.1 REPRESENTATION

```

eSSStationMetadataDetail ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ESSStationMetadataDetail:frame"
  ASN-NAME "ESSStationMetadataDetail"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 64 }
  DEFINITION "The information content describing the metadata for a station."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { lrmsDataFrames geoLocation(1) }, -- LRMS.GeoLocation
    { tmddDataFrames 156 }, -- ContactDetails
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { essNtcipIdentification 1 }, -- NTCIP.EssNtcipCategory
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { essNtcipHeight 1 }, -- NTCIP.EssReferenceHeight
    { tmddDataElements 79 }, -- Event-description-notes-and-comments
    { essBufrInstrumentation 1 }, -- NTCIP.EssTypeofStation
    { lrmsDataElements horizontalDatum(1) }, -- LRMS.HorizontalDatum
    { lrmsDataElements verticalDatum(1) }, -- LRMS.VerticalDatum
    { tmddDataElements 64 }, -- Ess-station-power-source
    { essNtcipInstrumentation 1 }, -- NTCIP.EssDoorStatus
    { essNtcipInstrumentation 2 }, -- NTCIP.EssBatteryStatus
    { essNtcipInstrumentation 3 }, -- NTCIP.EssLineVolts
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 65 }, -- Ess-time-span-days
    { tmddDataElements 62 }, -- Ess-station-maintenance-status
    { tmddDataElements 63 }, -- Ess-station-number-of-devices
    { tmddDataElements 61 }, -- Ess-station-comm-method
    { tmddDataElements 67 } -- Ess-time-span-minutes }
  DATA-TYPE "ESSStationMetadataDetail ::= SEQUENCE {
    station-category NTCIP.EssNtcipCategory,
    station-id Organization-resource-identifier,
    station-location LRMS.GeoLocation,
    station-elevation NTCIP.EssReferenceHeight,
    station-description Event-description-notes-and-comments OPTIONAL,
    station-type NTCIP.EssTypeofStation OPTIONAL,
    station-horizontal-datum LRMS.HorizontalDatum OPTIONAL,
    station-vertical-datum LRMS.VerticalDatum OPTIONAL,
    station-power-source Ess-station-power-source OPTIONAL,
    station-door-status NTCIP.EssDoorStatus OPTIONAL,
    station-battery-status NTCIP.EssBatteryStatus OPTIONAL,
    station-line-volts NTCIP.EssLineVolts OPTIONAL,
    station-maintenance-group-name Organization-resource-name OPTIONAL,
    station-maintenance-contact-information ContactDetails OPTIONAL,
    station-maintenance-frequency Ess-time-span-days OPTIONAL,
    station-maintenance-calibration-frequency Ess-time-span-days OPTIONAL,
    station-maintenance-status Ess-station-maintenance-status OPTIONAL,
    station-installation-date DateTimeZone OPTIONAL,
    station-number-of-devices Ess-station-number-of-devices OPTIONAL,
    station-comm-method Ess-station-comm-method OPTIONAL,
    station-telephone-number Organization-resource-identifier OPTIONAL,
    station-ip-address Organization-resource-identifier OPTIONAL,
    station-manufacturer Organization-resource-name OPTIONAL,
    station-observation-collection-frequency Ess-time-span-minutes OPTIONAL,
    station-observation-collection-offset Ess-time-span-minutes OPTIONAL,
    station-transmission-frequency Ess-time-span-minutes OPTIONAL,
    station-transmission-offset Ess-time-span-minutes OPTIONAL,
    station-transmission-format Organization-resource-name OPTIONAL,
    ... }"
}

```

3.3.7.15.2 XML REPRESENTATION

```
<xs:complexType name="ESSStationMetadataDetail">
  <xs:sequence>
    <xs:element name="station-category" type="ntcip:EssNtcipCategory"/>
    <xs:element name="station-id" type="Organization-resource-
  identifier"/>
    <xs:element name="station-location" type="lrms:GeoLocation"/>
    <xs:element name="station-elevation"
  type="ntcip:EssReferenceHeight"/>
    <xs:element name="station-description" type="Event-description-notes-
  and-comments" minOccurs="0"/>
    <xs:element name="station-type" type="ntcip:EssTypeofStation"
  minOccurs="0"/>
    <xs:element name="station-horizontal-datum"
  type="lrms:HorizontalDatum" minOccurs="0"/>
    <xs:element name="station-vertical-datum" type="lrms:VerticalDatum"
  minOccurs="0"/>
    <xs:element name="station-power-source" type="Ess-station-power-
  source" minOccurs="0"/>
    <xs:element name="station-door-status" type="ntcip:EssDoorStatus"
  minOccurs="0"/>
    <xs:element name="station-battery-status"
  type="ntcip:EssBatteryStatus" minOccurs="0"/>
    <xs:element name="station-line-volts" type="ntcip:EssLineVolts"
  minOccurs="0"/>
    <xs:element name="station-maintenance-group-name" type="Organization-
  resource-name" minOccurs="0"/>
    <xs:element name="station-maintenance-contact-information"
  type="ContactDetails" minOccurs="0"/>
    <xs:element name="station-maintenance-frequency" type="Ess-time-span-
  days" minOccurs="0"/>
    <xs:element name="station-maintenance-calibration-frequency"
  type="Ess-time-span-days" minOccurs="0"/>
    <xs:element name="station-maintenance-status" type="Ess-station-
  maintenance-status" minOccurs="0"/>
    <xs:element name="station-installation-date" type="DateTimeZone"
  minOccurs="0"/>
    <xs:element name="station-number-of-devices" type="Ess-station-
  number-of-devices" minOccurs="0"/>
    <xs:element name="station-comm-method" type="Ess-station-comm-method"
  minOccurs="0"/>
    <xs:element name="station-telephone-number" type="Organization-
  resource-identifier" minOccurs="0"/>
    <xs:element name="station-ip-address" type="Organization-resource-
  identifier" minOccurs="0"/>
    <xs:element name="station-manufacturer" type="Organization-resource-
  name" minOccurs="0"/>
    <xs:element name="station-observation-collection-frequency"
  type="Ess-time-span-minutes" minOccurs="0"/>
    <xs:element name="station-observation-collection-offset" type="Ess-
  time-span-minutes" minOccurs="0"/>
    <xs:element name="station-transmission-frequency" type="Ess-time-
  span-minutes" minOccurs="0"/>
    <xs:element name="station-transmission-offset" type="Ess-time-span-
  minutes" minOccurs="0"/>
    <xs:element name="station-transmission-format" type="Organization-
  resource-name" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.7.16 eSSStatus

3.3.7.16.1 ASN.1 REPRESENTATION

eSSStatus ITS-DATA-FRAME ::= {

```

DESCRIPTIVE-NAME "ESSStatus:frame"
ASN-NAME "ESSStatus"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 65 }
DEFINITION "The information content describing an owner center's environmental
sensor station status for a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 35 }, -- DeviceStatusHeader
    { tmddDataFrames 62 } -- ESSSensorStatusDetails }
DATA-TYPE "ESSStatus ::= SEQUENCE {
    ess-station-status-header DeviceStatusHeader,
    ess-sensor-list SEQUENCE (SIZE(0..64)) OF ESSSensorStatusDetails,
    ... }"
}

```

3.3.7.16.2 XML REPRESENTATION

```

<xs:complexType name="ESSStatus">
    <xs:sequence>
        <xs:element name="ess-station-status-header"
type="DeviceStatusHeader"/>
        <xs:element name="ess-sensor-list">
            <xs:complexType>
                <xs:sequence minOccurs="0" maxOccurs="64">
                    <xs:element name="ess-sensor"
type="ESSSensorStatusDetails"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8 Event Class Data Frames

3.3.8.1 actionLog

3.3.8.1.1 ASN.1 REPRESENTATION

```

actionLog ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "ActionLog:frame"
ASN-NAME "ActionLog"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 66 }
DEFINITION "The information content describing an operators communications log
and/or update log to event information."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 114 } -- DateTimeZone
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 71 }, -- Event-action-log-element-identifier
    { tmddDataElements 79 }, -- Event-description-notes-and-comments
    { tmddDataElements 72 } -- Event-action-type }
DATA-TYPE "ActionLog ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    event-id Organization-resource-identifier,
    action-log-element-id Event-action-log-element-identifier,
    action-time DateTimeZone,

```

```

        action-description Event-description-notes-and-comments,
        action-type Event-action-type,
        ... }"
    }

```

3.3.8.1.2 XML REPRESENTATION

```

<xs:complexType name="ActionLog">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="event-id" type="Organization-resource-identifier"/>
        <xs:element name="action-log-element-id" type="Event-action-log-
element-identifier"/>
        <xs:element name="action-time" type="DateTimeZone"/>
        <xs:element name="action-description" type="Event-description-notes-
and-comments"/>
        <xs:element name="action-type" type="Event-action-type"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8.2 additionalText

3.3.8.2.1 ASN.1 REPRESENTATION

```

additionalText ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "AdditionalText:frame"
    ASN-NAME "AdditionalText"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 67 }
    DEFINITION "Additional event information content including notes, comments,
    language for the previous, and reporting medium."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 79 }, -- Event-description-notes-and-comments
        { tmddDataElements 78 }, -- Event-description-language
        { tmddDataElements 105 } -- Event-report-medium }
    DATA-TYPE "AdditionalText ::= SEQUENCE {
        description Event-description-notes-and-comments,
        language Event-description-language OPTIONAL,
        report-medium Event-report-medium OPTIONAL,
        ... }"
}

```

3.3.8.2.2 XML REPRESENTATION

```

<xs:complexType name="AdditionalText">
    <xs:sequence>
        <xs:element name="description" type="Event-description-notes-and-
comments"/>
        <xs:element name="language" type="Event-description-language"
minOccurs="0"/>
        <xs:element name="report-medium" type="Event-report-medium"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8.3 alternateRouteDetail

3.3.8.3.1 ASN.1 REPRESENTATION

```

alternateRouteDetail ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "AlternateRouteDetail:frame"
  ASN-NAME "AlternateRouteDetail"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 68 }
  DEFINITION      "The information content describing an alternate route associated
  with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 97 }, -- LandmarkLocation
    { tmddDataFrames 98 } -- LinkLocation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 74 } -- Event-alternate-route-type }
  DATA-TYPE "AlternateRouteDetail ::= SEQUENCE {
    alternate-route-type Event-alternate-route-type,
    destination LandmarkLocation OPTIONAL,
    location-on-alternate-route SEQUENCE (SIZE(1..10)) OF LinkLocation OPTIONAL,
    ... }"
}

```

3.3.8.3.2 XML REPRESENTATION

```

<xs:complexType name="AlternateRouteDetail">
  <xs:sequence>
    <xs:element name="alternate-route-type" type="Event-alternate-route-
type"/>
    <xs:element name="destination" type="LandmarkLocation"
minOccurs="0"/>
    <xs:element name="location-on-alternate-route" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="10">
          <xs:element name="location-on-alternate-
route-item" type="LinkLocation"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.8.4 areaLocation

3.3.8.4.1 ASN.1 REPRESENTATION

```

areaLocation ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "AreaLocation:frame"
  ASN-NAME "AreaLocation"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 69 }
  DEFINITION      "The information content describing an area location associated with
  an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 69 } -- AreaLocation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 94 }, -- Event-location-area-identifier
    { tmddDataElements 75 }, -- Event-area-name
    { tmddDataElements 97 } -- Event-location-rank }
  DATA-TYPE "AreaLocation ::= SEQUENCE {

```

```

    area-id Event-location-area-identifier OPTIONAL,
    area-name Event-area-name OPTIONAL,
    location-rank Event-location-rank OPTIONAL,
    upward-area-reference AreaLocation OPTIONAL,
    ... }"
}

```

3.3.8.4.2 XML REPRESENTATION

```

<xs:complexType name="AreaLocation">
  <xs:sequence>
    <xs:element name="area-id" type="Event-location-area-identifier"
minOccurs="0"/>
    <xs:element name="area-name" type="Event-area-name" minOccurs="0"/>
    <xs:element name="location-rank" type="Event-location-rank"
minOccurs="0"/>
    <xs:element name="upward-area-reference" type="AreaLocation"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.8.5 dataExtent

3.3.8.5.1 ASN.1 REPRESENTATION

```

dataExtent ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DataExtent:frame"
  ASN-NAME "DataExtent"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 70 }
  DEFINITION "The information content describing the spatial quantities (length,
altitude, and range) associated an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 92 }, -- Event-length-affected
    { tmddDataElements 103 }, -- Event-proportion-affected
    { tmddDataElements 95 } -- Event-location-coordinates-altitude }
  DATA-TYPE "DataExtent ::= CHOICE {
    length-affected Event-length-affected,
    proportion-affected Event-proportion-affected,
    above-altitude Event-location-coordinates-altitude,
    below-altitude Event-location-coordinates-altitude,
    ... }"
}

```

3.3.8.5.2 XML REPRESENTATION

```

<xs:complexType name="DataExtent">
  <xs:choice>
    <xs:element name="length-affected" type="Event-length-affected"/>
    <xs:element name="proportion-affected" type="Event-proportion-
affected"/>
    <xs:element name="above-altitude" type="Event-location-coordinates-
altitude"/>
    <xs:element name="below-altitude" type="Event-location-coordinates-
altitude"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```


3.3.8.6 dataIncidentDetails

3.3.8.6.1 ASN.1 REPRESENTATION

```
dataIncidentDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DataIncidentDetails:frame"
  ASN-NAME "DataIncidentDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 71 }
  DEFINITION          "The information content describing the vehicle and human injury and
  fatality quantities associated an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 89 }, -- Event-incident-vehicles-involved-count
    { tmddDataElements 87 } -- Event-incident-humans-involved-count }
  DATA-TYPE "DataIncidentDetails ::= CHOICE {
    vehicles-involved-count Event-incident-vehicles-involved-count,
    cars-involved-count Event-incident-vehicles-involved-count,
    trucks-involved-count Event-incident-vehicles-involved-count,
    buses-involved-count Event-incident-vehicles-involved-count,
    human-fatalities-count Event-incident-humans-involved-count,
    human-injuries-count Event-incident-humans-involved-count,
    human-major-injuries-count Event-incident-humans-involved-count,
    human-minor-injuries-count Event-incident-humans-involved-count,
    ... }"
}
```

3.3.8.6.2 XML REPRESENTATION

```
<xs:complexType name="DataIncidentDetails">
  <xs:choice>
    <xs:element name="vehicles-involved-count" type="Event-incident-
vehicles-involved-count"/>
    <xs:element name="cars-involved-count" type="Event-incident-vehicles-
involved-count"/>
    <xs:element name="trucks-involved-count" type="Event-incident-
vehicles-involved-count"/>
    <xs:element name="buses-involved-count" type="Event-incident-
vehicles-involved-count"/>
    <xs:element name="human-fatalities-count" type="Event-incident-
humans-involved-count"/>
    <xs:element name="human-injuries-count" type="Event-incident-humans-
involved-count"/>
    <xs:element name="human-major-injuries-count" type="Event-incident-
humans-involved-count"/>
    <xs:element name="human-minor-injuries-count" type="Event-incident-
humans-involved-count"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>
```

3.3.8.7 dataLinkRestrictions

3.3.8.7.1 ASN.1 REPRESENTATION

```
dataLinkRestrictions ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DataLinkRestrictions:frame"
  ASN-NAME "DataLinkRestrictions"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 72 }
  DEFINITION          "The information content describing the vehicle and speed
  restrictions on a roadway link."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
```

```
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 173 }, -- Link-speed-limit
    { tmddDataElements 165 }, -- Link-restriction-length
    { tmddDataElements 164 }, -- Link-restriction-height
    { tmddDataElements 169 }, -- Link-restriction-width
    { tmddDataElements 168 }, -- Link-restriction-weight-vehicle
    { tmddDataElements 167 }, -- Link-restriction-weight-axle
    { tmddDataElements 163 } -- Link-restriction-axle-count }
DATA-TYPE "DataLinkRestrictions" ::= CHOICE {
    speed-limit-advisory Link-speed-limit,
    speed-limit Link-speed-limit,
    speed-limit-truck Link-speed-limit,
    restriction-length Link-restriction-length,
    restriction-height Link-restriction-height,
    restriction-width Link-restriction-width,
    restriction-weight-vehicle Link-restriction-weight-vehicle,
    restriction-weight-axle Link-restriction-weight-axle,
    restriction-axle-count Link-restriction-axle-count,
    ... }"
}
```

3.3.8.7.2 XML REPRESENTATION

```
<xs:complexType name="DataLinkRestrictions">
    <xs:choice>
        <xs:element name="speed-limit-advisory" type="Link-speed-limit"/>
        <xs:element name="speed-limit" type="Link-speed-limit"/>
        <xs:element name="speed-limit-truck" type="Link-speed-limit"/>
        <xs:element name="restriction-length" type="Link-restriction-
length"/>
        <xs:element name="restriction-height" type="Link-restriction-
height"/>
        <xs:element name="restriction-width" type="Link-restriction-width"/>
        <xs:element name="restriction-weight-vehicle" type="Link-restriction-
weight-vehicle"/>
        <xs:element name="restriction-weight-axle" type="Link-restriction-
weight-axle"/>
        <xs:element name="restriction-axle-count" type="Link-restriction-
axle-count"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:choice>
</xs:complexType>
```

3.3.8.8 dataLinkState

3.3.8.8.1 ASN.1 REPRESENTATION

```
dataLinkState ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DataLinkState:frame"
    ASN-NAME "DataLinkState"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 73 }
    DEFINITION "The information content describing the current state quantities for
travel time, speed, delay, and capacity on a roadway link."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 148 }, -- Link-delay
        { tmddDataElements 143 }, -- Link-alternate-route-delay
        { tmddDataElements 151 }, -- Link-headway
        { tmddDataElements 178 }, -- Link-travel-time
    }
```

```

{ tmddDataElements 145 }, -- Link-capacity-existing
{ tmddDataElements 179 }, -- Link-travel-time-increase
{ tmddDataElements 172 }, -- Link-speed-average
{ tmddDataElements 110 }, -- Event-speed-vehicle-estimated
{ tmddDataElements 81 }, -- Event-description-time
{ tmddDataElements 149 }, -- Link-density
{ tmddDataElements 159 }, -- Link-occupancy
{ tmddDataElements 181 } -- Link-volume }
DATA-TYPE "DataLinkState ::= CHOICE {
    delay Link-delay,
    peak-delay Link-delay,
    alternate-route-delay Link-alternate-route-delay,
    alternate-route-peak-delay Link-alternate-route-delay,
    headway Link-headway,
    travel-time Link-travel-time,
    capacity-existing Link-capacity-existing,
    travel-time-increase Link-travel-time-increase,
    speed-average Link-speed-average,
    speed-vehicle-estimated Event-speed-vehicle-estimated,
    description-time Event-description-time,
    density Link-density,
    occupancy Link-occupancy,
    volume Link-volume,
    ... }"
}

```

3.3.8.8.2 XML REPRESENTATION

```

<xs:complexType name="DataLinkState">
  <xs:choice>
    <xs:element name="delay" type="Link-delay"/>
    <xs:element name="peak-delay" type="Link-delay"/>
    <xs:element name="alternate-route-delay" type="Link-alternate-route-
delay"/>
    <xs:element name="alternate-route-peak-delay" type="Link-alternate-
route-delay"/>
    <xs:element name="headway" type="Link-headway"/>
    <xs:element name="travel-time" type="Link-travel-time"/>
    <xs:element name="capacity-existing" type="Link-capacity-existing"/>
    <xs:element name="travel-time-increase" type="Link-travel-time-
increase"/>
    <xs:element name="speed-average" type="Link-speed-average"/>
    <xs:element name="speed-vehicle-estimated" type="Event-speed-vehicle-
estimated"/>
    <xs:element name="description-time" type="Event-description-time"/>
    <xs:element name="density" type="Link-density"/>
    <xs:element name="occupancy" type="Link-occupancy"/>
    <xs:element name="volume" type="Link-volume"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.8.9 dataParking

3.3.8.9.1 ASN.1 REPRESENTATION

```

dataParking ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DataParking:frame"
  ASN-NAME "DataParking"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 74 }
  DEFINITION "The information content describing the current state quantities for
parking."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
}

```

```
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 100 }, -- Event-parking-number-of-spaces
    { tmddDataElements 101 } -- Event-parking-occupancy }
DATA-TYPE "DataParking ::= CHOICE {
    parking-spaces Event-parking-number-of-spaces,
    parking-occupancy Event-parking-occupancy,
    ... }"
```

3.3.8.9.2 XML REPRESENTATION

```
<xs:complexType name="DataParking">
    <xs:choice>
        <xs:element name="parking-spaces" type="Event-parking-number-of-spaces"/>
        <xs:element name="parking-occupancy" type="Event-parking-occupancy"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:choice>
</xs:complexType>
```

3.3.8.10 dataRoadWeather

3.3.8.10.1 ASN.1 REPRESENTATION

```
dataRoadWeather ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "DataRoadWeather:frame"
    ASN-NAME "DataRoadWeather"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 75 }
    DEFINITION "The information content describing the current state quantities for roadway weather."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { essBufrWind 1 }, -- NTCIP.EssAvgWindDirection
        { essBufrWind 2 }, -- NTCIP.EssAvgWindSpeed
        { tmddDataElements 36 }, -- Ess-avg-wind-gust-speed
        { essTemperatureSensorEntry 3 }, -- NTCIP.EssAirTemperature
        { essNtcipTemperature 4 }, -- NTCIP.EssDewpointTemp
        { essNtcipTemperature 5 }, -- NTCIP.EssMaxTemp
        { essNtcipTemperature 6 }, -- NTCIP.EssMinTemp
        { essBufrPrecip 3 }, -- NTCIP.EssRelativeHumidity
        { essBufrLocationVertical 4 }, -- NTCIP.EssAtmosphericPressure
        { essBufrPrecip 14 }, -- NTCIP.EssPrecipRate
        { essBufrPrecip 15 }, -- NTCIP.EssSnowfallAccumRate
        { essNtcipVisibility 1 }, -- NTCIP.EssVisibility
        { tmddDataElements 69 }, -- Ess-uv-index
        { tmddDataElements 56 } -- Ess-probability }
    DATA-TYPE "DataRoadWeather ::= CHOICE {
        avg-wind-direction NTCIP.EssAvgWindDirection,
        avg-wind-speed NTCIP.EssAvgWindSpeed,
        avg-wind-gust-speed Ess-avg-wind-gust-speed,
        air-temperature NTCIP.EssAirTemperature,
        dewpoint-temp NTCIP.EssDewpointTemp,
        max-temp NTCIP.EssMaxTemp,
        min-temp NTCIP.EssMinTemp,
        relative-humidity NTCIP.EssRelativeHumidity,
        atmospheric-pressure NTCIP.EssAtmosphericPressure,
        precip-rate NTCIP.EssPrecipRate,
        snowfall-accum-rate NTCIP.EssSnowfallAccumRate,
        visibility NTCIP.EssVisibility,
```

```

    uv-index Ess-uv-index,
    probability Ess-probability,
    ... }"
}

```

3.3.8.10.2 XML REPRESENTATION

```

<xs:complexType name="DataRoadWeather">
  <xs:choice>
    <xs:element name="avg-wind-direction"
type="ntcip:EssAvgWindDirection"/>
    <xs:element name="avg-wind-speed" type="ntcip:EssAvgWindSpeed"/>
    <xs:element name="avg-wind-gust-speed" type="Ess-avg-wind-gust-
speed"/>
    <xs:element name="air-temperature" type="ntcip:EssAirTemperature"/>
    <xs:element name="dewpoint-temp" type="ntcip:EssDewpointTemp"/>
    <xs:element name="max-temp" type="ntcip:EssMaxTemp"/>
    <xs:element name="min-temp" type="ntcip:EssMinTemp"/>
    <xs:element name="relative-humidity"
type="ntcip:EssRelativeHumidity"/>
    <xs:element name="atmospheric-pressure"
type="ntcip:EssAtmosphericPressure"/>
    <xs:element name="precip-rate" type="ntcip:EssPrecipRate"/>
    <xs:element name="snowfall-accum-rate"
type="ntcip:EssSnowfallAccumRate"/>
    <xs:element name="visibility" type="ntcip:EssVisibility"/>
    <xs:element name="uv-index" type="Ess-uv-index"/>
    <xs:element name="probability" type="Ess-probability"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.8.11 dataSurfaceConditions

3.3.8.11.1 ASN.1 REPRESENTATION

```

dataSurfaceConditions ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DataSurfaceConditions:frame"
  ASN-NAME "DataSurfaceConditions"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 76 }
  DEFINITION "The information content describing the current state quantities for
roadway surface conditions."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { essNtcipPrecip 1 }, -- NTCIP.EssWaterDepth
    { essNtcipPrecip 2 }, -- NTCIP.EssAdjacentSnowDepth
    { essNtcipPrecip 3 }, -- NTCIP.EssRoadwaySnowDepth
    { essNtcipPrecip 4 }, -- NTCIP.EssRoadwaySnowPackDepth
    { essNtcipPrecip 7 }, -- NTCIP.EssIceThickness
    { essPavementSensorEntry 8 }, -- NTCIP.EssSurfaceTemperature
    { essPavementSensorEntry 9 }, -- NTCIP.EssPavementTemperature
    { essPavementSensorEntry 10 }, -- NTCIP.EssSurfaceWaterDepth
    { essPavementSensorEntry 11 }, -- NTCIP.EssSurfaceSalinity
    { essPavementSensorEntry 13 }, -- NTCIP.EssSurfaceFreezePoint
    { essNtcipMobile 1 } -- NTCIP.EssMobileFriction }
  DATA-TYPE "DataSurfaceConditions ::= CHOICE {
    water-depth NTCIP.EssWaterDepth,
    adjacent-snow-depth NTCIP.EssAdjacentSnowDepth,
    roadway-snow-depth NTCIP.EssRoadwaySnowDepth,
    roadway-snow-pack-depth NTCIP.EssRoadwaySnowPackDepth,
    ice-thickness NTCIP.EssIceThickness,

```

```

    surface-temperature NTCIP.EssSurfaceTemperature,
    pavement-temperature NTCIP.EssPavementTemperature,
    surface-water-depth NTCIP.EssSurfaceWaterDepth,
    surface-salinity NTCIP.EssSurfaceSalinity,
    surface-freeze-point NTCIP.EssSurfaceFreezePoint,
    mobile-friction NTCIP.EssMobileFriction,
    ... }"
}

```

3.3.8.11.2 XML REPRESENTATION

```

<xs:complexType name="DataSurfaceConditions">
  <xs:choice>
    <xs:element name="water-depth" type="ntcip:EssWaterDepth"/>
    <xs:element name="adjacent-snow-depth"
type="ntcip:EssAdjacentSnowDepth"/>
    <xs:element name="roadway-snow-depth"
type="ntcip:EssRoadwaySnowDepth"/>
    <xs:element name="roadway-snow-pack-depth"
type="ntcip:EssRoadwaySnowPackDepth"/>
    <xs:element name="ice-thickness" type="ntcip:EssIceThickness"/>
    <xs:element name="surface-temperature"
type="ntcip:EssSurfaceTemperature"/>
    <xs:element name="pavement-temperature"
type="ntcip:EssPavementTemperature"/>
    <xs:element name="surface-water-depth"
type="ntcip:EssSurfaceWaterDepth"/>
    <xs:element name="surface-salinity" type="ntcip:EssSurfaceSalinity"/>
    <xs:element name="surface-freeze-point"
type="ntcip:EssSurfaceFreezePoint"/>
    <xs:element name="mobile-friction" type="ntcip:EssMobileFriction"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.8.12 eventAdvice

3.3.8.12.1 ASN.1 REPRESENTATION

```

eventAdvice ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventAdvice:frame"
  ASN-NAME "EventAdvice"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 77 }
  DEFINITION "The information content describing the advisories associated with an
event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { itisDataElements suggestionAdvice\(1\) }, -- ITIS.SuggestionAdvice
    { itisDataElements warningAdvice\(1\) }, -- ITIS.WarningAdvice
    { itisDataElements adviceInstructionsRecommendations\(1\) }, --
ITIS.AdviceInstructionsRecommendations
    { itisDataElements adviceInstructionsMandatory\(1\) }, --
ITIS.AdviceInstructionsMandatory
    { itisDataElements alternateRoute\(1\) } -- ITIS.AlternateRoute }
  DATA-TYPE "EventAdvice ::= CHOICE {
    suggestion ITIS.SuggestionAdvice,
    warning ITIS.WarningAdvice,
    instruction-recommendation ITIS.AdviceInstructionsRecommendations,
    instruction-mandatory ITIS.AdviceInstructionsMandatory,
    alternate-route ITIS.AlternateRoute,
    ... }"
}

```

}

3.3.8.12.2 XML REPRESENTATION

```
<xs:complexType name="EventAdvice">
  <xs:choice>
    <xs:element name="suggestion" type="itis:SuggestionAdvice"/>
    <xs:element name="warning" type="itis:WarningAdvice"/>
    <xs:element name="instruction-recommendation"
type="itis:AdviceInstructionsRecommendations"/>
    <xs:element name="instruction-mandatory"
type="itis:AdviceInstructionsMandatory"/>
    <xs:element name="alternate-route" type="itis:AlternateRoute"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>
```

3.3.8.13 eventComments

3.3.8.13.1 ASN.1 REPRESENTATION

```
eventComments ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventComments:frame"
  ASN-NAME "EventComments"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 78 }
  DEFINITION "Descriptive event information content including notes, comments,
  language for the previous, and reporting medium. "
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 79 }, -- Event-description-notes-and-comments
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 78 } -- Event-description-language }
  DATA-TYPE "EventComments" ::= SEQUENCE {
    event-comment Event-description-notes-and-comments,
    operator-id Organization-resource-identifier OPTIONAL,
    operator-comment Event-description-notes-and-comments OPTIONAL,
    language Event-description-language OPTIONAL,
    ... }"
}
```

3.3.8.13.2 XML REPRESENTATION

```
<xs:complexType name="EventComments">
  <xs:sequence>
    <xs:element name="event-comment" type="Event-description-notes-and-
comments"/>
    <xs:element name="operator-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="operator-comment" type="Event-description-notes-
and-comments" minOccurs="0"/>
    <xs:element name="language" type="Event-description-language"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.8.14 eventDescription

3.3.8.14.1 ASN.1 REPRESENTATION

```
eventDescription ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventDescription:frame"
  ASN-NAME "EventDescription"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 79 }
  DEFINITION          "The information content describing the event including phrases,
  causes, quantities, advisories, descriptive text, and related locations associated
  with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 94 }, -- EventType
    { tmddDataFrames 77 }, -- EventAdvice
    { tmddDataFrames 88 }, -- EventQualifier
    { tmddDataFrames 89 }, -- EventQuantity
    { tmddDataFrames 97 }, -- LandmarkLocation
    { tmddDataFrames 68 }, -- AlternateRouteDetail
    { tmddDataFrames 67 }, -- AdditionalText
    { tmddDataFrames 114 } -- DateTimeZone  }
  DATA-TYPE "EventDescription" ::= CHOICE {
    phrase EventType,
    cause EventType,
    advice EventAdvice,
    qualifier EventQualifier,
    quantity EventQuantity,
    related-landmark LandmarkLocation,
    detour AlternateRouteDetail,
    additional-text AdditionalText,
    qualifier-time DateTimeZone,
    ...  }"
}
```

3.3.8.14.2 XML REPRESENTATION

```
<xs:complexType name="EventDescription">
  <xs:choice>
    <xs:element name="phrase" type="EventType"/>
    <xs:element name="cause" type="EventType"/>
    <xs:element name="advice" type="EventAdvice"/>
    <xs:element name="qualifier" type="EventQualifier"/>
    <xs:element name="quantity" type="EventQuantity"/>
    <xs:element name="related-landmark" type="LandmarkLocation"/>
    <xs:element name="detour" type="AlternateRouteDetail"/>
    <xs:element name="additional-text" type="AdditionalText"/>
    <xs:element name="qualifier-time" type="DateTimeZone"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>
```

3.3.8.15 eventElementDetail

3.3.8.15.1 ASN.1 REPRESENTATION

```
eventElementDetail ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventElementDetail:frame"
  ASN-NAME "EventElementDetail"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 80 }
  DEFINITION          "The information content describing an event element detail, which
  itself may be the scale of an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
```



```

    { tmddDataFrames 91 }, -- EventSource
    { tmddDataFrames 79 }, -- EventDescription
    { tmddDataFrames 86 }, -- EventLocation
    { tmddDataFrames 92 }, -- EventTimes
    { tmddDataFrames 85 }, -- EventLane
    { tmddDataFrames 93 }, -- EventTransitLocation
    { tmddDataFrames 188 } -- Hazmat
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 84 }, -- Event-element-identifier
    { tmddDataElements 107 }, -- Event-schedule-element-identifier
    { tmddDataElements 76 }, -- Event-category
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 77 }, -- Event-description-confidence-level
    { tmddDataElements 70 } -- Event-access-level
}
DATA-TYPE "EventElementDetail ::= SEQUENCE {
    element-id Event-element-identifier OPTIONAL,
    schedule-element-id Event-schedule-element-identifier OPTIONAL,
    event-category Event-category OPTIONAL,
    event-source EventSource OPTIONAL,
    event-descriptions SEQUENCE (SIZE(1..1024)) OF EventDescription OPTIONAL,
    event-locations SEQUENCE (SIZE(1..20)) OF EventLocation OPTIONAL,
    event-times EventTimes,
    event-name Organization-resource-name OPTIONAL,
    event-lanes SEQUENCE (SIZE(1..256)) OF EventLane OPTIONAL,
    event-transit-locations SEQUENCE (SIZE(1..100)) OF EventTransitLocation OPTIONAL,
    event-hazmat-details SEQUENCE (SIZE(1..100)) OF Hazmat OPTIONAL,
    confidence-level Event-description-confidence-level OPTIONAL,
    access-level Event-access-level OPTIONAL,
    ... }"
}

```

3.3.8.15.2 XML REPRESENTATION

```

<xs:complexType name="EventElementDetail">
  <xs:sequence>
    <xs:element name="element-id" type="Event-element-identifier"
minOccurs="0"/>
    <xs:element name="schedule-element-id" type="Event-schedule-element-
identifier" minOccurs="0"/>
    <xs:element name="event-category" type="Event-category"
minOccurs="0"/>
    <xs:element name="event-source" type="EventSource" minOccurs="0"/>
    <xs:element name="event-descriptions" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="1024">
          <xs:element name="event-description"
type="EventDescription"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="event-locations" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="20">
          <xs:element name="event-location"
type="EventLocation"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="event-times" type="EventTimes"/>
    <xs:element name="event-name" type="Organization-resource-name"
minOccurs="0"/>
    <xs:element name="event-lanes" minOccurs="0">
      <xs:complexType>

```

```

        <xs:sequence maxOccurs="256">
            <xs:element name="event-lane"
type="EventLane"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="event-transit-locations" minOccurs="0">
    <xs:complexType>
        <xs:sequence maxOccurs="100">
            <xs:element name="event-transit-location-
item" type="EventTransitLocation"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="event-hazmat-details" minOccurs="0">
    <xs:complexType>
        <xs:sequence maxOccurs="100">
            <xs:element name="event-hazmat-details-item"
type="Hazmat"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="confidence-level" type="Event-description-
confidence-level" minOccurs="0"/>
<xs:element name="access-level" type="Event-access-level"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

3.3.8.16 eventFilterRequest

3.3.8.16.1 ASN.1 REPRESENTATION

```

eventFilterRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "EventFilterRequest:frame"
    ASN-NAME "EventFilterRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 81 }
    DEFINITION "The information content necessary to request an owner center's
events."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 9 }, -- Authentication
        { tmddDataFrames 105 }, -- RequestHeader
        { tmddDataFrames 108 }, -- RequestType
        { tmddDataFrames 104 }, -- RequestFilter
        { tmddDataFrames 106 }, -- RequestLocation
        { tmddDataFrames 107 } -- RequestTimes }
    DATA-TYPE "EventFilterRequest ::= SEQUENCE {
        authentication Authentication OPTIONAL,
        request-header RequestHeader,
        request-type RequestType,
        request-filters SEQUENCE (SIZE(1..64)) OF RequestFilter OPTIONAL,
        request-locations SEQUENCE (SIZE(1..64)) OF RequestLocation OPTIONAL,
        request-times RequestTimes OPTIONAL,
        ... }"
}

```

3.3.8.16.2 XML REPRESENTATION

```

<xs:complexType name="EventFilterRequest">

```

```

        <xs:sequence>
            <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
            <xs:element name="request-header" type="RequestHeader"/>
            <xs:element name="request-type" type="RequestType"/>
            <xs:element name="request-filters" minOccurs="0">
                <xs:complexType>
                    <xs:sequence maxOccurs="64">
                        <xs:element name="request-filter"
type="RequestFilter"/>
                    </xs:sequence>
                </xs:complexType>
            </xs:element>
            <xs:element name="request-locations" minOccurs="0">
                <xs:complexType>
                    <xs:sequence maxOccurs="64">
                        <xs:element name="request-location"
type="RequestLocation"/>
                    </xs:sequence>
                </xs:complexType>
            </xs:element>
            <xs:element name="request-times" type="RequestTimes" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>

```

3.3.8.17 eventHeadline

3.3.8.17.1 ASN.1 REPRESENTATION

```

eventHeadline ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "EventHeadline:frame"
    ASN-NAME "EventHeadline"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 82 }
    DEFINITION "The information content describing an event, including a list of
phrases and identification of the key phrase."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 94 } -- EventType
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 85 } -- Event-headline-element }
    DATA-TYPE "EventHeadline ::= SEQUENCE {
        headline EventType,
        headline-element Event-headline-element OPTIONAL,
        ... }"
}

```

3.3.8.17.2 XML REPRESENTATION

```

<xs:complexType name="EventHeadline">
    <xs:sequence>
        <xs:element name="headline" type="EventType"/>
        <xs:element name="headline-element" type="Event-headline-element"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8.18 eventIndex

3.3.8.18.1 *ASN.1 REPRESENTATION*

```
eventIndex ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventIndex:frame"
  ASN-NAME "EventIndex"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 84 }
  DEFINITION "An list of references to an owner center's events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 115 }, -- UriReference
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 115 }, -- Event-update
    { tmddDataElements 88 } -- Event-incident-status
  }
  DATA-TYPE "EventIndex ::= SEQUENCE {
    feu-url UriReference,
    file-update-time DateTimeZone OPTIONAL,
    event-update-time DateTimeZone,
    event-id Organization-resource-identifier,
    event-update Event-update,
    status Event-incident-status,
    ... }"
}
```

3.3.8.18.2 *XML REPRESENTATION*

```
<xs:complexType name="EventIndex">
  <xs:sequence>
    <xs:element name="feu-url" type="UriReference"/>
    <xs:element name="file-update-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="event-update-time" type="DateTimeZone"/>
    <xs:element name="event-id" type="Organization-resource-identifier"/>
    <xs:element name="event-update" type="Event-update"/>
    <xs:element name="status" type="Event-incident-status"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.8.19 **eventIndicator**

3.3.8.19.1 *ASN.1 REPRESENTATION*

```
eventIndicator ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventIndicator:frame"
  ASN-NAME "EventIndicator"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 83 }
  DEFINITION "The information content describing the severity and impact level of
an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 88 }, -- Event-incident-status
    { tmddDataElements 118 }, -- Binary-flag
    { tmddDataElements 80 }, -- Event-description-priority-level
    { tmddDataElements 108 }, -- Event-severity
    { tmddDataElements 90 }, -- Event-impact-level
    { tmddDataElements 102 } -- Event-planned-event-class
  }
```

```
DATA-TYPE "EventIndicator ::= CHOICE {
    status Event-incident-status,
    duration-exceeded-flag Binary-flag,
    priority-level Event-description-priority-level,
    severity Event-severity,
    impact-level Event-impact-level,
    active-flag Binary-flag,
    planned-event-class Event-planned-event-class,
    ... }"
```

3.3.8.19.2 XML REPRESENTATION

```
<xs:complexType name="EventIndicator">
    <xs:choice>
        <xs:element name="status" type="Event-incident-status"/>
        <xs:element name="duration-exceeded-flag" type="Binary-flag"/>
        <xs:element name="priority-level" type="Event-description-priority-
level"/>
        <xs:element name="severity" type="Event-severity"/>
        <xs:element name="impact-level" type="Event-impact-level"/>
        <xs:element name="active-flag" type="Binary-flag"/>
        <xs:element name="planned-event-class" type="Event-planned-event-
class"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:choice>
</xs:complexType>
```

3.3.8.20 eventLane

3.3.8.20.1 ASN.1 REPRESENTATION

```
eventLane ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "EventLane:frame"
    ASN-NAME "EventLane"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 85 }
    DEFINITION "The information content describing the lanes total and affected
associated with an event."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { itisDataElements laneRoadway(1) }, -- ITIS.LaneRoadway
        { tmddDataElements 150 }, -- Link-direction
        { tmddDataElements 153 }, -- Link-lanes-count
        { tmddDataElements 152 }, -- Link-lane-number
        { itisDataElements closures(1) } -- ITIS.Closures }
    DATA-TYPE "EventLane ::= SEQUENCE {
        lanes-type ITIS.LaneRoadway OPTIONAL,
        link-direction Link-direction OPTIONAL,
        lanes-total-original Link-lanes-count OPTIONAL,
        lanes-total-affected Link-lanes-count OPTIONAL,
        event-lanes-affected SEQUENCE (SIZE(1..64)) OF Link-lane-number OPTIONAL,
        lanes-status ITIS.Closures OPTIONAL,
        ... }"
```

3.3.8.20.2 XML REPRESENTATION

```
<xs:complexType name="EventLane">
    <xs:sequence>
        <xs:element name="lanes-type" type="itis:LaneRoadway" minOccurs="0"/>
```

```

minOccurs="0"/>
<xs:element name="link-direction" type="Link-direction"
minOccurs="0"/>
<xs:element name="lanes-total-original" type="Link-lanes-count"
minOccurs="0"/>
<xs:element name="lanes-total-affected" type="Link-lanes-count"
minOccurs="0"/>
<xs:element name="event-lanes-affected" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="64">
      <xs:element name="lanes" type="Link-lane-
number"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="lanes-status" type="itis:Closures" minOccurs="0"/>
<xs:any namespace="##other" processContents="lax" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

3.3.8.21 eventLocation

3.3.8.21.1 ASN.1 REPRESENTATION

```

eventLocation ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventLocation:frame"
  ASN-NAME "EventLocation"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 86 }
  DEFINITION "The information content describing a point, area, landmark, or link
  associated with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 69 }, -- AreaLocation
    { tmddDataFrames 98 }, -- LinkLocation
    { tmddDataFrames 97 }, -- LandmarkLocation
    { lrmsDataFrames geoLocation\(1\) } -- LRMS.GeoLocation }
  DATA-TYPE "EventLocation ::= CHOICE {
    area-location AreaLocation,
    location-on-link LinkLocation,
    landmark LandmarkLocation,
    geo-location LRMS.GeoLocation,
    ... }"
}

```

3.3.8.21.2 XML REPRESENTATION

```

<xs:complexType name="EventLocation">
  <xs:choice>
    <xs:element name="area-location" type="AreaLocation"/>
    <xs:element name="location-on-link" type="LinkLocation"/>
    <xs:element name="landmark" type="LandmarkLocation"/>
    <xs:element name="geo-location" type="lrms:GeoLocation"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.8.22 eventPeriod

3.3.8.22.1 ASN.1 REPRESENTATION

```

eventPeriod ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventPeriod:frame"

```

```
ASN-NAME "EventPeriod"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 87 }
DEFINITION "The information content describing the holiday, specific day, and
recurrent times for a schedule associated with an event."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 112 }, -- Event-timeline-schedule-days-of-the-week
    { tmddDataElements 83 }, -- Event-effective-period-qualifier
    { tmddDataElements 86 } -- Event-holiday-day }
DATA-TYPE "EventPeriod ::= SEQUENCE {
    days-of-the-week Event-timeline-schedule-days-of-the-week,
    effective-period-qualifier Event-effective-period-qualifier OPTIONAL,
    holiday-day Event-holiday-day OPTIONAL,
    ... }"
}
```

3.3.8.22.2 XML REPRESENTATION

```
<xs:complexType name="EventPeriod">
    <xs:sequence>
        <xs:element name="days-of-the-week" type="Event-timeline-schedule-
days-of-the-week"/>
        <xs:element name="effective-period-qualifier" type="Event-effective-
period-qualifier" minOccurs="0"/>
        <xs:element name="holiday-day" type="Event-holiday-day"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

3.3.8.23 eventQualifier

3.3.8.23.1 ASN.1 REPRESENTATION

```
eventQualifier ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "EventQualifier:frame"
ASN-NAME "EventQualifier"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 88 }
DEFINITION "Information content for an event that increases the quality of the
event information. It includes information about location, mode, lanes, and groups
involved."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { itisDataElements qualifiers\(1\) }, -- ITIS.Qualifiers
    { itisDataElements genericLocations\(1\) }, -- ITIS.GenericLocations
    { itisDataElements laneRoadway\(1\) }, -- ITIS.LaneRoadway
    { itisDataElements transitMode\(1\) }, -- ITIS.TransitMode
    { itisDataElements vehicleGroupAffected\(1\) }, -- ITIS.VehicleGroupAffected
    { itisDataElements travelerGroupAffected\(1\) }, -- ITIS.TravelerGroupAffected
    { itisDataElements responderGroupAffected\(1\) }, -- ITIS.ResponderGroupAffected
    { itisDataElements incidentResponseEquipment\(1\) }, --
ITIS.IncidentResponseEquipment
    { itisDataElements incidentResponseStatus\(1\) } -- ITIS.IncidentResponseStatus }
DATA-TYPE "EventQualifier ::= CHOICE {
    qualifier-generic ITIS.Qualifiers,
    location-generic ITIS.GenericLocations,
    lane-roadway ITIS.LaneRoadway,
    transit-mode ITIS.TransitMode,
    vehicle-group-affected ITIS.VehicleGroupAffected,
```

```

traveler-group-affected ITIS.TravelerGroupAffected,
responder-group-affected ITIS.ResponderGroupAffected,
incident-response-equipment ITIS.IncidentResponseEquipment,
transit-locations ITIS.GenericLocations,
incident-response-status ITIS.IncidentResponseStatus,
... }"
}

```

3.3.8.23.2 XML REPRESENTATION

```

<xs:complexType name="EventQualifier">
  <xs:choice>
    <xs:element name="qualifier-generic" type="itis:Qualifiers"/>
    <xs:element name="location-generic" type="itis:GenericLocations"/>
    <xs:element name="lane-roadway" type="itis:LaneRoadway"/>
    <xs:element name="transit-mode" type="itis:TransitMode"/>
    <xs:element name="vehicle-group-affected"
type="itis:VehicleGroupAffected"/>
    <xs:element name="traveler-group-affected"
type="itis:TravelerGroupAffected"/>
    <xs:element name="responder-group-affected"
type="itis:ResponderGroupAffected"/>
    <xs:element name="incident-response-equipment"
type="itis:IncidentResponseEquipment"/>
    <xs:element name="transit-locations" type="itis:GenericLocations"/>
    <xs:element name="incident-response-status"
type="itis:IncidentResponseStatus"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.8.24 eventQuantity

3.3.8.24.1 ASN.1 REPRESENTATION

```

eventQuantity ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventQuantity:frame"
  ASN-NAME "EventQuantity"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 89 }
  DEFINITION "The information content describing the quantities associated with an
  event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 70 }, -- DataExtent
    { tmddDataFrames 73 }, -- DataLinkState
    { tmddDataFrames 71 }, -- DataIncidentDetails
    { tmddDataFrames 75 }, -- DataRoadWeather
    { tmddDataFrames 74 }, -- DataParking
    { tmddDataFrames 76 }, -- DataSurfaceConditions
    { tmddDataFrames 72 } -- DataLinkRestrictions }
  DATA-TYPE "EventQuantity ::= CHOICE {
    extent DataExtent,
    link-state DataLinkState,
    incident-details DataIncidentDetails,
    road-weather DataRoadWeather,
    parking-data DataParking,
    surface-conditions DataSurfaceConditions,
    link-restrictions DataLinkRestrictions,
    ... }"
}

```


3.3.8.24.2 XML REPRESENTATION

```
<xs:complexType name="EventQuantity">
  <xs:choice>
    <xs:element name="extent" type="DataExtent"/>
    <xs:element name="link-state" type="DataLinkState"/>
    <xs:element name="incident-details" type="DataIncidentDetails"/>
    <xs:element name="road-weather" type="DataRoadWeather"/>
    <xs:element name="parking-data" type="DataParking"/>
    <xs:element name="surface-conditions" type="DataSurfaceConditions"/>
    <xs:element name="link-restrictions" type="DataLinkRestrictions"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>
```

3.3.8.25 eventReference

3.3.8.25.1 ASN.1 REPRESENTATION

```
eventReference ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventReference:frame"
  ASN-NAME "EventReference"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 90 }
  DEFINITION "The information content describing a reference to an event that is
  associated with this event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 115 } -- Event-update }
  DATA-TYPE "EventReference ::= SEQUENCE {
    event-id Organization-resource-identifier,
    event-update Event-update,
    response-plan-id Organization-resource-identifier OPTIONAL,
    update-time DateTimeZone,
    ... }"
}
```

3.3.8.25.2 XML REPRESENTATION

```
<xs:complexType name="EventReference">
  <xs:sequence>
    <xs:element name="event-id" type="Organization-resource-identifier"/>
    <xs:element name="event-update" type="Event-update"/>
    <xs:element name="response-plan-id" type="Organization-resource-
  identifier" minOccurs="0"/>
    <xs:element name="update-time" type="DateTimeZone"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.8.26 eventSource

3.3.8.26.1 ASN.1 REPRESENTATION

```
eventSource ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventSource:frame"
  ASN-NAME "EventSource"
```

```
ASN-OBJECT-IDENTIFIER { tmddDataFrames 91 }
DEFINITION "The information content describing the sources of information and/or
detection methods of an event."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 158 } -- OrganizationInformation
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 82 } -- Event-detection-method }
DATA-TYPE "EventSource ::= SEQUENCE {
    information-source OrganizationInformation OPTIONAL,
    event-detection-method Event-detection-method OPTIONAL,
    ... }"
```

3.3.8.26.2 XML REPRESENTATION

```
<xs:complexType name="EventSource">
    <xs:sequence>
        <xs:element name="information-source" type="OrganizationInformation"
minOccurs="0"/>
        <xs:element name="event-detection-method" type="Event-detection-
method" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

3.3.8.27 eventTimes

3.3.8.27.1 ASN.1 REPRESENTATION

```
eventTimes ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "EventTimes:frame"
ASN-NAME "EventTimes"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 92 }
DEFINITION "The information content describing a schedule of start and end times
associated with an event."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 }, -- DateTimeZone
    { tmddDataFrames 109 }, -- ValidPeriod
    { tmddDataFrames 103 } -- RecurrentTime
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 107 }, -- Event-schedule-element-identifier
    { tmddDataElements 118 } -- Binary-flag }
DATA-TYPE "EventTimes ::= SEQUENCE {
    update-time DateTimeZone,
    valid-period ValidPeriod OPTIONAL,
    schedule-element-ids SEQUENCE (SIZE(1..20)) OF Event-schedule-element-identifier
OPTIONAL,
    sequence-time DateTimeZone OPTIONAL,
    start-time DateTimeZone OPTIONAL,
    alternate-start-time DateTimeZone OPTIONAL,
    alternate-end-time DateTimeZone OPTIONAL,
    expected-start-time DateTimeZone OPTIONAL,
    expected-end-time DateTimeZone OPTIONAL,
    recurrent-times SEQUENCE (SIZE(1..64)) OF RecurrentTime OPTIONAL,
    planned-event-continuous-flag Binary-flag OPTIONAL,
```

```
... }"
}
```

3.3.8.27.2 XML REPRESENTATION

```
<xs:complexType name="EventTimes">
  <xs:sequence>
    <xs:element name="update-time" type="DateTimeZone"/>
    <xs:element name="valid-period" type="ValidPeriod" minOccurs="0"/>
    <xs:element name="schedule-element-ids" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="20">
          <xs:element name="event-schedule-element-
            identifier" type="Event-schedule-element-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="sequence-time" type="DateTimeZone" minOccurs="0"/>
    <xs:element name="start-time" type="DateTimeZone" minOccurs="0"/>
    <xs:element name="alternate-start-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="alternate-end-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="expected-start-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="expected-end-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:element name="recurrent-times" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="recurrent-time"
type="RecurrentTime"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="planned-event-continuous-flag" type="Binary-flag"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.8.28 eventTransitLocation

3.3.8.28.1 ASN.1 REPRESENTATION

```
eventTransitLocation ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventTransitLocation:frame"
  ASN-NAME "EventTransitLocation"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 93 }
  DEFINITION "The information content describing transit information related to an
  event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 114 }, -- Event-transit-direction-of-travel
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 79 } -- Event-description-notes-and-comments }
  DATA-TYPE "EventTransitLocation ::= SEQUENCE {
    transit-route-id Organization-resource-identifier,
    transit-direction Event-transit-direction-of-travel OPTIONAL,
    transit-stop-detail Organization-resource-name OPTIONAL,
```

```

    transit-location-text Event-description-notes-and-comments OPTIONAL,
    ... }"
}

```

3.3.8.28.2 XML REPRESENTATION

```

<xs:complexType name="EventTransitLocation">
  <xs:sequence>
    <xs:element name="transit-route-id" type="Organization-resource-
  identifier"/>
    <xs:element name="transit-direction" type="Event-transit-direction-
  of-travel" minOccurs="0"/>
    <xs:element name="transit-stop-detail" type="Organization-resource-
  name" minOccurs="0"/>
    <xs:element name="transit-location-text" type="Event-description-
  notes-and-comments" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.8.29 eventType

3.3.8.29.1 ASN.1 REPRESENTATION

```

eventType ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "EventType:frame"
  ASN-NAME "EventType"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 94 }
  DEFINITION "The information content describing the type of event, based on the
  ITIS codes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { itisDataElements trafficConditions(1) }, -- ITIS.TrafficConditions
    { itisDataElements accidentsAndIncidents(1) }, -- ITIS.AccidentsAndIncidents
    { itisDataElements closures(1) }, -- ITIS.Closures
    { itisDataElements roadwork(1) }, -- ITIS.Roadwork
    { itisDataElements obstruction(1) }, -- ITIS.Obstruction
    { itisDataElements delayStatusCancellation(1) }, -- ITIS.DelayStatusCancellation
    { itisDataElements unusualDriving(1) }, -- ITIS.UnusualDriving
    { itisDataElements mobileSituation(1) }, -- ITIS.MobileSituation
    { itisDataElements deviceStatus(1) }, -- ITIS.DeviceStatus
    { itisDataElements restrictionClass(1) }, -- ITIS.RestrictionClass
    { itisDataElements incidentResponseStatus(1) }, -- ITIS.IncidentResponseStatus
    { itisDataElements disasters(1) }, -- ITIS.Disasters
    { itisDataElements disturbances(1) }, -- ITIS.Disturbances
    { itisDataElements sportingEvents(1) }, -- ITIS.SportingEvents
    { itisDataElements specialEvents(1) }, -- ITIS.SpecialEvents
    { itisDataElements parkingInformation(1) }, -- ITIS.ParkingInformation
    { itisDataElements systemInformation(1) }, -- ITIS.SystemInformation
    { itisDataElements weatherConditions(1) }, -- ITIS.WeatherConditions
    { itisDataElements precipitation(1) }, -- ITIS.Precipitation
    { itisDataElements winds(1) }, -- ITIS.Winds
    { itisDataElements visibilityAndAirQuality(1) }, -- ITIS.VisibilityAndAirQuality
    { itisDataElements temperature(1) }, -- ITIS.Temperature
    { itisDataElements pavementConditions(1) }, -- ITIS.PavementConditions
    { itisDataElements winterDrivingRestrictions(1) }, --
  ITIS.WinterDrivingRestrictions
    { itisDataElements winterDrivingIndex(1) }, -- ITIS.WinterDrivingIndex
    { itisDataElements suggestionAdvice(1) }, -- ITIS.SuggestionAdvice
    { itisDataElements warningAdvice(1) }, -- ITIS.WarningAdvice
  }
}

```

```

    { itisDataElements adviceInstructionsRecommendations(1) }, --
ITIS.AdviceInstructionsRecommendations
    { itisDataElements adviceInstructionsMandatory(1) }, --
ITIS.AdviceInstructionsMandatory
    { itisDataElements laneRoadway(1) }, -- ITIS.LaneRoadway
    { itisDataElements alternateRoute(1) }, -- ITIS.AlternateRoute
    { itisDataElements transitMode(1) }, -- ITIS.TransitMode
    { itisDataElements vehicleGroupAffected(1) }, -- ITIS.VehicleGroupAffected
    { itisDataElements travelerGroupAffected(1) }, -- ITIS.TravelerGroupAffected
    { itisDataElements responderGroupAffected(1) }, -- ITIS.ResponderGroupAffected
    { itisDataElements incidentResponseEquipment(1) }, --
ITIS.IncidentResponseEquipment
    { itisDataElements transitOperations(1) }, -- ITIS.TransitOperations
    { tmddDataElements 79 } -- Event-description-notes-and-comments }
DATA-TYPE "EventType ::= CHOICE {
    traffic-conditions ITIS.TrafficConditions,
    accidents-and-incidents ITIS.AccidentsAndIncidents,
    closures ITIS.Closures,
    roadwork ITIS.Roadwork,
    obstruction ITIS.Obstruction,
    delay-status-cancellation ITIS.DelayStatusCancellation,
    unusual-driving ITIS.UnusualDriving,
    mobile-situation ITIS.MobileSituation,
    device-status ITIS.DeviceStatus,
    restriction-class ITIS.RestrictionClass,
    incidentResponseStatus ITIS.IncidentResponseStatus,
    disasters ITIS.Disasters,
    disturbances ITIS.Disturbances,
    sporting-events ITIS.SportingEvents,
    special-events ITIS.SpecialEvents,
    parking-information ITIS.ParkingInformation,
    system-information ITIS.SystemInformation,
    weather-conditions ITIS.WeatherConditions,
    precipitation ITIS.Precipitation,
    winds ITIS.Winds,
    visibility-and-air-quality ITIS.VisibilityAndAirQuality,
    temperature ITIS.Temperature,
    pavement-conditions ITIS.PavementConditions,
    winter-driving-restrictions ITIS.WinterDrivingRestrictions,
    winter-driving-index ITIS.WinterDrivingIndex,
    suggestionAdvice ITIS.SuggestionAdvice,
    warningAdvice ITIS.WarningAdvice,
    adviceInstructionsRecommendations ITIS.AdviceInstructionsRecommendations,
    adviceInstructionsMandatory ITIS.AdviceInstructionsMandatory,
    laneRoadway ITIS.LaneRoadway,
    alternateRoute ITIS.AlternateRoute,
    transitMode ITIS.TransitMode,
    vehicleGroupAffected ITIS.VehicleGroupAffected,
    travelerGroupAffected ITIS.TravelerGroupAffected,
    responderGroupAffected ITIS.ResponderGroupAffected,
    incidentResponseEquipment ITIS.IncidentResponseEquipment,
    transitOperations ITIS.TransitOperations,
    transitIncident Event-description-notes-and-comments,
    transitConstruction Event-description-notes-and-comments,
    ... }"
}

```

3.3.8.29.2 XML REPRESENTATION

```

<xs:complexType name="EventType">
  <xs:choice>
    <xs:element name="traffic-conditions" type="itis:TrafficConditions"/>
    <xs:element name="accidents-and-incidents"
type="itis:AccidentsAndIncidents"/>
  </xs:choice>
</xs:complexType>

```

```

        <xs:element name="closures" type="itis:Closures"/>
        <xs:element name="roadwork" type="itis:Roadwork"/>
        <xs:element name="obstruction" type="itis:Obstruction"/>
        <xs:element name="delay-status-cancellation"
type="itis:DelayStatusCancellation"/>
        <xs:element name="unusual-driving" type="itis:UnusualDriving"/>
        <xs:element name="mobile-situation" type="itis:MobileSituation"/>
        <xs:element name="device-status" type="itis:DeviceStatus"/>
        <xs:element name="restriction-class" type="itis:RestrictionClass"/>
        <xs:element name="incidentResponseStatus"
type="itis:IncidentResponseStatus"/>
        <xs:element name="disasters" type="itis:Disasters"/>
        <xs:element name="disturbances" type="itis:Disturbances"/>
        <xs:element name="sporting-events" type="itis:SportingEvents"/>
        <xs:element name="special-events" type="itis:SpecialEvents"/>
        <xs:element name="parking-information"
type="itis:ParkingInformation"/>
        <xs:element name="system-information" type="itis:SystemInformation"/>
        <xs:element name="weather-conditions" type="itis:WeatherConditions"/>
        <xs:element name="precipitation" type="itis:Precipitation"/>
        <xs:element name="winds" type="itis:Winds"/>
        <xs:element name="visibility-and-air-quality"
type="itis:VisibilityAndAirQuality"/>
        <xs:element name="temperature" type="itis:Temperature"/>
        <xs:element name="pavement-conditions"
type="itis:PavementConditions"/>
        <xs:element name="winter-driving-restrictions"
type="itis:WinterDrivingRestrictions"/>
        <xs:element name="winter-driving-index"
type="itis:WinterDrivingIndex"/>
        <xs:element name="suggestionAdvice" type="itis:SuggestionAdvice"/>
        <xs:element name="warningAdvice" type="itis:WarningAdvice"/>
        <xs:element name="adviceInstructionsRecommendations"
type="itis:AdviceInstructionsRecommendations"/>
        <xs:element name="adviceInstructionsMandatory"
type="itis:AdviceInstructionsMandatory"/>
        <xs:element name="laneRoadway" type="itis:LaneRoadway"/>
        <xs:element name="alternateRoute" type="itis:AlternateRoute"/>
        <xs:element name="transitMode" type="itis:TransitMode"/>
        <xs:element name="vehicleGroupAffected"
type="itis:VehicleGroupAffected"/>
        <xs:element name="travelerGroupAffected"
type="itis:TravelerGroupAffected"/>
        <xs:element name="responderGroupAffected"
type="itis:ResponderGroupAffected"/>
        <xs:element name="incidentResponseEquipment"
type="itis:IncidentResponseEquipment"/>
        <xs:element name="transitOperations" type="itis:TransitOperations"/>
        <xs:element name="transitIncident" type="Event-description-notes-and-
comments"/>
        <xs:element name="transitConstruction" type="Event-description-notes-
and-comments"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:choice>
</xs:complexType>

```

3.3.8.30 fullEventUpdate

3.3.8.30.1 ASN.1 REPRESENTATION

```

fullEventUpdate ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "FullEventUpdate:frame"
    ASN-NAME "FullEventUpdate"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 95 }
}

```

DEFINITION "The information content describing an owner center's single event.
Note: event-headline and event-element-details is OPTIONAL IF and ONLY IF this data frame is sent to close an open event."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
 { [tmddDataFrames 160](#) }, -- Restrictions
 { [tmddDataFrames 99](#) }, -- MessageHeader
 { [tmddDataFrames 90](#) }, -- EventReference
 { [tmddDataFrames 102](#) }, -- ProjectReference
 { [tmddDataFrames 83](#) }, -- EventIndicator
 { [tmddDataFrames 100](#) }, -- OtherReference
 { [tmddDataFrames 82](#) }, -- EventHeadline
 { [tmddDataFrames 80](#) }, -- EventElementDetail
 { [tmddDataFrames 78](#) }, -- EventComments
 { [tmddDataFrames 96](#) } -- FullReportText }
DATA-TYPE "FullEventUpdate ::= SEQUENCE {
 restrictions Restrictions OPTIONAL,
 message-header MessageHeader,
 event-reference EventReference OPTIONAL,
 project-references SEQUENCE (SIZE(1..64)) OF ProjectReference OPTIONAL,
 event-indicators SEQUENCE (SIZE(1..64)) OF EventIndicator OPTIONAL,
 other-references SEQUENCE (SIZE(1..64)) OF OtherReference OPTIONAL,
 event-headline EventHeadline OPTIONAL,
 event-element-details SEQUENCE (SIZE(1..64)) OF EventElementDetail OPTIONAL,
 event-comments EventComments OPTIONAL,
 full-report-texts SEQUENCE (SIZE(1..100)) OF FullReportText OPTIONAL,
 ... }"

3.3.8.30.2 XML REPRESENTATION

```
<xs:complexType name="FullEventUpdate">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="message-header" type="MessageHeader"/>
    <xs:element name="event-reference" type="EventReference"
minOccurs="0"/>
    <xs:element name="project-references" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="project-reference"
type="ProjectReference" minOccurs="0"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="event-indicators" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="event-indicator"
type="EventIndicator" minOccurs="0"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="other-references" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="other-reference"
type="OtherReference"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

```

        <xs:element name="event-headline" type="EventHeadline"
minOccurs="0"/>
        <xs:element name="event-element-details" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="64">
                    <xs:element name="event-element-detail"
type="EventElementDetail"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="event-comments" type="EventComments"
minOccurs="0"/>
        <xs:element name="full-report-texts" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="100">
                    <xs:element name="full-report-text"
type="FullReportText"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8.31 fullReportText

3.3.8.31.1 ASN.1 REPRESENTATION

```

fullReportText ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "FullReportText:frame"
    ASN-NAME "FullReportText"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 96 }
    DEFINITION "Information content for an event including a textual description,
broadcast medium, and language."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 105 }, -- Event-report-medium
        { tmddDataElements 79 }, -- Event-description-notes-and-comments
        { tmddDataElements 78 } -- Event-description-language }
    DATA-TYPE "FullReportText ::= SEQUENCE {
        report-medium Event-report-medium,
        description Event-description-notes-and-comments,
        language Event-description-language OPTIONAL,
        ... }"
}

```

3.3.8.31.2 XML REPRESENTATION

```

<xs:complexType name="FullReportText">
    <xs:sequence>
        <xs:element name="report-medium" type="Event-report-medium"/>
        <xs:element name="description" type="Event-description-notes-and-
comments"/>
        <xs:element name="language" type="Event-description-language"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8.32 hazmat

3.3.8.32.1 *ASN.1 REPRESENTATION*

```

hazmat ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "Hazmat:frame"
  ASN-NAME "Hazmat"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 188 }
  DEFINITION      "Information content describing the hazardous materials observed or
detected at an incident, including an indication if a conveyance was properly
placarded."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 208 }, -- Event-hazmat-code
    { tmddDataElements 209 }, -- Event-placard-code
    { tmddDataElements 210 } -- Event-placard-displayed-code  }
  DATA-TYPE "Hazmat ::= SEQUENCE {
    hazmat-code Event-hazmat-code OPTIONAL,
    placard-code Event-placard-code OPTIONAL,
    placard-displayed-accuracy Event-placard-displayed-code OPTIONAL,
    ... }"
}

```

3.3.8.32.2 *XML REPRESENTATION*

```

<xs:complexType name="Hazmat">
  <xs:sequence>
    <xs:element name="hazmat-code" type="Event-hazmat-code"
minOccurs="0"/>
    <xs:element name="placard-code" type="Event-placard-code"
minOccurs="0"/>
    <xs:element name="placard-displayed-accuracy" type="Event-placard-
displayed-code" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.8.33 *landmarkLocation*

3.3.8.33.1 *ASN.1 REPRESENTATION*

```

landmarkLocation ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "LandmarkLocation:frame"
  ASN-NAME "LandmarkLocation"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 97 }
  DEFINITION      "The information content describing a landmark location associated
with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { lrmsDataFrames geoLocation\(1\) }, -- LRMS.GeoLocation
    { tmddDataFrames 69 } -- AreaLocation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 96 }, -- Event-location-landmark-type
    { tmddDataElements 91 }, -- Event-landmark-name
    { tmddDataElements 97 } -- Event-location-rank  }
  DATA-TYPE "LandmarkLocation ::= SEQUENCE {
    landmark-type Event-location-landmark-type,
    landmark-name Event-landmark-name,
    landmark-point-name Event-landmark-name OPTIONAL,
    location-rank Event-location-rank OPTIONAL,

```

```

    geo-location LRMS.GeoLocation OPTIONAL,
    upward-area-reference AreaLocation OPTIONAL,
    ... }"
}

```

3.3.8.33.2 XML REPRESENTATION

```

<xs:complexType name="LandmarkLocation">
  <xs:sequence>
    <xs:element name="landmark-type" type="Event-location-landmark-
type"/>
    <xs:element name="landmark-name" type="Event-landmark-name"/>
    <xs:element name="landmark-point-name" type="Event-landmark-name"
minOccurs="0"/>
    <xs:element name="location-rank" type="Event-location-rank"
minOccurs="0"/>
    <xs:element name="geo-location" type="lrms:GeoLocation"
minOccurs="0"/>
    <xs:element name="upward-area-reference" type="AreaLocation"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.8.34 linkLocation

3.3.8.34.1 ASN.1 REPRESENTATION

```

linkLocation ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "LinkLocation:frame"
  ASN-NAME "LinkLocation"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 98 }
  DEFINITION "The information content describing a link-based location associated
with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 101 }, -- PointOnLink
    { tmddDataFrames 98 } -- LinkLocation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 203 }, -- Transportation-network-name
    { tmddDataElements 170 }, -- Link-route-designator
    { tmddDataElements 201 }, -- Transportation-network-identifier
    { tmddDataElements 150 }, -- Link-direction
    { tmddDataElements 142 }, -- Link-alignment
    { tmddDataElements 157 } -- Link-location-linear-reference-version }
  DATA-TYPE "LinkLocation ::= SEQUENCE {
    link-ownership Transportation-network-name OPTIONAL,
    link-designator Link-route-designator OPTIONAL,
    second-link-designator Link-route-designator OPTIONAL,
    link-id Transportation-network-identifier OPTIONAL,
    link-name Transportation-network-name OPTIONAL,
    primary-location PointOnLink,
    secondary-location PointOnLink OPTIONAL,
    link-direction Link-direction OPTIONAL,
    link-alignment Link-alignment OPTIONAL,
    linear-reference-version Link-location-linear-reference-version OPTIONAL,
    alternate-designations SEQUENCE (SIZE(1..8)) OF LinkLocation OPTIONAL,
    ... }"
}

```

3.3.8.34.2 XML REPRESENTATION

```
<xs:complexType name="LinkLocation">
  <xs:sequence>
    <xs:element name="link-ownership" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="link-designator" type="Link-route-designator"
minOccurs="0"/>
    <xs:element name="second-link-designator" type="Link-route-
designator" minOccurs="0"/>
    <xs:element name="link-id" type="Transportation-network-identifier"
minOccurs="0"/>
    <xs:element name="link-name" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="primary-location" type="PointOnLink"/>
    <xs:element name="secondary-location" type="PointOnLink"
minOccurs="0"/>
    <xs:element name="link-direction" type="Link-direction"
minOccurs="0"/>
    <xs:element name="link-alignment" type="Link-alignment"
minOccurs="0"/>
    <xs:element name="linear-reference-version" type="Link-location-
linear-reference-version" minOccurs="0"/>
    <xs:element name="alternate-designations" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="8">
          <xs:element name="alternate-designation"
type="LinkLocation"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.8.35 messageHeader

3.3.8.35.1 ASN.1 REPRESENTATION

```
messageHeader ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "MessageHeader:frame"
  ASN-NAME "MessageHeader"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 99 }
  DEFINITION "The information content describing header information associated
with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 99 }, -- Event-message-type-version
    { tmddDataElements 98 } -- Event-message-number }
  DATA-TYPE "MessageHeader ::= SEQUENCE {
    organization-sending OrganizationInformation,
    organizations-receiving SEQUENCE (SIZE(1..100)) OF OrganizationInformation
  OPTIONAL,
    organizations-responding SEQUENCE (SIZE(1..100)) OF OrganizationInformation
  OPTIONAL,
    message-type-version Event-message-type-version,
    message-number Event-message-number,
    message-time-stamp DateTimeZone,
```

```

    message-expiry-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.8.35.2 XML REPRESENTATION

```

<xs:complexType name="MessageHeader">
  <xs:sequence>
    <xs:element name="organization-sending"
type="OrganizationInformation"/>
    <xs:element name="organizations-receiving" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="100">
          <xs:element name="organizations-receiving-
item" type="OrganizationInformation"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="organizations-responding" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="100">
          <xs:element name="organizations-responding-
item" type="OrganizationInformation"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="message-type-version" type="Event-message-type-
version"/>
    <xs:element name="message-number" type="Event-message-number"/>
    <xs:element name="message-time-stamp" type="DateTimeZone"/>
    <xs:element name="message-expiry-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.8.36 otherReference

3.3.8.36.1 ASN.1 REPRESENTATION

```

otherReference ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "OtherReference:frame"
  ASN-NAME "OtherReference"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 100 }
  DEFINITION "The information content describing references to trips, related
events, events split and merged, and devices associated with this event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 90 }, -- EventReference
    { tmddDataFrames 34 }, -- DeviceReference
    { tmddDataFrames 115 } -- UrlReference
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 } -- Organization-resource-identifier }
  DATA-TYPE "OtherReference ::= CHOICE {
    trip-reference Organization-resource-identifier,
    responsible-event EventReference,
    related-event EventReference,
    previous-event EventReference,
    split-event EventReference,
    merged-event EventReference,

```

```

    sibling-event EventReference,
    associated-device DeviceReference,
    associated-url UriReference,
    ... }"
}

```

3.3.8.36.2 XML REPRESENTATION

```

<xs:complexType name="OtherReference">
  <xs:choice>
    <xs:element name="trip-reference" type="Organization-resource-
  identifier"/>
    <xs:element name="responsible-event" type="EventReference"/>
    <xs:element name="related-event" type="EventReference"/>
    <xs:element name="previous-event" type="EventReference"/>
    <xs:element name="split-event" type="EventReference"/>
    <xs:element name="merged-event" type="EventReference"/>
    <xs:element name="sibling-event" type="EventReference"/>
    <xs:element name="associated-device" type="DeviceReference"/>
    <xs:element name="associated-url" type="UriReference"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.8.37 pointOnLink

3.3.8.37.1 ASN.1 REPRESENTATION

```

pointOnLink ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "PointOnLink:frame"
  ASN-NAME "PointOnLink"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 101 }
  DEFINITION "The information content describing a point on a link associated with
  an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { lrmsDataFrames geoLocation(1) }, -- LRMS.GeoLocation
    { tmddDataFrames 69 } -- AreaLocation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 156 }, -- Link-location-linear-reference
    { tmddDataElements 203 }, -- Transportation-network-name
    { tmddDataElements 201 }, -- Transportation-network-identifier
    { tmddDataElements 109 }, -- Event-signed-destination
    { tmddDataElements 97 }, -- Event-location-rank
    { tmddDataElements 96 } -- Event-location-landmark-type }
  DATA-TYPE "PointOnLink ::= SEQUENCE {
    geo-location LRMS.GeoLocation,
    linear-reference Link-location-linear-reference OPTIONAL,
    link-name Transportation-network-name OPTIONAL,
    point-name Transportation-network-name OPTIONAL,
    cross-street-designator SEQUENCE (SIZE(1..8)) OF Transportation-network-identifier
  OPTIONAL,
    cross-street-name SEQUENCE (SIZE(1..8)) OF Transportation-network-name OPTIONAL,
    signed-destination SEQUENCE (SIZE(1..8)) OF Event-signed-destination OPTIONAL,
    location-rank Event-location-rank OPTIONAL,
    landmark-type Event-location-landmark-type OPTIONAL,
    upward-area-reference AreaLocation OPTIONAL,
    ... }"
}

```

3.3.8.37.2 XML REPRESENTATION

```
<xs:complexType name="PointOnLink">
  <xs:sequence>
    <xs:element name="geo-location" type="lrms:GeoLocation"/>
    <xs:element name="linear-reference" type="Link-location-linear-
reference" minOccurs="0"/>
    <xs:element name="link-name" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="point-name" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="cross-street-designator" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="8">
          <xs:element name="cross-street-identifier"
type="Transportation-network-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="cross-street-name" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="8">
          <xs:element name="cross-street-name-item"
type="Transportation-network-name"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="signed-destination" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="8">
          <xs:element name="signed-destination-item"
type="Event-signed-destination"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="location-rank" type="Event-location-rank"
minOccurs="0"/>
    <xs:element name="landmark-type" type="Event-location-landmark-type"
minOccurs="0"/>
    <xs:element name="upward-area-reference" type="AreaLocation"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.8.38 projectReference

3.3.8.38.1 ASN.1 REPRESENTATION

```
projectReference ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ProjectReference:frame"
  ASN-NAME "ProjectReference"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 102 }
  DEFINITION "The information content describing projects, typically roadway
construction or maintenance, associated with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 158 } -- OrganizationInformation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 79 } -- Event-description-notes-and-comments }
}
```

```
DATA-TYPE "ProjectReference ::= CHOICE {
    project-reference Organization-resource-identifier,
    permit-reference Organization-resource-identifier,
    project-contacts OrganizationInformation,
    project-description Event-description-notes-and-comments,
    ... }"
```

3.3.8.38.2 XML REPRESENTATION

```
<xs:complexType name="ProjectReference">
    <xs:choice>
        <xs:element name="project-reference" type="Organization-resource-
            identifier"/>
        <xs:element name="permit-reference" type="Organization-resource-
            identifier"/>
        <xs:element name="project-contacts" type="OrganizationInformation"/>
        <xs:element name="project-description" type="Event-description-notes-
            and-comments"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:choice>
</xs:complexType>
```

3.3.8.39 recurrentTime

3.3.8.39.1 ASN.1 REPRESENTATION

```
recurrentTime ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "RecurrentTime:frame"
    ASN-NAME "RecurrentTime"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 103 }
    DEFINITION "The information content describing a recurring time period and
        optionally scheduled times associated with an event."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 87 } -- EventPeriod
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 113 }, -- Event-timeline-schedule-times
        { tmddDataElements 121 } -- Time-offset-utc }
    DATA-TYPE "RecurrentTime ::= SEQUENCE {
        recurrent-period EventPeriod,
        schedule-times SEQUENCE (SIZE(1..64)) OF Event-timeline-schedule-times OPTIONAL,
        utc-offset Time-offset-utc,
        ... }"
```

3.3.8.39.2 XML REPRESENTATION

```
<xs:complexType name="RecurrentTime">
    <xs:sequence>
        <xs:element name="recurrent-period" type="EventPeriod"/>
        <xs:element name="schedule-times" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="64">
                    <xs:element name="time" type="Event-
                        timeline-schedule-times"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
```

```

        <xs:element name="utc-offset" type="Time-offset-utc"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8.40 requestFilter

3.3.8.40.1 ASN.1 REPRESENTATION

```

requestFilter ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "RequestFilter:frame"
    ASN-NAME "RequestFilter"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 104 }
    DEFINITION "The information content describing filters that can be applied to an
    event or event index request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 94 } -- EventType
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 76 }, -- Event-category
        { tmddDataElements 80 }, -- Event-description-priority-level
        { tmddDataElements 77 }, -- Event-description-confidence-level
        { tmddDataElements 70 }, -- Event-access-level
        { tmddDataElements 73 }, -- Event-action-request-flag
        { tmddDataElements 108 }, -- Event-severity
        { tmddDataElements 208 }, -- Event-hazmat-code
        { tmddDataElements 209 } -- Event-placard-code }
    DATA-TYPE "RequestFilter ::= SEQUENCE {
        category Event-category OPTIONAL,
        priority-level Event-description-priority-level OPTIONAL,
        confidence-level Event-description-confidence-level OPTIONAL,
        access-level Event-access-level OPTIONAL,
        action-request-flag Event-action-request-flag OPTIONAL,
        severity Event-severity OPTIONAL,
        hazmat-code SEQUENCE (SIZE(1..10)) OF Event-hazmat-code OPTIONAL,
        placard-code SEQUENCE (SIZE(1..10)) OF Event-placard-code OPTIONAL,
        organizations-requested SEQUENCE (SIZE(1..20)) OF OrganizationInformation
    OPTIONAL,
        headline EventType OPTIONAL,
        ... }"
}

```

3.3.8.40.2 XML REPRESENTATION

```

<xs:complexType name="RequestFilter">
    <xs:sequence>
        <xs:element name="category" type="Event-category" minOccurs="0"/>
        <xs:element name="priority-level" type="Event-description-priority-
level" minOccurs="0"/>
        <xs:element name="confidence-level" type="Event-description-
confidence-level" minOccurs="0"/>
        <xs:element name="access-level" type="Event-access-level"
minOccurs="0"/>
        <xs:element name="action-request-flag" type="Event-action-request-
flag" minOccurs="0"/>
        <xs:element name="severity" type="Event-severity" minOccurs="0"/>
        <xs:element name="hazmat-code" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="10">

```



```

                                <xs:element name="hazmat-code-item"
type="Event-hazmat-code"/>
                                </xs:sequence>
                                </xs:complexType>
                                </xs:element>
                                <xs:element name="placard-code" minOccurs="0">
                                <xs:complexType>
                                <xs:sequence maxOccurs="10">
                                <xs:element name="placard-code-item"
type="Event-placard-code"/>
                                </xs:sequence>
                                </xs:complexType>
                                </xs:element>
                                <xs:element name="organizations-requested" minOccurs="0">
                                <xs:complexType>
                                <xs:sequence maxOccurs="20">
                                <xs:element name="organizations-requested-
item" type="OrganizationInformation"/>
                                </xs:sequence>
                                </xs:complexType>
                                </xs:element>
                                <xs:element name="headline" type="EventType" minOccurs="0"/>
                                <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
                                </xs:sequence>
                                </xs:complexType>

```

3.3.8.41 requestHeader

3.3.8.41.1 ASN.1 REPRESENTATION

```

requestHeader ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "RequestHeader:frame"
    ASN-NAME "RequestHeader"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 105 }
    DEFINITION "The information content header included in all event requests."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 211 }, -- Event-message-type-identifier
        { tmddDataElements 99 }, -- Event-message-type-version
        { tmddDataElements 98 } -- Event-message-number }
    DATA-TYPE "RequestHeader ::= SEQUENCE {
        organization-information OrganizationInformation,
        organization-requesting SEQUENCE (SIZE(1..20)) OF OrganizationInformation
    OPTIONAL,
        message-type-id Event-message-type-identifier,
        message-type-version Event-message-type-version,
        message-number Event-message-number OPTIONAL,
        message-time-stamp DateTimeZone,
        ... }"
}

```

3.3.8.41.2 XML REPRESENTATION

```

<xs:complexType name="RequestHeader">
    <xs:sequence>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
    </xs:sequence>
</xs:complexType>

```

```

        <xs:element name="organization-requesting" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="20">
                    <xs:element name="organizations-requested-
item" type="OrganizationInformation"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="message-type-id" type="Event-message-type-
identifier"/>
        <xs:element name="message-type-version" type="Event-message-type-
version"/>
        <xs:element name="message-number" type="Event-message-number"
minOccurs="0"/>
        <xs:element name="message-time-stamp" type="DateTimeZone"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.8.42 requestLocation

3.3.8.42.1 ASN.1 REPRESENTATION

```

requestLocation ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "RequestLocation:frame"
    ASN-NAME "RequestLocation"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 106 }
    DEFINITION "The information content describing a filter for a single location
for an event or event index request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 69 } -- AreaLocation
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 93 }, -- Event-link-categories
        { tmddDataElements 170 } -- Link-route-designator }
    DATA-TYPE "RequestLocation ::= CHOICE {
        area-locations SEQUENCE (SIZE(1..20)) OF AreaLocation,
        link-categories Event-link-categories,
        link-designator SEQUENCE (SIZE(1..20)) OF Link-route-designator,
        ... }"
}

```

3.3.8.42.2 XML REPRESENTATION

```

<xs:complexType name="RequestLocation">
    <xs:choice>
        <xs:element name="area-locations">
            <xs:complexType>
                <xs:sequence maxOccurs="20">
                    <xs:element name="area-location"
type="AreaLocation"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="link-categories" type="Event-link-categories"/>
        <xs:element name="link-designator">
            <xs:complexType>
                <xs:sequence maxOccurs="20">
                    <xs:element name="link-designator-item"
type="Link-route-designator"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
    </xs:choice>
</xs:complexType>

```

```

        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.8.43 requestTimes

3.3.8.43.1 ASN.1 REPRESENTATION

```

requestTimes ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RequestTimes:frame"
  ASN-NAME "RequestTimes"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 107 }
  DEFINITION          "The information content describing the start and end times filter
  for an event or event index request."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 } -- DateTimeZone }
  DATA-TYPE "RequestTimes ::= SEQUENCE {
    start-time DateTimeZone OPTIONAL,
    end-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.8.43.2 XML REPRESENTATION

```

<xs:complexType name="RequestTimes">
  <xs:sequence>
    <xs:element name="start-time" type="DateTimeZone" minOccurs="0"/>
    <xs:element name="end-time" type="DateTimeZone" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.8.44 requestType

3.3.8.44.1 ASN.1 REPRESENTATION

```

requestType ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RequestType:frame"
  ASN-NAME "RequestType"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 108 }
  DEFINITION          "The information content describing filters for events versus event
  summaries, specific event identifiers, and response plan identifiers for an event
  request."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 106 }, -- Event-request-focus
    { tmddDataElements 192 } -- Organization-resource-identifier }
  DATA-TYPE "RequestType ::= SEQUENCE {
    request-focus Event-request-focus,
    event-ids SEQUENCE (SIZE(1..64)) OF Organization-resource-identifier OPTIONAL,
    response-plan-ids SEQUENCE (SIZE(1..64)) OF Organization-resource-identifier
    OPTIONAL,
    ... }"
}

```

3.3.8.44.2 XML REPRESENTATION

```
<xs:complexType name="RequestType">
  <xs:sequence>
    <xs:element name="request-focus" type="Event-request-focus"/>
    <xs:element name="event-ids" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="event-id"
type="Organization-resource-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="response-plan-ids" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="response-plan-id"
type="Organization-resource-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.8.45 validPeriod

3.3.8.45.1 ASN.1 REPRESENTATION

```
validPeriod ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "ValidPeriod:frame"
  ASN-NAME "ValidPeriod"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 109 }
  DEFINITION "The information content describing the period during which an event
is in or should be in effect."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 }, -- DateTimeZone
    { tmddDataFrames 87 } -- EventPeriod
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 111 } -- Event-timeline-estimated-duration }
  DATA-TYPE "ValidPeriod ::= CHOICE {
    expected-end-time DateTimeZone,
    estimated-duration Event-timeline-estimated-duration,
    effective-periods SEQUENCE (SIZE(1..16)) OF EventPeriod,
    ... }"
```

3.3.8.45.2 XML REPRESENTATION

```
<xs:complexType name="ValidPeriod">
  <xs:choice>
    <xs:element name="expected-end-time" type="DateTimeZone"/>
    <xs:element name="estimated-duration" type="Event-timeline-estimated-
duration"/>
    <xs:element name="effective-periods">
      <xs:complexType>
        <xs:sequence maxOccurs="16">
          <xs:element name="effective-period"
type="EventPeriod"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:choice>
</xs:complexType>
```

```

        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:choice>
</xs:complexType>

```

3.3.9 Gate Class Data Frames

3.3.9.1 gateControlRequest

3.3.9.1.1 ASN.1 REPRESENTATION

```

gateControlRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "GateControlRequest:frame"
  ASN-NAME "GateControlRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 110 }
  DEFINITION          "The information content necessary to request a control action of an
  owner center's gate."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 24 } -- DeviceControlRequestHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 116 } -- Gate-request-command }
  DATA-TYPE "GateControlRequest" ::= SEQUENCE {
    device-control-request-header DeviceControlRequestHeader,
    gate-request-command Gate-request-command,
    ... }"
}

```

3.3.9.1.2 XML REPRESENTATION

```

<xs:complexType name="GateControlRequest">
  <xs:sequence>
    <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
    <xs:element name="gate-request-command" type="Gate-request-command"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.9.2 gateControlSchedule

3.3.9.2.1 ASN.1 REPRESENTATION

```

gateControlSchedule ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "GateControlSchedule:frame"
  ASN-NAME "GateControlSchedule"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 111 }
  DEFINITION          "The information content describing an owner center's gate control
  schedule for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 26 } -- DeviceControlScheduleHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 116 } -- Gate-request-command }
  DATA-TYPE "GateControlSchedule" ::= SEQUENCE {

```

```

    device-control-schedule-header DeviceControlScheduleHeader,
    gate-control Gate-request-command,
    ... }"
}

```

3.3.9.2.2 XML REPRESENTATION

```

<xs:complexType name="GateControlSchedule">
  <xs:sequence>
    <xs:element name="device-control-schedule-header"
type="DeviceControlScheduleHeader"/>
    <xs:element name="gate-control" type="Gate-request-command"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.9.3 gateInventory

3.3.9.3.1 ASN.1 REPRESENTATION

```

gateInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "GateInventory:frame"
  ASN-NAME "GateInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 112 }
  DEFINITION          "The information content describing an entry in the owner center's
gate inventory for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 } -- DeviceInventoryHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 153 } -- Link-lanes-count  }
  DATA-TYPE "GateInventory ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    link-lane-count Link-lanes-count OPTIONAL,
    ... }"
}

```

3.3.9.3.2 XML REPRESENTATION

```

<xs:complexType name="GateInventory">
  <xs:sequence>
    <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
    <xs:element name="link-lane-count" type="Link-lanes-count"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.9.4 gateStatus

3.3.9.4.1 ASN.1 REPRESENTATION

```

gateStatus ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "GateStatus:frame"
  ASN-NAME "GateStatus"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 113 }
}

```

```

DEFINITION          "The information content describing an owner center's gate status for
a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 35 } -- DeviceStatusHeader
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 117 } -- Gate-status
}
DATA-TYPE "GateStatus ::= SEQUENCE {
    device-status-header DeviceStatusHeader,
    gate-status Gate-status,
    ... }"
}

```

3.3.9.4.2 XML REPRESENTATION

```

<xs:complexType name="GateStatus">
    <xs:sequence>
        <xs:element name="device-status-header" type="DeviceStatusHeader"/>
        <xs:element name="gate-status" type="Gate-status"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.10 Global Class Data Frames

3.3.10.1 dateTimeZone

3.3.10.1.1 ASN.1 REPRESENTATION

```

dateTimeZone ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "DateTimeZone:frame"
ASN-NAME "DateTimeZone"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 114 }
DEFINITION          "A data frame used to describe local time, including date, time, and
time zone."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 119 }, -- Date
    { tmddDataElements 120 }, -- Time
    { tmddDataElements 121 } -- Time-offset-utc
}
DATA-TYPE "DateTimeZone ::= SEQUENCE {
    date Date,
    time Time,
    offset Time-offset-utc OPTIONAL,
    ... }"
}

```

3.3.10.1.2 XML REPRESENTATION

```

<xs:complexType name="DateTimeZone">
    <xs:sequence>
        <xs:element name="date" type="Date"/>
        <xs:element name="time" type="Time"/>
        <xs:element name="offset" type="Time-offset-utc" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.10.2 urlReference

3.3.10.2.1 ASN.1 REPRESENTATION

```
urlReference ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "UrlReference:frame"
  ASN-NAME "UrlReference"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 115 }
  DEFINITION          "Contains a url and a code describing type of url."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 122 }, -- Url-reference
    { tmddDataElements 123 } -- Url-reference-type  }
  DATA-TYPE "UrlReference ::= SEQUENCE {
    url-reference Url-reference,
    url-reference-medium Url-reference-type OPTIONAL,
    ...  }"
}
```

3.3.10.2.2 XML REPRESENTATION

```
<xs:complexType name="UrlReference">
  <xs:sequence>
    <xs:element name="url-reference" type="Url-reference"/>
    <xs:element name="url-reference-medium" type="Url-reference-type"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.11 HAR Class Data Frames

3.3.11.1 hARControlDetails

3.3.11.1.1 ASN.1 REPRESENTATION

```
hARControlDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "HARControlDetails:frame"
  ASN-NAME "HARControlDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 116 }
  DEFINITION          "The control parameter associated with the command in a HAR control
request."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 126 }, -- Har-message
    { tmddDataElements 192 } -- Organization-resource-identifier  }
  DATA-TYPE "HARControlDetails ::= CHOICE {
    har-message Har-message,
    har-message-number Organization-resource-identifier,
    ...  }"
}
```

3.3.11.1.2 XML REPRESENTATION

```
<xs:complexType name="HARControlDetails">
  <xs:choice>
    <xs:element name="har-message" type="Har-message"/>
```



```

        <xs:element name="har-message-number" type="Organization-resource-
identifier"/>
    </xs:choice>
</xs:complexType>

```

3.3.11.2 hARControlRequest

3.3.11.2.1 ASN.1 REPRESENTATION

```

hARControlRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "HARControlRequest:frame"
    ASN-NAME "HARControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 117 }
    DEFINITION "The information content necessary to request a control action of an
owner center's highway advisory radio."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 24 }, -- DeviceControlRequestHeader
        { tmddDataFrames 116 } -- HARControlDetails
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 127 } -- Har-request-command }
    DATA-TYPE "HARControlRequest ::= SEQUENCE {
        device-control-request-header DeviceControlRequestHeader,
        har-request-command Har-request-command,
        har-command-parameters HARControlDetails,
        ... }"
}

```

3.3.11.2.2 XML REPRESENTATION

```

<xs:complexType name="HARControlRequest">
    <xs:sequence>
        <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
        <xs:element name="har-request-command" type="Har-request-command"/>
        <xs:element name="har-command-parameters" type="HARControlDetails"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.11.3 hARControlSchedule

3.3.11.3.1 ASN.1 REPRESENTATION

```

hARControlSchedule ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "HARControlSchedule:frame"
    ASN-NAME "HARControlSchedule"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 118 }
    DEFINITION "The information content describing an owner center's highway
advisory radio control schedule for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 26 } -- DeviceControlScheduleHeader
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 } -- Organization-resource-identifier }
    DATA-TYPE "HARControlSchedule ::= SEQUENCE {
        device-control-schedule-header DeviceControlScheduleHeader,

```

```

        message-number Organization-resource-identifier,
        ... }"
    }

```

3.3.11.3.2 XML REPRESENTATION

```

<xs:complexType name="HARControlSchedule">
    <xs:sequence>
        <xs:element name="device-control-schedule-header"
type="DeviceControlScheduleHeader"/>
        <xs:element name="message-number" type="Organization-resource-
identifier"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.11.4 hARInventory

3.3.11.4.1 ASN.1 REPRESENTATION

```

hARInventory ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "HARInventory:frame"
    ASN-NAME "HARInventory"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 119 }
    DEFINITION "The information content describing the attributes of an owner
center's highway advisory radio."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 30 } -- DeviceInventoryHeader
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 19 }, -- Device-beacon
        { tmddDataElements 125 }, -- Har-characteristics
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 124 } -- Har-call-sign
    }
    DATA-TYPE "HARInventory ::= SEQUENCE {
        device-inventory-header DeviceInventoryHeader,
        device-beacon Device-beacon,
        har-characteristics Har-characteristics OPTIONAL,
        har-frequency-description Organization-resource-name OPTIONAL,
        har-call-sign Har-call-sign OPTIONAL,
        ... }"
}

```

3.3.11.4.2 XML REPRESENTATION

```

<xs:complexType name="HARInventory">
    <xs:sequence>
        <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
        <xs:element name="device-beacon" type="Device-beacon"/>
        <xs:element name="har-characteristics" type="Har-characteristics"
minOccurs="0"/>
        <xs:element name="har-frequency-description" type="Organization-
resource-name" minOccurs="0"/>
        <xs:element name="har-call-sign" type="Har-call-sign" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.11.5 hARMessageInventory

3.3.11.5.1 ASN.1 REPRESENTATION

```
hARMessageInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "HARMessageInventory:frame"
  ASN-NAME "HARMessageInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 120 }
  DEFINITION "The information content describing an owner center's highway
  advisory message library for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 126 } -- Har-message }
  DATA-TYPE "HARMessageInventory ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    device-id Organization-resource-identifier,
    message-number Organization-resource-identifier,
    current-message Har-message,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
}
```

3.3.11.5.2 XML REPRESENTATION

```
<xs:complexType name="HARMessageInventory">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="device-id" type="Organization-resource-
identifier"/>
    <xs:element name="message-number" type="Organization-resource-
identifier"/>
    <xs:element name="current-message" type="Har-message"/>
    <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.11.6 hARPriorityQueue

3.3.11.6.1 ASN.1 REPRESENTATION

```
hARPriorityQueue ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "HARPriorityQueue:frame"
  ASN-NAME "HARPriorityQueue"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 121 }
  DEFINITION "The information content describing an owner center's highway
  advisory radio control priority queue for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
```

```

    { tmddDataFrames 31 }, -- DevicePriorityQueueHeader
    { tmddDataFrames 116 } -- HARControlDetails
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 127 } -- Har-request-command }
DATA-TYPE "HARPriorityQueue ::= SEQUENCE {
    device-priority-queue-header DevicePriorityQueueHeader,
    har-request-command Har-request-command,
    har-queue-parameters HARControlDetails,
    ... }"
}

```

3.3.11.6.2 XML REPRESENTATION

```

<xs:complexType name="HARPriorityQueue">
    <xs:sequence>
        <xs:element name="device-priority-queue-header"
type="DevicePriorityQueueHeader"/>
        <xs:element name="har-request-command" type="Har-request-command"/>
        <xs:element name="har-queue-parameters" type="HARControlDetails"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.11.7 hARStatus

3.3.11.7.1 ASN.1 REPRESENTATION

```

hARStatus ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "HARStatus:frame"
    ASN-NAME "HARStatus"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 122 }
    DEFINITION "The information content describing an owner center's highway
    advisory radio status for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 35 } -- DeviceStatusHeader
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 126 }, -- Har-message
        { dmsMessageEntry 6 }, -- NTCIP.DmsMessageBeacon
        { tmddDataElements 192 } -- Organization-resource-identifier }
    DATA-TYPE "HARStatus ::= SEQUENCE {
        device-status-header DeviceStatusHeader,
        har-current-message Har-message,
        message-beacon NTCIP.DmsMessageBeacon OPTIONAL,
        message-number Organization-resource-identifier OPTIONAL,
        ... }"
}

```

3.3.11.7.2 XML REPRESENTATION

```

<xs:complexType name="HARStatus">
    <xs:sequence>
        <xs:element name="device-status-header" type="DeviceStatusHeader"/>
        <xs:element name="har-current-message" type="Har-message"/>
        <xs:element name="message-beacon" type="ntcip:DmsMessageBeacon"
minOccurs="0"/>
        <xs:element name="message-number" type="Organization-resource-
identifier" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

```

        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12 IntersectionSignal Class Data Frames

3.3.12.1 intersectionSignalControlDetails

3.3.12.1.1 ASN.1 REPRESENTATION

```

intersectionSignalControlDetails ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalControlDetails:frame"
    ASN-NAME "IntersectionSignalControlDetails"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 123 }
    DEFINITION "The control parameter associated with the command in an intersection
    control request. At least one of the optional data elements must be selected
    (transmitted)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

DATA-CONCEPT-TYPE data-frame

STANDARD "TMDD"

REFERENCED-DATA-ELEMENTS {

 { [tmddDataElements 131](#) }, -- Intersection-signal-control-mode

 { [tmddDataElements 192](#) }, -- Organization-resource-identifier

 { [patternEntry 3](#) } -- NTCIP.PatternOffsetTime }

DATA-TYPE "IntersectionSignalControlDetails ::= SEQUENCE {

 request-timing-mode Intersection-signal-control-mode OPTIONAL,

 timing-pattern-id Organization-resource-identifier OPTIONAL,

 offset-adjustment NTCIP.PatternOffsetTime OPTIONAL,

 ... }"

3.3.12.1.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalControlDetails">
    <xs:sequence>
        <xs:element name="request-timing-mode" type="Intersection-signal-
control-mode" minOccurs="0"/>
        <xs:element name="timing-pattern-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="offset-adjustment" type="ntcip:PatternOffsetTime"
minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.2 intersectionSignalControlRequest

3.3.12.2.1 ASN.1 REPRESENTATION

```

intersectionSignalControlRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalControlRequest:frame"
    ASN-NAME "IntersectionSignalControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 124 }
    DEFINITION "The information content necessary to request a control action of an
    owner center's traffic signal."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

DATA-CONCEPT-TYPE data-frame

STANDARD "TMDD"

REFERENCED-DATA-FRAMES {

 { [tmddDataFrames 24](#) }, -- DeviceControlRequestHeader

 { [tmddDataFrames 123](#) } -- IntersectionSignalControlDetails

}

REFERENCED-DATA-ELEMENTS {

 { [tmddDataElements 133](#) } -- Intersection-signal-request-command }

```
DATA-TYPE "IntersectionSignalControlRequest ::= SEQUENCE {
    device-control-request-header DeviceControlRequestHeader,
    intersection-request-command Intersection-signal-request-command,
    intersection-command-parameters IntersectionSignalControlDetails,
    ... }"
```

3.3.12.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalControlRequest">
    <xs:sequence>
        <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
        <xs:element name="intersection-request-command" type="Intersection-
signal-request-command"/>
        <xs:element name="intersection-command-parameters"
type="IntersectionSignalControlDetails"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

3.3.12.3 intersectionSignalControlResponse

3.3.12.3.1 ASN.1 REPRESENTATION

```
intersectionSignalControlResponse ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalControlResponse:frame"
    ASN-NAME "IntersectionSignalControlResponse"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 125 }
    DEFINITION "The information content describing an owner center's response to a
traffic signal control request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 25 } -- DeviceControlResponse
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 130 }, -- Intersection-planned-signal-timing-mode
        { patternEntry 3 } -- NTCIP.PatternOffsetTime
    }
    DATA-TYPE "IntersectionSignalControlResponse ::= SEQUENCE {
        device-control-response-header DeviceControlResponse,
        section-id Organization-resource-identifier OPTIONAL,
        request-control-mode Intersection-planned-signal-timing-mode OPTIONAL,
        timing-pattern-id Organization-resource-identifier OPTIONAL,
        offset-adjustment NTCIP.PatternOffsetTime OPTIONAL,
        ... }"
```

3.3.12.3.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalControlResponse">
    <xs:sequence>
        <xs:element name="device-control-response-header"
type="DeviceControlResponse"/>
        <xs:element name="section-id" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="request-control-mode" type="Intersection-planned-
signal-timing-mode" minOccurs="0"/>
        <xs:element name="timing-pattern-id" type="Organization-resource-
identifier" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

```

        <xs:element name="offset-adjustment" type="ntcip:PatternOffsetTime"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.4 intersectionSignalControlSchedule

3.3.12.4.1 ASN.1 REPRESENTATION

```

intersectionSignalControlSchedule ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "IntersectionSignalControlSchedule:frame"
ASN-NAME "IntersectionSignalControlSchedule"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 126 }
DEFINITION "The information content describing an owner center's traffic signal
control schedule for a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 26 } -- DeviceControlScheduleHeader
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 131 }, -- Intersection-signal-control-mode
    { tmddDataElements 192 } -- Organization-resource-identifier }
DATA-TYPE "IntersectionSignalControlSchedule ::= SEQUENCE {
    device-control-schedule-header DeviceControlScheduleHeader,
    request-control-mode Intersection-signal-control-mode,
    timing-pattern-id Organization-resource-identifier,
    ... }"
}

```

3.3.12.4.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalControlSchedule">
    <xs:sequence>
        <xs:element name="device-control-schedule-header"
type="DeviceControlScheduleHeader"/>
        <xs:element name="request-control-mode" type="Intersection-signal-
control-mode"/>
        <xs:element name="timing-pattern-id" type="Organization-resource-
identifier"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.5 intersectionSignalInventory

3.3.12.5.1 ASN.1 REPRESENTATION

```

intersectionSignalInventory ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "IntersectionSignalInventory:frame"
ASN-NAME "IntersectionSignalInventory"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 127 }
DEFINITION "The information content describing an entry in the owner center's
traffic signal inventory for a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 }, -- DeviceInventoryHeader
    { tmddDataFrames 128 }, -- IntersectionSignalInventoryLinkList
    { tmddDataFrames 143 }, -- IntersectionSignalMovement
}

```

```

    { tmddDataFrames 132 }, -- IntersectionSignalInventoryPhase
    { tmddDataFrames 130 }, -- IntersectionSignalOverlapPhase
    { tmddDataFrames 136 }, -- IntersectionSignalRing
    { tmddDataFrames 139 } -- IntersectionSignalSpecialFunctions
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 203 }, -- Transportation-network-name
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 138 }, -- Time-reference-code
    { timebaseAsc 1 } -- NTCIP.TimebaseAscPatternSync }
DATA-TYPE "IntersectionSignalInventory" ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    intersection-name Transportation-network-name,
    controller-master-id Organization-resource-identifier OPTIONAL,
    intersection-link-list SEQUENCE (SIZE(1..32)) OF
IntersectionSignalInventoryLinkList OPTIONAL,
    movement-list SEQUENCE (SIZE(1..64)) OF IntersectionSignalMovement OPTIONAL,
    phase-list SEQUENCE (SIZE(1..40)) OF IntersectionSignalInventoryPhase OPTIONAL,
    overlap-phase-list SEQUENCE (SIZE(1..16)) OF IntersectionSignalOverlapPhase
OPTIONAL,
    ring-list SEQUENCE (SIZE(1..16)) OF IntersectionSignalRing OPTIONAL,
    special-functions-list SEQUENCE (SIZE(1..16)) OF
IntersectionSignalSpecialFunctions OPTIONAL,
    time-reference-code Time-reference-code OPTIONAL,
    pattern-sync-reference NTCIP.TimebaseAscPatternSync OPTIONAL,
    ... }"
}

```

3.3.12.5.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalInventory">
  <xs:sequence>
    <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
    <xs:element name="intersection-name" type="Transportation-network-
name"/>
    <xs:element name="controller-master-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="intersection-link-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="32">
          <xs:element name="link"
type="IntersectionSignalInventoryLinkList"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="movement-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="64">
          <xs:element name="intersection-movements"
type="IntersectionSignalMovement"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="phase-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="40">
          <xs:element name="phases"
type="IntersectionSignalInventoryPhase"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="overlap-phase-list" minOccurs="0">
      <xs:complexType>

```



```

        <xs:sequence maxOccurs="16">
            <xs:element name="overlap-phases"
type="IntersectionSignalOverlapPhase"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="ring-list" minOccurs="0">
    <xs:complexType>
        <xs:sequence maxOccurs="16">
            <xs:element name="rings"
type="IntersectionSignalRing"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="special-functions-list" minOccurs="0">
    <xs:complexType>
        <xs:sequence maxOccurs="16">
            <xs:element name="special-functions"
type="IntersectionSignalSpecialFunctions"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="time-reference-code" type="Time-reference-code"
minOccurs="0"/>
    <xs:element name="pattern-sync-reference"
type="ntcip:TimebaseAscPatternSync" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

3.3.12.6 intersectionSignalInventoryLinkList

3.3.12.6.1 ASN.1 REPRESENTATION

```

intersectionSignalInventoryLinkList ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalInventoryLinkList:frame"
    ASN-NAME "IntersectionSignalInventoryLinkList"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 128 }
    DEFINITION "A data frame identifying link id and direction."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 201 }, -- Transportation-network-identifier
        { tmddDataElements 150 } -- Link-direction }
    DATA-TYPE "IntersectionSignalInventoryLinkList ::= SEQUENCE {
        link-id Transportation-network-identifier,
        link-direction Link-direction OPTIONAL,
        ... }"
}

```

3.3.12.6.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalInventoryLinkList">
    <xs:sequence>
        <xs:element name="link-id" type="Transportation-network-identifier"/>
        <xs:element name="link-direction" type="Link-direction"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.7 intersectionSignalInventoryPhase

3.3.12.7.1 ASN.1 REPRESENTATION

```
intersectionSignalInventoryPhase ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "IntersectionSignalInventoryPhase:frame"
  ASN-NAME "IntersectionSignalInventoryPhase"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 132 }
  DEFINITION "A data frame that defines the attributes for a phase for a signal."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { phaseEntry 1 }, -- NTCIP.PhaseNumber
    { splitEntry 5 }, -- NTCIP.SplitCoordPhase
    { tmddDataElements 192 } -- Organization-resource-identifier }
  DATA-TYPE "IntersectionSignalInventoryPhase" ::= SEQUENCE {
    phase-identifier NTCIP.PhaseNumber,
    coordinated-phase NTCIP.SplitCoordPhase,
    concurrent-phases-list SEQUENCE (SIZE(1..16)) OF NTCIP.PhaseNumber,
    active-movements-list SEQUENCE (SIZE(1..16)) OF Organization-resource-identifier
  }
  OPTIONAL,
  ... }"
```

3.3.12.7.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalInventoryPhase">
  <xs:sequence>
    <xs:element name="phase-identifier" type="ntcip:PhaseNumber"/>
    <xs:element name="coordinated-phase" type="ntcip:SplitCoordPhase"/>
    <xs:element name="concurrent-phases-list">
      <xs:complexType>
        <xs:sequence maxOccurs="16">
          <xs:element name="phase-identifier"
            type="ntcip:PhaseNumber"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="active-movements-list" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="16">
          <xs:element name="movement-identifier"
            type="Organization-resource-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.12.8 intersectionSignalMovement

3.3.12.8.1 ASN.1 REPRESENTATION

```
intersectionSignalMovement ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "IntersectionSignalMovement:frame"
  ASN-NAME "IntersectionSignalMovement"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 143 }
  DEFINITION "The information content describing the turning movements at a
  controlled intersection."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
```

```

STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { lrmsDataFrames geoLocation(1) } -- LRMS.GeoLocation }
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 136 }, -- Intersection-turning-movement-angle
    { tmddDataElements 135 }, -- Intersection-turning-movement-code
    { tmddDataElements 152 }, -- Link-lane-number
    { tmddDataElements 193 } -- Organization-resource-name }
DATA-TYPE "IntersectionSignalMovement ::= SEQUENCE {
    movement-identifier Organization-resource-identifier,
    approach-link-id Organization-resource-identifier,
    departing-link-id Organization-resource-identifier OPTIONAL,
    crossing-point LRMS.GeoLocation OPTIONAL,
    approach-vector Intersection-turning-movement-angle,
    turning-movement-code Intersection-turning-movement-code,
    turning-movement-lanes SEQUENCE (SIZE(1..64)) OF Link-lane-number OPTIONAL,
    turning-movement-text Organization-resource-name OPTIONAL,
    ... }"
}

```

3.3.12.8.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalMovement">
    <xs:sequence>
        <xs:element name="movement-identifier" type="Organization-resource-
identifier"/>
        <xs:element name="approach-link-id" type="Organization-resource-
identifier"/>
        <xs:element name="departing-link-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="crossing-point" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="approach-vector" type="Intersection-turning-
movement-angle"/>
        <xs:element name="turning-movement-code" type="Intersection-turning-
movement-code"/>
        <xs:element name="turning-movement-lanes" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="64">
                    <xs:element name="lanes" type="Link-lane-
number"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="turning-movement-text" type="Organization-resource-
name" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.9 intersectionSignalOverlapPhase

3.3.12.9.1 ASN.1 REPRESENTATION

```

intersectionSignalOverlapPhase ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalOverlapPhase:frame"
    ASN-NAME "IntersectionSignalOverlapPhase"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 130 }
    DEFINITION "A data frame that defines the attributes for an overlap phase for a
signal."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
}

```

```

STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { overlapEntry 1 }, -- NTCIP.OverlapNumber
    { phaseEntry 1 }, -- NTCIP.PhaseNumber
    { tmddDataElements 192 } -- Organization-resource-identifier }
DATA-TYPE "IntersectionSignalOverlapPhase" ::= SEQUENCE {
    overlap-identifier NTCIP.OverlapNumber,
    overlap-included-phases SEQUENCE (SIZE(1..8)) OF NTCIP.PhaseNumber,
    active-movements-list SEQUENCE (SIZE(1..16)) OF Organization-resource-identifier
OPTIONAL,
    ... }"
}

```

3.3.12.9.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalOverlapPhase">
    <xs:sequence>
        <xs:element name="overlap-identifier" type="ntcip:OverlapNumber"/>
        <xs:element name="overlap-included-phases">
            <xs:complexType>
                <xs:sequence maxOccurs="8">
                    <xs:element name="phase-identifier"
type="ntcip:PhaseNumber"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="active-movements-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="16">
                    <xs:element name="movement-identifier"
type="Organization-resource-identifier"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.10 intersectionSignalOverlapStatusGroup

3.3.12.10.1 ASN.1 REPRESENTATION

```

intersectionSignalOverlapStatusGroup ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalOverlapStatusGroup:frame"
    ASN-NAME "IntersectionSignalOverlapStatusGroup"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 131 }
    DEFINITION "A data frame that defines the active signal indications for a group
of overlap phases for a signal."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { overlapStatusGroupEntry 1 }, -- NTCIP.OverlapStatusGroupNumber
        { overlapStatusGroupEntry 4 }, -- NTCIP.OverlapStatusGroupGreens
        { overlapStatusGroupEntry 3 }, -- NTCIP.OverlapStatusGroupYellows
        { overlapStatusGroupEntry 2 } -- NTCIP.OverlapStatusGroupReds }
    DATA-TYPE "IntersectionSignalOverlapStatusGroup" ::= SEQUENCE {
        overlap-status-group-number NTCIP.OverlapStatusGroupNumber,
        overlap-status-group-greens NTCIP.OverlapStatusGroupGreens,
        overlap-status-group-yellows NTCIP.OverlapStatusGroupYellows OPTIONAL,
        overlap-status-group-reds NTCIP.OverlapStatusGroupReds OPTIONAL,
        ... }"
}

```

3.3.12.10.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalOverlapStatusGroup">
  <xs:sequence>
    <xs:element name="overlap-status-group-number"
type="ntcip:OverlapStatusGroupNumber"/>
    <xs:element name="overlap-status-group-greens"
type="ntcip:OverlapStatusGroupGreens"/>
    <xs:element name="overlap-status-group-yellows"
type="ntcip:OverlapStatusGroupYellows" minOccurs="0"/>
    <xs:element name="overlap-status-group-reds"
type="ntcip:OverlapStatusGroupReds" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.12.11 intersectionSignalPhaseSplit

3.3.12.11.1 ASN.1 REPRESENTATION

```
intersectionSignalPhaseSplit ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "IntersectionSignalPhaseSplit:frame"
ASN-NAME "IntersectionSignalPhaseSplit"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 133 }
DEFINITION      "A data frame the defines the time in tenths of a second, a phase is
allowed to receive."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
  { phaseEntry 1 }, -- NTCIP.PhaseNumber
  { tmddDataElements 137 } -- Intersection-timing-duration }
DATA-TYPE "IntersectionSignalPhaseSplit ::= SEQUENCE {
  phase-identifier NTCIP.PhaseNumber,
  phase-duration Intersection-timing-duration,
  ... }"
}
```

3.3.12.11.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalPhaseSplit">
  <xs:sequence>
    <xs:element name="phase-identifier" type="ntcip:PhaseNumber"/>
    <xs:element name="phase-duration" type="Intersection-timing-
duration"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.12.12 intersectionSignalPhaseStatusGroup

3.3.12.12.1 ASN.1 REPRESENTATION

```
intersectionSignalPhaseStatusGroup ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "IntersectionSignalPhaseStatusGroup:frame"
ASN-NAME "IntersectionSignalPhaseStatusGroup"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 134 }
DEFINITION      "A data frame that defines the active signal indications for a group
of phases for a signal."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
```

```

REFERENCED-DATA-ELEMENTS {
    { phaseStatusGroupEntry 1 }, -- NTCIP.PhaseStatusGroupNumber
    { phaseStatusGroupEntry 4 }, -- NTCIP.PhaseStatusGroupGreens
    { phaseStatusGroupEntry 3 }, -- NTCIP.PhaseStatusGroupYellows
    { phaseStatusGroupEntry 2 }, -- NTCIP.PhaseStatusGroupReds
    { phaseStatusGroupEntry 7 }, -- NTCIP.PhaseStatusGroupWalks
    { phaseStatusGroupEntry 6 }, -- NTCIP.PhaseStatusGroupPedClears
    { phaseStatusGroupEntry 5 } -- NTCIP.PhaseStatusGroupDontWalks }
DATA-TYPE "IntersectionSignalPhaseStatusGroup ::= SEQUENCE {
    phase-status-group-number NTCIP.PhaseStatusGroupNumber,
    phase-status-group-greens NTCIP.PhaseStatusGroupGreens,
    phase-status-group-yellows NTCIP.PhaseStatusGroupYellows OPTIONAL,
    phase-status-group-reds NTCIP.PhaseStatusGroupReds OPTIONAL,
    phase-status-group-walks NTCIP.PhaseStatusGroupWalks OPTIONAL,
    phase-status-group-pedclears NTCIP.PhaseStatusGroupPedClears OPTIONAL,
    phase-status-group-dontwalks NTCIP.PhaseStatusGroupDontWalks OPTIONAL,
    ... }"
}

```

3.3.12.12.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalPhaseStatusGroup">
    <xs:sequence>
        <xs:element name="phase-status-group-number"
type="ntcip:PhaseStatusGroupNumber"/>
        <xs:element name="phase-status-group-greens"
type="ntcip:PhaseStatusGroupGreens"/>
        <xs:element name="phase-status-group-yellows"
type="ntcip:PhaseStatusGroupYellows" minOccurs="0"/>
        <xs:element name="phase-status-group-reds"
type="ntcip:PhaseStatusGroupReds" minOccurs="0"/>
        <xs:element name="phase-status-group-walks"
type="ntcip:PhaseStatusGroupWalks" minOccurs="0"/>
        <xs:element name="phase-status-group-pedclears"
type="ntcip:PhaseStatusGroupPedClears" minOccurs="0"/>
        <xs:element name="phase-status-group-dontwalks"
type="ntcip:PhaseStatusGroupDontWalks" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.13 intersectionSignalPriorityQueue

3.3.12.13.1 ASN.1 REPRESENTATION

```

intersectionSignalPriorityQueue ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalPriorityQueue:frame"
    ASN-NAME "IntersectionSignalPriorityQueue"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 135 }
    DEFINITION "The information content describing an owner center's traffic signal
control priority queue for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 31 }, -- DevicePriorityQueueHeader
        { tmddDataFrames 123 } -- IntersectionSignalControlDetails
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 133 } -- Intersection-signal-request-command }
    DATA-TYPE "IntersectionSignalPriorityQueue ::= SEQUENCE {
        device-priority-queue-header DevicePriorityQueueHeader,
        intersection-request-command IntersectionSignalRequestCommand,

```

```

        intersection-queue-parameters IntersectionSignalControlDetails,
        ... }"
    }

```

3.3.12.13.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalPriorityQueue">
    <xs:sequence>
        <xs:element name="device-priority-queue-header"
type="DevicePriorityQueueHeader"/>
        <xs:element name="intersection-request-command" type="Intersection-
signal-request-command"/>
        <xs:element name="intersection-queue-parameters"
type="IntersectionSignalControlDetails"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.14 intersectionSignalRing

3.3.12.14.1 ASN.1 REPRESENTATION

```

intersectionSignalRing ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "IntersectionSignalRing:frame"
ASN-NAME "IntersectionSignalRing"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 136 }
DEFINITION "A data frame that defines the phases that are assigned to the ring."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { phaseEntry 1 } -- NTCIP.PhaseNumber }
DATA-TYPE "IntersectionSignalRing" ::= SEQUENCE {
    ring-identifier Organization-resource-identifier,
    ring-phase-assignment SEQUENCE (SIZE(1..16)) OF NTCIP.PhaseNumber,
    ... }"
}

```

3.3.12.14.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalRing">
    <xs:sequence>
        <xs:element name="ring-identifier" type="Organization-resource-
identifier"/>
        <xs:element name="ring-phase-assignment">
            <xs:complexType>
                <xs:sequence maxOccurs="16">
                    <xs:element name="ring-phase-identifier"
type="ntcip:PhaseNumber"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.15 intersectionSignalRingStatus

3.3.12.15.1 ASN.1 REPRESENTATION

```
intersectionSignalRingStatus ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "IntersectionSignalRingStatus:frame"
  ASN-NAME "IntersectionSignalRingStatus"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 137 }
  DEFINITION "A data frame that indicates the status of the phases of the ring."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { ringStatusEntry 1 } -- NTCIP.RingStatus }
  DATA-TYPE "IntersectionSignalRingStatus ::= SEQUENCE {
    ring-identifier Organization-resource-identifier,
    ring-status NTCIP.RingStatus,
    ... }"
}
```

3.3.12.15.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalRingStatus">
  <xs:sequence>
    <xs:element name="ring-identifier" type="Organization-resource-
  identifier"/>
    <xs:element name="ring-status" type="ntcip:RingStatus"/>
  </xs:sequence>
</xs:complexType>
```

3.3.12.16 intersectionSignalSequenceData

3.3.12.16.1 ASN.1 REPRESENTATION

```
intersectionSignalSequenceData ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "IntersectionSignalSequenceData:frame"
  ASN-NAME "IntersectionSignalSequenceData"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 138 }
  DEFINITION "A data frame that defines the order that the phases in the ring are
  arranged."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { phaseEntry 1 } -- NTCIP.PhaseNumber }
  DATA-TYPE "IntersectionSignalSequenceData ::= SEQUENCE {
    ring-identifier Organization-resource-identifier,
    sequence-data SEQUENCE (SIZE(1..16)) OF NTCIP.PhaseNumber,
    ... }"
}
```

3.3.12.16.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalSequenceData">
  <xs:sequence>
    <xs:element name="ring-identifier" type="Organization-resource-
  identifier"/>
    <xs:element name="sequence-data">
      <xs:complexType>
        <xs:sequence maxOccurs="16">
          <xs:element name="phase-identifier"
  type="ntcip:PhaseNumber"/>
        </xs:sequence>
      </xs:complexType>
  </xs:sequence>
</xs:complexType>
```



```

        </xs:element>
    </xs:sequence>
</xs:complexType>

```

3.3.12.17 intersectionSignalSpecialFunctions

3.3.12.17.1 ASN.1 REPRESENTATION

```

intersectionSignalSpecialFunctions ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalSpecialFunctions:frame"
    ASN-NAME "IntersectionSignalSpecialFunctions"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 139 }
    DEFINITION "The information content describing a traffic signal controller's
    special functions."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { specialFunctionOutputEntry 1 }, -- NTCIP.SpecialFunctionOutputNumber
        { tmddDataElements 193 } -- Organization-resource-name }
    DATA-TYPE "IntersectionSignalSpecialFunctions ::= SEQUENCE {
        special-function-identifier NTCIP.SpecialFunctionOutputNumber,
        special-function-description Organization-resource-name OPTIONAL,
        ... }"
}

```

3.3.12.17.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalSpecialFunctions">
    <xs:sequence>
        <xs:element name="special-function-identifier"
type="ntcip:SpecialFunctionOutputNumber"/>
        <xs:element name="special-function-description" type="Organization-
resource-name" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.18 intersectionSignalStatus

3.3.12.18.1 ASN.1 REPRESENTATION

```

intersectionSignalStatus ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalStatus:frame"
    ASN-NAME "IntersectionSignalStatus"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 140 }
    DEFINITION "The information content describing an owner center's traffic signal
status for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 35 }, -- DeviceStatusHeader
        { tmddDataFrames 114 }, -- DateTimeZone
        { tmddDataFrames 133 }, -- IntersectionSignalPhaseSplit
        { tmddDataFrames 137 }, -- IntersectionSignalRingStatus
        { tmddDataFrames 134 }, -- IntersectionSignalPhaseStatusGroup
        { tmddDataFrames 131 } -- IntersectionSignalOverlapStatusGroup
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 132 }, -- Intersection-signal-control-source
        { tmddDataElements 130 }, -- Intersection-planned-signal-timing-mode
        { tmddDataElements 134 }, -- Intersection-signal-timing-mode
    }
}

```

```

{ tmddDataElements 192 }, -- Organization-resource-identifier
{ tmddDataElements 193 }, -- Organization-resource-name
{ tmddDataElements 128 }, -- Intersection-actuation-mode
{ splitEntry 4 }, -- NTCIP.SplitMode
{ patternEntry 2 }, -- NTCIP.PatternCycleTime
{ coord 12 }, -- NTCIP.CoordCycleStatus
{ coord 13 }, -- NTCIP.CoordSyncStatus
{ tmddDataElements 129 }, -- Intersection-offset-reference
{ patternEntry 3 } -- NTCIP.PatternOffsetTime }
DATA-TYPE "IntersectionSignalStatus" ::= SEQUENCE {
    device-status-header DeviceStatusHeader,
    signal-control-source Intersection-signal-control-source,
    planned-signal-timing-mode Intersection-planned-signal-timing-mode,
    current-signal-timing-mode Intersection-signal-timing-mode,
    section-id Organization-resource-identifier OPTIONAL,
    planned-signal-timing-mode-description Organization-resource-name OPTIONAL,
    timing-pattern-id-current Organization-resource-identifier OPTIONAL,
    timing-pattern-description Organization-resource-name OPTIONAL,
    actuation-mode Intersection-actuation-mode OPTIONAL,
    timing-phase-plan-mode NTCIP.SplitMode OPTIONAL,
    cycle-length-planned NTCIP.PatternCycleTime OPTIONAL,
    cycle-length-current NTCIP.PatternCycleTime OPTIONAL,
    cycle-length-previous NTCIP.PatternCycleTime OPTIONAL,
    cycle-length-master NTCIP.PatternCycleTime OPTIONAL,
    cycle-counter NTCIP.CoordCycleStatus OPTIONAL,
    cycle-counter-master NTCIP.CoordSyncStatus OPTIONAL,
    offset-reference Intersection-offset-reference OPTIONAL,
    offset-time-planned NTCIP.PatternOffsetTime OPTIONAL,
    offset-time-current NTCIP.PatternOffsetTime OPTIONAL,
    offset-time-previous NTCIP.PatternOffsetTime OPTIONAL,
    controller-timestamp DateTimeZone OPTIONAL,
    phase-split-list SEQUENCE (SIZE(1..40)) OF IntersectionSignalPhaseSplit OPTIONAL,
    ring-status-list SEQUENCE (SIZE(1..8)) OF IntersectionSignalRingStatus OPTIONAL,
    phase-status SEQUENCE (SIZE(1..5)) OF IntersectionSignalPhaseStatusGroup OPTIONAL,
    overlap-status SEQUENCE (SIZE(1..2)) OF IntersectionSignalOverlapStatusGroup
OPTIONAL,
    active-special-functions-list SEQUENCE (SIZE(1..8)) OF Organization-resource-
identifier OPTIONAL,
    preempt-priority-description Organization-resource-name OPTIONAL,
    ... }"
}

```

3.3.12.18.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalStatus">
    <xs:sequence>
        <xs:element name="device-status-header" type="DeviceStatusHeader"/>
        <xs:element name="signal-control-source" type="Intersection-signal-
control-source"/>
        <xs:element name="planned-signal-timing-mode" type="Intersection-
planned-signal-timing-mode"/>
        <xs:element name="current-signal-timing-mode" type="Intersection-
signal-timing-mode"/>
        <xs:element name="section-id" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="planned-signal-timing-mode-description"
type="Organization-resource-name" minOccurs="0"/>
        <xs:element name="timing-pattern-id-current" type="Organization-
resource-identifier" minOccurs="0"/>
        <xs:element name="timing-pattern-description" type="Organization-
resource-name" minOccurs="0"/>
        <xs:element name="actuation-mode" type="Intersection-actuation-mode"
minOccurs="0"/>
    
```

```

minOccurs="0"/>
<xs:element name="timing-phase-plan-mode" type="ntcip:SplitMode"
minOccurs="0"/>
<xs:element name="cycle-length-planned" type="ntcip:PatternCycleTime"
minOccurs="0"/>
<xs:element name="cycle-length-current" type="ntcip:PatternCycleTime"
minOccurs="0"/>
<xs:element name="cycle-length-previous"
type="ntcip:PatternCycleTime" minOccurs="0"/>
<xs:element name="cycle-length-master" type="ntcip:PatternCycleTime"
minOccurs="0"/>
<xs:element name="cycle-counter" type="ntcip:CoordCycleStatus"
minOccurs="0"/>
<xs:element name="cycle-counter-master" type="ntcip:CoordSyncStatus"
minOccurs="0"/>
<xs:element name="offset-reference" type="Intersection-offset-
reference" minOccurs="0"/>
<xs:element name="offset-time-planned" type="ntcip:PatternOffsetTime"
minOccurs="0"/>
<xs:element name="offset-time-current" type="ntcip:PatternOffsetTime"
minOccurs="0"/>
<xs:element name="offset-time-previous"
type="ntcip:PatternOffsetTime" minOccurs="0"/>
<xs:element name="controller-timestamp" type="DateTimeZone"
minOccurs="0"/>
<xs:element name="phase-split-list" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="40">
      <xs:element name="phase-split"
type="IntersectionSignalPhaseSplit"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="ring-status-list" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="8">
      <xs:element name="ring-status"
type="IntersectionSignalRingStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="phase-status" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="5">
      <xs:element name="phase-status-group"
type="IntersectionSignalPhaseStatusGroup"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="overlap-status" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="2">
      <xs:element name="overlap-status-group"
type="IntersectionSignalOverlapStatusGroup"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="active-special-functions-list" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="8">
      <xs:element name="special-functions"
type="Organization-resource-identifier"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

        <xs:element name="preempt-priority-description" type="Organization-
resource-name" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.19 intersectionSignalTimingPatternInventory

3.3.12.19.1 ASN.1 REPRESENTATION

```

intersectionSignalTimingPatternInventory ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "IntersectionSignalTimingPatternInventory:frame"
ASN-NAME "IntersectionSignalTimingPatternInventory"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 141 }
DEFINITION "The information content describing an entry in an owner center's
traffic signal timing pattern inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 129 }, -- IntersectionSignalTPInventoryPhase
    { tmddDataFrames 138 }, -- IntersectionSignalSequenceData
    { tmddDataFrames 114 } -- DateTimeZone
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 193 }, -- Organization-resource-name
    { patternEntry 2 }, -- NTCIP.PatternCycleTime
    { patternEntry 3 } -- NTCIP.PatternOffsetTime
}
DATA-TYPE "IntersectionSignalTimingPatternInventory" ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    device-id Organization-resource-identifier,
    timing-pattern-id Organization-resource-identifier,
    timing-pattern-name Organization-resource-name OPTIONAL,
    cycle-length NTCIP.PatternCycleTime,
    offset-time NTCIP.PatternOffsetTime,
    phase-tp-list SEQUENCE (SIZE(1..40)) OF IntersectionSignalTPInventoryPhase,
    sequence-information SEQUENCE (SIZE(1..8)) OF IntersectionSignalSequenceData
OPTIONAL,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.12.19.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalTimingPatternInventory">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="device-id" type="Organization-resource-
identifier"/>
        <xs:element name="timing-pattern-id" type="Organization-resource-
identifier"/>
        <xs:element name="timing-pattern-name" type="Organization-resource-
name" minOccurs="0"/>
        <xs:element name="cycle-length" type="ntcip:PatternCycleTime"/>
        <xs:element name="offset-time" type="ntcip:PatternOffsetTime"/>
        <xs:element name="phase-tp-list">
            <xs:complexType>

```

```

        <xs:sequence maxOccurs="40">
            <xs:element name="phases"
type="IntersectionSignalTPInventoryPhase"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="sequence-information" minOccurs="0">
    <xs:complexType>
        <xs:sequence maxOccurs="8">
            <xs:element name="sequence-information"
type="IntersectionSignalSequenceData"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

3.3.12.20 intersectionSignalTimingPatternInventoryRequest

3.3.12.20.1 ASN.1 REPRESENTATION

```

intersectionSignalTimingPatternInventoryRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalTimingPatternInventoryRequest:frame"
    ASN-NAME "IntersectionSignalTimingPatternInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 142 }
    DEFINITION "The information content necessary to request an owner center's
traffic signal timing pattern inventory. All signal timing patterns are being
requested if the optional timing-pattern-id is not sent as part of the request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 28 } -- DeviceInformationRequest
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 } -- Organization-resource-identifier }
    DATA-TYPE "IntersectionSignalTimingPatternInventoryRequest ::= SEQUENCE {
        device-information-request-header DeviceInformationRequest,
        timing-pattern-id Organization-resource-identifier OPTIONAL,
        ... }"
}

```

3.3.12.20.2 XML REPRESENTATION

```

<xs:complexType name="IntersectionSignalTimingPatternInventoryRequest">
    <xs:sequence>
        <xs:element name="device-information-request-header"
type="DeviceInformationRequest"/>
        <xs:element name="timing-pattern-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.12.21 intersectionSignalTPInventoryPhase

3.3.12.21.1 ASN.1 REPRESENTATION

```

intersectionSignalTPInventoryPhase ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "IntersectionSignalTPInventoryPhase:frame"

```

```
ASN-NAME "IntersectionSignalTPInventoryPhase"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 129 }
DEFINITION "A data frame defines the phase attributes of a timing pattern."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-ELEMENTS {
    { phaseEntry 1 }, -- NTCIP.PhaseNumber
    { splitEntry 5 }, -- NTCIP.SplitCoordPhase
    { splitEntry 4 }, -- NTCIP.SplitMode
    { splitEntry 3 }, -- NTCIP.SplitTime
    { tmddDataElements 137 } -- Intersection-timing-duration }
DATA-TYPE "IntersectionSignalTPInventoryPhase" ::= SEQUENCE {
    phase-identifier NTCIP.PhaseNumber,
    coordinated-phase NTCIP.SplitCoordPhase,
    split-mode NTCIP.SplitMode,
    phase-split NTCIP.SplitTime,
    maximum-green-duration Intersection-timing-duration OPTIONAL,
    minimum-green-duration Intersection-timing-duration OPTIONAL,
    vehicle-clearance-duration Intersection-timing-duration OPTIONAL,
    vehicle-red-duration Intersection-timing-duration OPTIONAL,
    minimum-walk-duration Intersection-timing-duration OPTIONAL,
    pedestrian-clearance-duration Intersection-timing-duration OPTIONAL,
    steady-dont-walk-duration Intersection-timing-duration OPTIONAL,
    ... }"
}
```

3.3.12.21.2 XML REPRESENTATION

```
<xs:complexType name="IntersectionSignalTPInventoryPhase">
  <xs:sequence>
    <xs:element name="phase-identifier" type="ntcip:PhaseNumber"/>
    <xs:element name="coordinated-phase" type="ntcip:SplitCoordPhase"/>
    <xs:element name="split-mode" type="ntcip:SplitMode"/>
    <xs:element name="phase-split" type="ntcip:SplitTime"/>
    <xs:element name="maximum-green-duration" type="Intersection-timing-
duration" minOccurs="0"/>
    <xs:element name="minimum-green-duration" type="Intersection-timing-
duration" minOccurs="0"/>
    <xs:element name="vehicle-clearance-duration" type="Intersection-
timing-duration" minOccurs="0"/>
    <xs:element name="vehicle-red-duration" type="Intersection-timing-
duration" minOccurs="0"/>
    <xs:element name="minimum-walk-duration" type="Intersection-timing-
duration" minOccurs="0"/>
    <xs:element name="pedestrian-clearance-duration" type="Intersection-
timing-duration" minOccurs="0"/>
    <xs:element name="steady-dont-walk-duration" type="Intersection-
timing-duration" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.13 LCS Class Data Frames

3.3.13.1 ICSCControlRequest

3.3.13.1.1 ASN.1 REPRESENTATION

```
lCSControlRequest ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "LCSCControlRequest:frame"
ASN-NAME "LCSCControlRequest"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 144 }
```

```

DEFINITION          "The information content necessary to request a control action of an
owner center's lane control signal."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 24 } -- DeviceControlRequestHeader
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 141 } -- Lcs-lane-request-command }
DATA-TYPE "LCSCControlRequest ::= SEQUENCE {
    device-control-request-header DeviceControlRequestHeader,
    lcs-request-command Lcs-lane-request-command,
    ... }"
}

```

3.3.13.1.2 XML REPRESENTATION

```

<xs:complexType name="LCSCControlRequest">
    <xs:sequence>
        <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
        <xs:element name="lcs-request-command" type="Lcs-lane-request-
command"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.13.2 LCSCControlSchedule

3.3.13.2.1 ASN.1 REPRESENTATION

```

lCSControlSchedule ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "LCSCControlSchedule:frame"
ASN-NAME "LCSCControlSchedule"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 145 }
DEFINITION          "The information content describing an owner center's lane control
signal control schedule for a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 26 } -- DeviceControlScheduleHeader
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 141 } -- Lcs-lane-request-command }
DATA-TYPE "LCSCControlSchedule ::= SEQUENCE {
    device-control-schedule-header DeviceControlScheduleHeader,
    lane-request-command Lcs-lane-request-command,
    ... }"
}

```

3.3.13.2.2 XML REPRESENTATION

```

<xs:complexType name="LCSCControlSchedule">
    <xs:sequence>
        <xs:element name="device-control-schedule-header"
type="DeviceControlScheduleHeader"/>
        <xs:element name="lane-request-command" type="Lcs-lane-request-
command"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>

```

</xs:complexType>

3.3.13.3 ICSInventory

3.3.13.3.1 ASN.1 REPRESENTATION

```

LCSInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "LCSInventory:frame"
  ASN-NAME "LCSInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 146 }
  DEFINITION          "The information content describing an entry in the owner center's
lane control signal inventory for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 } -- DeviceInventoryHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 152 }, -- Link-lane-number
    { tmddDataElements 153 } -- Link-lanes-count }
  DATA-TYPE "LCSInventory ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    controlled-lane-number Link-lane-number,
    link-lane-count Link-lanes-count OPTIONAL,
    ... }"
}

```

3.3.13.3.2 XML REPRESENTATION

```

<xs:complexType name="LCSInventory">
  <xs:sequence>
    <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
    <xs:element name="controlled-lane-number" type="Link-lane-number"/>
    <xs:element name="link-lane-count" type="Link-lanes-count"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.13.4 LCSStatus

3.3.13.4.1 ASN.1 REPRESENTATION

```

LCSSStatus ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "LCSSStatus:frame"
  ASN-NAME "LCSSStatus"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 147 }
  DEFINITION          "The information content describing an owner center's lane control
signal status for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 35 } -- DeviceStatusHeader
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 140 }, -- Lcs-lane-current-state
    { tmddDataElements 150 } -- Link-direction }
  DATA-TYPE "LCSSStatus ::= SEQUENCE {
    device-status-header DeviceStatusHeader,
    lane-current-state Lcs-lane-current-state,

```



```

    link-direction Link-direction,
    ... }"
}

```

3.3.13.4.2 XML REPRESENTATION

```

<xs:complexType name="LCSStatus">
  <xs:sequence>
    <xs:element name="device-status-header" type="DeviceStatusHeader"/>
    <xs:element name="lane-current-state" type="Lcs-lane-current-state"/>
    <xs:element name="link-direction" type="Link-direction"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.14 Link Class Data Frames

3.3.14.1 linearReferenceRange

3.3.14.1.1 ASN.1 REPRESENTATION

```

linearReferenceRange ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "LinearReferenceRange:frame"
  ASN-NAME "LinearReferenceRange"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 189 }
  DEFINITION "A data frame that defines the range of linear reference values for
  which request is valid for."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 156 } -- Link-location-linear-reference }
  DATA-TYPE "LinearReferenceRange ::= SEQUENCE {
    linear-reference-start Link-location-linear-reference,
    linear-reference-end Link-location-linear-reference,
    ... }"
}

```

3.3.14.1.2 XML REPRESENTATION

```

<xs:complexType name="LinearReferenceRange">
  <xs:sequence>
    <xs:element name="linear-reference-start" type="Link-location-linear-
  reference"/>
    <xs:element name="linear-reference-end" type="Link-location-linear-
  reference"/>
  </xs:sequence>
</xs:complexType>

```

3.3.14.2 linkInventory

3.3.14.2.1 ASN.1 REPRESENTATION

```

linkInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "LinkInventory:frame"
  ASN-NAME "LinkInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 148 }
  DEFINITION "The information content describing the static attributes for a list
  of an owner center's traffic network links."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
}

```

```

REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 149 } -- LinkInventoryList }
DATA-TYPE "LinkInventory ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    link-inventory-list SEQUENCE (SIZE(1..65535)) OF LinkInventoryList,
    ... }"
}

```

3.3.14.2 XML REPRESENTATION

```

<xs:complexType name="LinkInventory">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="link-inventory-list">
            <xs:complexType>
                <xs:sequence maxOccurs="65535">
                    <xs:element name="link"
type="LinkInventoryList"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.14.3 linkInventoryList

3.3.14.3.1 ASN.1 REPRESENTATION

```

linkInventoryList ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "LinkInventoryList:frame"
    ASN-NAME "LinkInventoryList"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 149 }
    DEFINITION "The information content describing the static attributes for a
single link."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { lrmsDataFrames geoLocation\(1\) }, -- LRMS.GeoLocation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 201 }, -- Transportation-network-identifier
        { tmddDataElements 203 }, -- Transportation-network-name
        { tmddDataElements 170 }, -- Link-route-designator
        { tmddDataElements 180 }, -- Link-type
        { tmddDataElements 156 }, -- Link-location-linear-reference
        { tmddDataElements 157 }, -- Link-location-linear-reference-version
        { tmddDataElements 154 }, -- Link-length
        { tmddDataElements 144 }, -- Link-capacity
        { tmddDataElements 173 }, -- Link-speed-limit
        { tmddDataElements 174 }, -- Link-speed-limit-units
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 171 }, -- Link-shoulder-width
        { tmddDataElements 158 } -- Link-median-type }
    }
DATA-TYPE "LinkInventoryList ::= SEQUENCE {
    network-id Transportation-network-identifier,

```

```

network-name Transportation-network-name OPTIONAL,
link-id Transportation-network-identifier,
link-name Transportation-network-name OPTIONAL,
alternate-link-name Transportation-network-name OPTIONAL,
link-route-designator Link-route-designator OPTIONAL,
secondary-link-route-designator Link-route-designator OPTIONAL,
link-type Link-type,
link-begin-node-id Transportation-network-identifier,
link-begin-node-location LRMS.GeoLocation,
link-end-node-id Transportation-network-identifier,
link-end-node-location LRMS.GeoLocation,
linear-reference Link-location-linear-reference OPTIONAL,
linear-reference-version Link-location-linear-reference-version OPTIONAL,
link-length Link-length OPTIONAL,
link-capacity Link-capacity OPTIONAL,
link-speed-limit Link-speed-limit OPTIONAL,
link-speed-limit-truck Link-speed-limit OPTIONAL,
link-speed-limit-units Link-speed-limit-units OPTIONAL,
link-jurisdiction Organization-resource-name OPTIONAL,
link-owner Organization-resource-name OPTIONAL,
left-shoulder-width Link-shoulder-width OPTIONAL,
right-shoulder-width Link-shoulder-width OPTIONAL,
lane-separator Link-median-type OPTIONAL,
last-update-time DateTimeZone OPTIONAL,
... }"
}

```

3.3.14.3.2 XML REPRESENTATION

```

<xs:complexType name="LinkInventoryList">
  <xs:sequence>
    <xs:element name="network-id" type="Transportation-network-
  identifier"/>
    <xs:element name="network-name" type="Transportation-network-name"
  minOccurs="0"/>
    <xs:element name="link-id" type="Transportation-network-identifier"/>
    <xs:element name="link-name" type="Transportation-network-name"
  minOccurs="0"/>
    <xs:element name="alternate-link-name" type="Transportation-network-
  name" minOccurs="0"/>
    <xs:element name="link-route-designator" type="Link-route-designator"
  minOccurs="0"/>
    <xs:element name="secondary-link-route-designator" type="Link-route-
  designator" minOccurs="0"/>
    <xs:element name="link-type" type="Link-type"/>
    <xs:element name="link-begin-node-id" type="Transportation-network-
  identifier"/>
    <xs:element name="link-begin-node-location" type="lrms:GeoLocation"/>
    <xs:element name="link-end-node-id" type="Transportation-network-
  identifier"/>
    <xs:element name="link-end-node-location" type="lrms:GeoLocation"/>
    <xs:element name="linear-reference" type="Link-location-linear-
  reference" minOccurs="0"/>
    <xs:element name="linear-reference-version" type="Link-location-
  linear-reference-version" minOccurs="0"/>
    <xs:element name="link-length" type="Link-length" minOccurs="0"/>
    <xs:element name="link-capacity" type="Link-capacity" minOccurs="0"/>
    <xs:element name="link-speed-limit" type="Link-speed-limit"
  minOccurs="0"/>
    <xs:element name="link-speed-limit-truck" type="Link-speed-limit"
  minOccurs="0"/>
    <xs:element name="link-speed-limit-units" type="Link-speed-limit-
  units" minOccurs="0"/>
  
```

```

        <xs:element name="link-jurisdiction" type="Organization-resource-
name" minOccurs="0"/>
        <xs:element name="link-owner" type="Organization-resource-name"
minOccurs="0"/>
        <xs:element name="left-shoulder-width" type="Link-shoulder-width"
minOccurs="0"/>
        <xs:element name="right-shoulder-width" type="Link-shoulder-width"
minOccurs="0"/>
        <xs:element name="lane-separator" type="Link-median-type"
minOccurs="0"/>
        <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.14.4 linkStatus

3.3.14.4.1 ASN.1 REPRESENTATION

```

linkStatus ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "LinkStatus:frame"
    ASN-NAME "LinkStatus"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 150 }
    DEFINITION "The information content describing an owner center's traffic network
link status for a list of links."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 151 } -- LinkStatusList
    }
    DATA-TYPE "LinkStatus ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        link-status-list SEQUENCE (SIZE(1..10240)) OF LinkStatusList,
        ... }"
}

```

3.3.14.4.2 XML REPRESENTATION

```

<xs:complexType name="LinkStatus">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="link-status-list">
            <xs:complexType>
                <xs:sequence maxOccurs="10240">
                    <xs:element name="link"
type="LinkStatusList"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.14.5 linkStatusList

3.3.14.5.1 ASN.1 REPRESENTATION

```

linkStatusList ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "LinkStatusList:frame"
  ASN-NAME "LinkStatusList"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 151 }
  DEFINITION "The information content describing the dynamic attributes for a
  single link."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 201 }, -- Transportation-network-identifier
    { tmddDataElements 203 }, -- Transportation-network-name
    { tmddDataElements 175 }, -- Link-status
    { tmddDataElements 150 }, -- Link-direction
    { tmddDataElements 153 }, -- Link-lanes-count
    { tmddDataElements 162 }, -- Link-priority-type
    { tmddDataElements 163 }, -- Link-restriction-axle-count
    { tmddDataElements 164 }, -- Link-restriction-height
    { tmddDataElements 165 }, -- Link-restriction-length
    { tmddDataElements 168 }, -- Link-restriction-weight-vehicle
    { tmddDataElements 169 }, -- Link-restriction-width
    { tmddDataElements 167 }, -- Link-restriction-weight-axle
    { tmddDataElements 166 }, -- Link-restriction-units
    { tmddDataElements 177 }, -- Link-surface-condition
    { tmddDataElements 160 }, -- Link-oversaturated-flag
    { tmddDataElements 161 }, -- Link-oversaturated-threshold
    { tmddDataElements 155 }, -- Link-level-of-service
    { tmddDataElements 152 }, -- Link-lane-number
    { tmddDataElements 146 }, -- Link-data-stored
    { tmddDataElements 82 }, -- Event-detection-method
    { tmddDataElements 147 }, -- Link-data-type
    { tmddDataElements 176 }, -- Link-stops
    { tmddDataElements 148 }, -- Link-delay
    { tmddDataElements 143 }, -- Link-alternate-route-delay
    { tmddDataElements 151 }, -- Link-headway
    { tmddDataElements 178 }, -- Link-travel-time
    { tmddDataElements 145 }, -- Link-capacity-existing
    { tmddDataElements 179 }, -- Link-travel-time-increase
    { tmddDataElements 172 }, -- Link-speed-average
    { tmddDataElements 110 }, -- Event-speed-vehicle-estimated
    { tmddDataElements 173 }, -- Link-speed-limit
    { tmddDataElements 174 }, -- Link-speed-limit-units
    { tmddDataElements 149 }, -- Link-density
    { tmddDataElements 159 }, -- Link-occupancy
    { tmddDataElements 181 }, -- Link-volume
    { tmddDataElements 81 } -- Event-description-time }
  }
  DATA-TYPE "LinkStatusList ::= SEQUENCE {
    network-id Transportation-network-identifier,
    link-id Transportation-network-identifier,
    link-name Transportation-network-name OPTIONAL,
    link-status Link-status,
    link-direction Link-direction OPTIONAL,
    lanes-number-open Link-lanes-count OPTIONAL,
    priority-type Link-priority-type OPTIONAL,
    restriction-axle-count Link-restriction-axle-count OPTIONAL,
    restriction-height Link-restriction-height OPTIONAL,
    restriction-length Link-restriction-length OPTIONAL,
    restriction-weight Link-restriction-weight-vehicle OPTIONAL,
    restriction-width Link-restriction-width OPTIONAL,
    restriction-weight-axle Link-restriction-weight-axle OPTIONAL,
    restriction-units Link-restriction-units OPTIONAL,
    surface-condition Link-surface-condition OPTIONAL,

```

```

saturation-flag Link-oversaturated-flag OPTIONAL,
oversaturated-threshold Link-oversaturated-threshold OPTIONAL,
level-of-service Link-level-of-service OPTIONAL,
lane-numbers SEQUENCE (SIZE(1..64)) OF Link-lane-number OPTIONAL,
link-data-stored Link-data-stored OPTIONAL,
detection-method Event-detection-method OPTIONAL,
link-traffic-data-algorithm Link-data-type OPTIONAL,
stops Link-stops OPTIONAL,
delay Link-delay OPTIONAL,
alternate-route-delay Link-alternate-route-delay OPTIONAL,
headway Link-headway OPTIONAL,
travel-time Link-travel-time OPTIONAL,
capacity-existing Link-capacity-existing OPTIONAL,
travel-time-increase Link-travel-time-increase OPTIONAL,
speed-average Link-speed-average OPTIONAL,
speed-vehicle-estimated Event-speed-vehicle-estimated OPTIONAL,
speed-limit Link-speed-limit OPTIONAL,
advisory-speed-limit Link-speed-limit OPTIONAL,
truck-speed-limit Link-speed-limit OPTIONAL,
speed-limit-units Link-speed-limit-units OPTIONAL,
density Link-density OPTIONAL,
occupancy Link-occupancy OPTIONAL,
volume Link-volume OPTIONAL,
event-description-time Event-description-time OPTIONAL,
last-update-time DateTimeZone OPTIONAL,
... }"
}

```

3.3.14.5.2 XML REPRESENTATION

```

<xs:complexType name="LinkStatusList">
  <xs:sequence>
    <xs:element name="network-id" type="Transportation-network-
  identifier"/>
    <xs:element name="link-id" type="Transportation-network-identifier"/>
    <xs:element name="link-name" type="Transportation-network-name"
  minOccurs="0"/>
    <xs:element name="link-status" type="Link-status"/>
    <xs:element name="link-direction" type="Link-direction"
  minOccurs="0"/>
    <xs:element name="lanes-number-open" type="Link-lanes-count"
  minOccurs="0"/>
    <xs:element name="priority-type" type="Link-priority-type"
  minOccurs="0"/>
    <xs:element name="restriction-axle-count" type="Link-restriction-
  axle-count" minOccurs="0"/>
    <xs:element name="restriction-height" type="Link-restriction-height"
  minOccurs="0"/>
    <xs:element name="restriction-length" type="Link-restriction-length"
  minOccurs="0"/>
    <xs:element name="restriction-weight" type="Link-restriction-weight-
  vehicle" minOccurs="0"/>
    <xs:element name="restriction-width" type="Link-restriction-width"
  minOccurs="0"/>
    <xs:element name="restriction-weight-axle" type="Link-restriction-
  weight-axle" minOccurs="0"/>
    <xs:element name="restriction-units" type="Link-restriction-units"
  minOccurs="0"/>
    <xs:element name="surface-condition" type="Link-surface-condition"
  minOccurs="0"/>
    <xs:element name="saturation-flag" type="Link-oversaturated-flag"
  minOccurs="0"/>
    <xs:element name="oversaturated-threshold" type="Link-oversaturated-
  threshold" minOccurs="0"/>
  
```

```

minOccurs="0"/>
    <xs:element name="level-of-service" type="Link-level-of-service"
    <xs:element name="lane-numbers" minOccurs="0">
        <xs:complexType>
            <xs:sequence maxOccurs="64">
                <xs:element name="lanes" type="Link-lane-
number"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="link-data-stored" type="Link-data-stored"
minOccurs="0"/>
    <xs:element name="detection-method" type="Event-detection-method"
minOccurs="0"/>
    <xs:element name="link-traffic-data-algorithm" type="Link-data-type"
minOccurs="0"/>
    <xs:element name="stops" type="Link-stops" minOccurs="0"/>
    <xs:element name="delay" type="Link-delay" minOccurs="0"/>
    <xs:element name="alternate-route-delay" type="Link-alternate-route-
delay" minOccurs="0"/>
    <xs:element name="headway" type="Link-headway" minOccurs="0"/>
    <xs:element name="travel-time" type="Link-travel-time"
minOccurs="0"/>
    <xs:element name="capacity-existing" type="Link-capacity-existing"
minOccurs="0"/>
    <xs:element name="travel-time-increase" type="Link-travel-time-
increase" minOccurs="0"/>
    <xs:element name="speed-average" type="Link-speed-average"
minOccurs="0"/>
    <xs:element name="speed-vehicle-estimated" type="Event-speed-vehicle-
estimated" minOccurs="0"/>
    <xs:element name="speed-limit" type="Link-speed-limit"
minOccurs="0"/>
    <xs:element name="advisory-speed-limit" type="Link-speed-limit"
minOccurs="0"/>
    <xs:element name="truck-speed-limit" type="Link-speed-limit"
minOccurs="0"/>
    <xs:element name="speed-limit-units" type="Link-speed-limit-units"
minOccurs="0"/>
    <xs:element name="density" type="Link-density" minOccurs="0"/>
    <xs:element name="occupancy" type="Link-occupancy" minOccurs="0"/>
    <xs:element name="volume" type="Link-volume" minOccurs="0"/>
    <xs:element name="event-description-time" type="Event-description-
time" minOccurs="0"/>
    <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

3.3.15 Node Class Data Frames

3.3.15.1 nodeInventory

3.3.15.1.1 ASN.1 REPRESENTATION

```

nodeInventory ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "NodeInventory:frame"
    ASN-NAME "NodeInventory"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 152 }
    DEFINITION "The information content describing the static attributes for a list
of an owner center's traffic network nodes."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"

```

```

REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 153 } -- NodeInventoryList }
DATA-TYPE "NodeInventory" ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    node-inventory-list SEQUENCE (SIZE(1..10240)) OF NodeInventoryList,
    ... }"
}

```

3.3.15.1.2 XML REPRESENTATION

```

<xs:complexType name="NodeInventory">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="node-inventory-list">
            <xs:complexType>
                <xs:sequence maxOccurs="10240">
                    <xs:element name="node"
type="NodeInventoryList"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.15.2 nodeInventoryList

3.3.15.2.1 ASN.1 REPRESENTATION

```

nodeInventoryList ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "NodeInventoryList:frame"
    ASN-NAME "NodeInventoryList"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 153 }
    DEFINITION "The information content describing the static attributes for a
single node."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { lrmsDataFrames geoLocation(1) }, -- LRMS.GeoLocation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 201 }, -- Transportation-network-identifier
        { tmddDataElements 203 }, -- Transportation-network-name
        { tmddDataElements 170 }, -- Link-route-designator
        { tmddDataElements 150 }, -- Link-direction
        { tmddDataElements 156 }, -- Link-location-linear-reference
        { tmddDataElements 157 }, -- Link-location-linear-reference-version
        { tmddDataElements 184 }, -- Node-type
        { tmddDataElements 182 } -- Node-links-number }
    DATA-TYPE "NodeInventoryList" ::= SEQUENCE {
        network-id Transportation-network-identifier,
        network-name Transportation-network-name OPTIONAL,
        node-id Transportation-network-identifier,
        node-name Transportation-network-name OPTIONAL,
        node-description Transportation-network-name OPTIONAL,
        node-route-designator Link-route-designator OPTIONAL,

```



```

node-direction Link-direction OPTIONAL,
linear-reference Link-location-linear-reference OPTIONAL,
linear-reference-version Link-location-linear-reference-version OPTIONAL,
node-type Node-type OPTIONAL,
node-location LRMS.GeoLocation,
node-links-number Node-links-number OPTIONAL,
last-update-time DateTimeZone OPTIONAL,
... }"
}

```

3.3.15.2.2 XML REPRESENTATION

```

<xs:complexType name="NodeInventoryList">
  <xs:sequence>
    <xs:element name="network-id" type="Transportation-network-
  identifier"/>
    <xs:element name="network-name" type="Transportation-network-name"
  minOccurs="0"/>
    <xs:element name="node-id" type="Transportation-network-identifier"/>
    <xs:element name="node-name" type="Transportation-network-name"
  minOccurs="0"/>
    <xs:element name="node-description" type="Transportation-network-
  name" minOccurs="0"/>
    <xs:element name="node-route-designator" type="Link-route-designator"
  minOccurs="0"/>
    <xs:element name="node-direction" type="Link-direction"
  minOccurs="0"/>
    <xs:element name="linear-reference" type="Link-location-linear-
  reference" minOccurs="0"/>
    <xs:element name="linear-reference-version" type="Link-location-
  linear-reference-version" minOccurs="0"/>
    <xs:element name="node-type" type="Node-type" minOccurs="0"/>
    <xs:element name="node-location" type="lrms:GeoLocation"/>
    <xs:element name="node-links-number" type="Node-links-number"
  minOccurs="0"/>
    <xs:element name="last-update-time" type="DateTimeZone"
  minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.15.3 nodeStatus

3.3.15.3.1 ASN.1 REPRESENTATION

```

nodeStatus ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "NodeStatus:frame"
  ASN-NAME "NodeStatus"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 154 }
  DEFINITION "The information content describing an owner center's traffic network
  node status for a list of nodes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 155 } -- NodeStatusList
  }
  DATA-TYPE "NodeStatus ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    node-status-list SEQUENCE (SIZE(1..255)) OF NodeStatusList,
    ... }"

```

}

3.3.15.3.2 XML REPRESENTATION

```
<xs:complexType name="NodeStatus">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="node-status-list">
      <xs:complexType>
        <xs:sequence maxOccurs="255">
          <xs:element name="node"
type="NodeStatusList"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.15.4 nodeStatusList

3.3.15.4.1 ASN.1 REPRESENTATION

```
nodeStatusList ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "NodeStatusList:frame"
  ASN-NAME "NodeStatusList"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 155 }
  DEFINITION "The information content describing the dynamic attributes for a
single node."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 201 }, -- Transportation-network-identifier
    { tmddDataElements 203 }, -- Transportation-network-name
    { tmddDataElements 183 } -- Node-status
  }
  DATA-TYPE "NodeStatusList ::= SEQUENCE {
    network-id Transportation-network-identifier,
    network-name Transportation-network-name OPTIONAL,
    node-id Transportation-network-identifier,
    node-name Transportation-network-name OPTIONAL,
    node-status Node-status,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
```

3.3.15.4.2 XML REPRESENTATION

```
<xs:complexType name="NodeStatusList">
  <xs:sequence>
    <xs:element name="network-id" type="Transportation-network-
identifier"/>
    <xs:element name="network-name" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="node-id" type="Transportation-network-identifier"/>
    <xs:element name="node-name" type="Transportation-network-name"
minOccurs="0"/>
```

```

        <xs:element name="node-status" type="Node-status"/>
        <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.16 Organization Class Data Frames

3.3.16.1 contactDetails

3.3.16.1.1 ASN.1 REPRESENTATION

```

contactDetails ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "ContactDetails:frame"
    ASN-NAME "ContactDetails"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 156 }
    DEFINITION "The personal contact information for a single individual within an
organization or a center."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 186 }, -- Contact-mailing-address-entry
        { tmddDataElements 187 } -- Contact-mailing-address-state }
    DATA-TYPE "ContactDetails ::= SEQUENCE {
        contact-id Organization-resource-identifier,
        person-name Organization-resource-name OPTIONAL,
        person-title Organization-resource-name OPTIONAL,
        phone-number Organization-resource-identifier OPTIONAL,
        phone-alternate Organization-resource-identifier OPTIONAL,
        mobile-phone-number Organization-resource-identifier OPTIONAL,
        mobile-phone-id Organization-resource-identifier OPTIONAL,
        fax-number Organization-resource-identifier OPTIONAL,
        pager-number Organization-resource-identifier OPTIONAL,
        pager-id Organization-resource-identifier OPTIONAL,
        email-address Organization-resource-name OPTIONAL,
        radio-unit Organization-resource-identifier OPTIONAL,
        address-line1 Contact-mailing-address-entry OPTIONAL,
        address-line2 Contact-mailing-address-entry OPTIONAL,
        city Contact-mailing-address-entry OPTIONAL,
        state Contact-mailing-address-state OPTIONAL,
        zip-code Contact-mailing-address-entry OPTIONAL,
        country Contact-mailing-address-entry OPTIONAL,
        ... }"
}

```

3.3.16.1.2 XML REPRESENTATION

```

<xs:complexType name="ContactDetails">
    <xs:sequence>
        <xs:element name="contact-id" type="Organization-resource-
identifier"/>
        <xs:element name="person-name" type="Organization-resource-name"
minOccurs="0"/>
        <xs:element name="person-title" type="Organization-resource-name"
minOccurs="0"/>
        <xs:element name="phone-number" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="phone-alternate" type="Organization-resource-
identifier" minOccurs="0"/>
    
```

```

        <xs:element name="mobile-phone-number" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="mobile-phone-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="fax-number" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="pager-number" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="pager-id" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="email-address" type="Organization-resource-name"
minOccurs="0"/>
        <xs:element name="radio-unit" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="address-line1" type="Contact-mailing-address-entry"
minOccurs="0"/>
        <xs:element name="address-line2" type="Contact-mailing-address-entry"
minOccurs="0"/>
        <xs:element name="city" type="Contact-mailing-address-entry"
minOccurs="0"/>
        <xs:element name="state" type="Contact-mailing-address-state"
minOccurs="0"/>
        <xs:element name="zip-code" type="Contact-mailing-address-entry"
minOccurs="0"/>
        <xs:element name="country" type="Contact-mailing-address-entry"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.16.2 organizationCenterInformation

3.3.16.2.1 ASN.1 REPRESENTATION

```

organizationCenterInformation ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "OrganizationCenterInformation:frame"
    ASN-NAME "OrganizationCenterInformation"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 157 }
    DEFINITION "The information content describing an organization's center
information for a single center."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { lrmsDataFrames geoLocation(1) }, -- LRMS.GeoLocation
        { tmddDataFrames 156 } -- ContactDetails
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 188 }, -- Organization-function
        { tmddDataElements 185 } -- Center-type
    }
    DATA-TYPE "OrganizationCenterInformation ::= SEQUENCE {
        center-id Organization-resource-identifier,
        center-name Organization-resource-name OPTIONAL,
        center-location LRMS.GeoLocation OPTIONAL,
        center-description Organization-function OPTIONAL,
        center-type Center-type OPTIONAL,
        center-contact-details ContactDetails OPTIONAL,
        ... }"
}

```

3.3.16.2.2 XML REPRESENTATION

```
<xs:complexType name="OrganizationCenterInformation">
  <xs:sequence>
    <xs:element name="center-id" type="Organization-resource-
  identifier"/>
    <xs:element name="center-name" type="Organization-resource-name"
  minOccurs="0"/>
    <xs:element name="center-location" type="lrms:GeoLocation"
  minOccurs="0"/>
    <xs:element name="center-description" type="Organization-function"
  minOccurs="0"/>
    <xs:element name="center-type" type="Center-type" minOccurs="0"/>
    <xs:element name="center-contact-details" type="ContactDetails"
  minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.16.3 organizationInformation

3.3.16.3.1 ASN.1 REPRESENTATION

```
organizationInformation ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "OrganizationInformation:frame"
  ASN-NAME "OrganizationInformation"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 158 }
  DEFINITION "The information content describing an organization information for a
  single organization."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 156 }, -- ContactDetails
    { tmddDataFrames 157 }, -- OrganizationCenterInformation
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 193 }, -- Organization-resource-name
    { tmddDataElements 191 }, -- Organization-location-fips
    { tmddDataElements 188 } -- Organization-function }
  DATA-TYPE "OrganizationInformation ::= SEQUENCE {
    organization-id Organization-resource-identifier,
    organization-name Organization-resource-name OPTIONAL,
    organization-location Organization-location-fips OPTIONAL,
    organization-function Organization-function OPTIONAL,
    organization-contact-details ContactDetails OPTIONAL,
    center-contact-list SEQUENCE (SIZE(1..1024)) OF OrganizationCenterInformation
  OPTIONAL,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
```

3.3.16.3.2 XML REPRESENTATION

```
<xs:complexType name="OrganizationInformation">
  <xs:sequence>
    <xs:element name="organization-id" type="Organization-resource-
  identifier"/>
    <xs:element name="organization-name" type="Organization-resource-
  name" minOccurs="0"/>
    <xs:element name="organization-location" type="Organization-location-
  fips" minOccurs="0"/>
```

```

        <xs:element name="organization-function" type="Organization-function"
minOccurs="0"/>
        <xs:element name="organization-contact-details" type="ContactDetails"
minOccurs="0"/>
        <xs:element name="center-contact-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="1024">
                    <xs:element name="center-contact-details"
type="OrganizationCenterInformation"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.16.4 organizationInformationRequest

3.3.16.4.1 ASN.1 REPRESENTATION

```

organizationInformationRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "OrganizationInformationRequest:frame"
    ASN-NAME "OrganizationInformationRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 159 }
    DEFINITION "The information content necessary to request an owner center's
organization information."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 9 }, -- Authentication
        { tmddDataFrames 158 } -- OrganizationInformation
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 190 }, -- Organization-information-type
        { tmddDataElements 192 } -- Organization-resource-identifier }
    DATA-TYPE "OrganizationInformationRequest ::= SEQUENCE {
        authentication Authentication OPTIONAL,
        organization-requesting OrganizationInformation,
        organization-information-type Organization-information-type,
        organization-id Organization-resource-identifier OPTIONAL,
        center-id-list SEQUENCE (SIZE(1..1024)) OF Organization-resource-identifier
OPTIONAL,
        ... }"
}

```

3.3.16.4.2 XML REPRESENTATION

```

<xs:complexType name="OrganizationInformationRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:element name="organization-information-type" type="Organization-
information-type"/>
        <xs:element name="organization-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="center-id-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="1024">

```

```

                                <xs:element name="center-id"
type="Organization-resource-identifier"/>
                                </xs:sequence>
                                </xs:complexType>
                                </xs:element>
                                <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
                                </xs:sequence>
</xs:complexType>

```

3.3.16.5 restrictions

3.3.16.5.1 ASN.1 REPRESENTATION

```

restrictions ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "Restrictions:frame"
  ASN-NAME "Restrictions"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 160 }
  DEFINITION          "The information content describing restrictions on forwarding an
owner center's information content by an external center."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 189 } -- Organization-information-forwarding-restrictions }
  DATA-TYPE "Restrictions ::= SEQUENCE {
    organization-information-forwarding-restrictions Organization-information-
forwarding-restrictions,
    ... }"
}

```

3.3.16.5.2 XML REPRESENTATION

```

<xs:complexType name="Restrictions">
  <xs:sequence>
    <xs:element name="organization-information-forwarding-restrictions"
type="Organization-information-forwarding-restrictions"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.17 RampMeter Class Data Frames

3.3.17.1 rampControlDetails

3.3.17.1.1 ASN.1 REPRESENTATION

```

rampControlDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RampControlDetails:frame"
  ASN-NAME "RampControlDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 161 }
  DEFINITION          "The control parameter associated with the command in a ramp meter
control request. At least one of the optional data elements must be selected
(transmitted).".
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { rmcMeterCtrlEntry 3 }, -- NTCIP.RmcManualPlan
    { rmcMeterCtrlEntry 4 } -- NTCIP.RmcManualRate }
  DATA-TYPE "RampControlDetails ::= SEQUENCE {
    meter-requested-plan NTCIP.RmcManualPlan OPTIONAL,
    meter-requested-rate NTCIP.RmcManualRate OPTIONAL,
    ... }"
}

```

}

3.3.17.1.2 XML REPRESENTATION

```
<xs:complexType name="RampControlDetails">
  <xs:sequence>
    <xs:element name="meter-requested-plan" type="ntcip:RmcManualPlan"
minOccurs="0"/>
    <xs:element name="meter-requested-rate" type="ntcip:RmcManualRate"
minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.17.2 rampMeterControlRequest

3.3.17.2.1 ASN.1 REPRESENTATION

```
rampMeterControlRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RampMeterControlRequest:frame"
  ASN-NAME "RampMeterControlRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 162 }
  DEFINITION "The information content necessary to request a control action of an
owner center's ramp meter."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 24 }, -- DeviceControlRequestHeader
    { tmddDataFrames 166 } -- RampMeterLaneControlDetails }
  DATA-TYPE "RampMeterControlRequest ::= SEQUENCE {
    device-control-request-header DeviceControlRequestHeader,
    metered-lane-list SEQUENCE (SIZE(0..24)) OF RampMeterLaneControlDetails,
    ... }"
```

3.3.17.2.2 XML REPRESENTATION

```
<xs:complexType name="RampMeterControlRequest">
  <xs:sequence>
    <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
    <xs:element name="metered-lane-list">
      <xs:complexType>
        <xs:sequence minOccurs="0" maxOccurs="24">
          <xs:element name="metered-lane"
type="RampMeterLaneControlDetails"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.17.3 rampMeterControlSchedule

3.3.17.3.1 ASN.1 REPRESENTATION

```
rampMeterControlSchedule ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RampMeterControlSchedule:frame"
  ASN-NAME "RampMeterControlSchedule"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 163 }
```



```

DEFINITION          "The information content describing an owner center's ramp meter
control schedule for a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 26 } -- DeviceControlScheduleHeader
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 152 }, -- Link-lane-number
    { rmcActionEntry 1 }, -- NTCIP.RmcActionNum
    { rmcMeterActionEntry 3 }, -- NTCIP.RmcTBActionCtrl
    { rmcMeterActionEntry 4 }, -- NTCIP.RmcTBPlanCtrl
    { rmcMeterActionEntry 5 }, -- NTCIP.RmcTBRateCtrl
    { rmcMeterActionEntry 6 }, -- NTCIP.RmcTBVehiclesPerGrnCtrl
    { rmcMeterActionEntry 7 }, -- NTCIP.RmcTBCMinMeterRateCtrl
    { rmcMeterActionEntry 8 }, -- NTCIP.RmcTBCMaxMeterRateCtrl
    { rmcMLActionEntry 3 } -- NTCIP.RmcTBMLUsageMode }
DATA-TYPE "RampMeterControlSchedule ::= SEQUENCE {
    device-control-schedule-header DeviceControlScheduleHeader,
    metered-lane-identifier Link-lane-number,
    action-number NTCIP.RmcActionNum,
    meter-action-control NTCIP.RmcTBActionCtrl OPTIONAL,
    meter-requested-plan NTCIP.RmcTBPlanCtrl OPTIONAL,
    meter-requested-rate NTCIP.RmcTBRateCtrl OPTIONAL,
    meter-vehicles-per-green NTCIP.RmcTBVehiclesPerGrnCtrl OPTIONAL,
    min-meter-rate NTCIP.RmcTBCMinMeterRateCtrl OPTIONAL,
    max-meter-rate NTCIP.RmcTBCMaxMeterRateCtrl OPTIONAL,
    meter-lane-usage-mode NTCIP.RmcTBMLUsageMode OPTIONAL,
    ... }"
}

```

3.3.17.3.2 XML REPRESENTATION

```

<xs:complexType name="RampMeterControlSchedule">
    <xs:sequence>
        <xs:element name="device-control-schedule-header"
type="DeviceControlScheduleHeader"/>
        <xs:element name="metered-lane-identifier" type="Link-lane-number"/>
        <xs:element name="action-number" type="ntcip:RmcActionNum"/>
        <xs:element name="meter-action-control" type="ntcip:RmcTBActionCtrl"
minOccurs="0"/>
        <xs:element name="meter-requested-plan" type="ntcip:RmcTBPlanCtrl"
minOccurs="0"/>
        <xs:element name="meter-requested-rate" type="ntcip:RmcTBRateCtrl"
minOccurs="0"/>
        <xs:element name="meter-vehicles-per-green"
type="ntcip:RmcTBVehiclesPerGrnCtrl" minOccurs="0"/>
        <xs:element name="min-meter-rate" type="ntcip:RmcTBCMinMeterRateCtrl"
minOccurs="0"/>
        <xs:element name="max-meter-rate" type="ntcip:RmcTBCMaxMeterRateCtrl"
minOccurs="0"/>
        <xs:element name="meter-lane-usage-mode"
type="ntcip:RmcTBMLUsageMode" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.17.4 rampMeterInventory

3.3.17.4.1 ASN.1 REPRESENTATION

```

rampMeterInventory ITS-DATA-FRAME ::= {

```

```

DESCRIPTIVE-NAME "RampMeterInventory:frame"
ASN-NAME "RampMeterInventory"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 164 }
DEFINITION "The information content describing an entry in the owner center's
ramp meter inventory for a single device."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 }, -- DeviceInventoryHeader
    { tmddDataFrames 165 } -- RampMeterInventoryDetails }
DATA-TYPE "RampMeterInventory ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    metered-inventory-list SEQUENCE (SIZE(0..24)) OF RampMeterInventoryDetails,
    ... }"
}

```

3.3.17.4.2 XML REPRESENTATION

```

<xs:complexType name="RampMeterInventory">
    <xs:sequence>
        <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
        <xs:element name="metered-inventory-list">
            <xs:complexType>
                <xs:sequence minOccurs="0" maxOccurs="24">
                    <xs:element name="metered-lane"
type="RampMeterInventoryDetails"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.17.5 rampMeterInventoryDetails

3.3.17.5.1 ASN.1 REPRESENTATION

```

rampMeterInventoryDetails ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "RampMeterInventoryDetails:frame"
ASN-NAME "RampMeterInventoryDetails"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 165 }
DEFINITION "Static ramp meter information for a particular lane."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
    { tmddDataFrames 30 } -- DeviceInventoryHeader
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 203 }, -- Transportation-network-name
    { tmddDataElements 152 }, -- Link-lane-number
    { tmddDataElements 197 }, -- Ramp-lane-type
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { rmcMeterCfgEntry 10 }, -- NTCIP.RmcAbsoluteMinMeterRate
    { rmcMeterCfgEntry 11 }, -- NTCIP.RmcAbsoluteMaxMeterRate
    { rmcMeterCfgEntry 12 }, -- NTCIP.RmcSystemMinMeterRate
    { rmcMeterCfgEntry 13 } -- NTCIP.RmcSystemMaxMeterRate }
DATA-TYPE "RampMeterInventoryDetails ::= SEQUENCE {
    metered-lane-inventory-header DeviceInventoryHeader,
    ramp-exit-roadway-name Transportation-network-name,
    lane-number Link-lane-number OPTIONAL,

```

```

        lane-type Ramp-lane-type OPTIONAL,
        associated-detectors SEQUENCE (SIZE(1..32)) OF Organization-resource-identifier
OPTIONAL,
        absolute-minimum-metering-rate NTCIP.RmcAbsoluteMinMeterRate OPTIONAL,
        absolute-maximum-metering-rate NTCIP.RmcAbsoluteMaxMeterRate OPTIONAL,
        system-minimum-metering-rate NTCIP.RmcSystemMinMeterRate OPTIONAL,
        system-maximum-metering-rate NTCIP.RmcSystemMaxMeterRate OPTIONAL,
        ... }"
}

```

3.3.17.5.2 XML REPRESENTATION

```

<xs:complexType name="RampMeterInventoryDetails">
  <xs:sequence>
    <xs:element name="metered-lane-inventory-header"
type="DeviceInventoryHeader"/>
    <xs:element name="ramp-exit-roadway-name" type="Transportation-
network-name"/>
    <xs:element name="lane-number" type="Link-lane-number"
minOccurs="0"/>
    <xs:element name="lane-type" type="Ramp-lane-type" minOccurs="0"/>
    <xs:element name="associated-detectors" minOccurs="0">
      <xs:complexType>
        <xs:sequence maxOccurs="32">
          <xs:element name="detector-id"
type="Organization-resource-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="absolute-minimum-metering-rate"
type="ntcip:RmcAbsoluteMinMeterRate" minOccurs="0"/>
    <xs:element name="absolute-maximum-metering-rate"
type="ntcip:RmcAbsoluteMaxMeterRate" minOccurs="0"/>
    <xs:element name="system-minimum-metering-rate"
type="ntcip:RmcSystemMinMeterRate" minOccurs="0"/>
    <xs:element name="system-maximum-metering-rate"
type="ntcip:RmcSystemMaxMeterRate" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.17.6 rampMeterLaneControlDetails

3.3.17.6.1 ASN.1 REPRESENTATION

```

rampMeterLaneControlDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RampMeterLaneControlDetails:frame"
  ASN-NAME "RampMeterLaneControlDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 166 }
  DEFINITION "Dynamic information attributes (feedback) about the effect of ramp
meter control on a particular lane."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 161 } -- RampControlDetails
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 152 }, -- Link-lane-number
    { rmcMeterStatEntry 7 } -- NTCIP.RmcRequestAction }
  DATA-TYPE "RampMeterLaneControlDetails ::= SEQUENCE {
    metered-lane-identifier Link-lane-number,
    meter-request-command NTCIP.RmcRequestAction,

```

```
meter-command-parameters RampControlDetails OPTIONAL,
... }"
}
```

3.3.17.6.2 XML REPRESENTATION

```
<xs:complexType name="RampMeterLaneControlDetails">
  <xs:sequence>
    <xs:element name="metered-lane-identifier" type="Link-lane-number"/>
    <xs:element name="meter-request-command"
type="ntcip:RmcRequestAction"/>
    <xs:element name="meter-command-parameters" type="RampControlDetails"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.17.7 rampMeterLaneStatusDetails

3.3.17.7.1 ASN.1 REPRESENTATION

```
rampMeterLaneStatusDetails ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "RampMeterLaneStatusDetails:frame"
ASN-NAME "RampMeterLaneStatusDetails"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 167 }
DEFINITION "Dynamic information attributes for a single lane under ramp meter
control."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 35 } -- DeviceStatusHeader
}
REFERENCED-DATA-ELEMENTS {
  { rmcMeterStatEntry 3 }, -- NTCIP.RmcImplementAction
  { rmcMeterStatEntry 1 }, -- NTCIP.RmcRequestCommandSource
  { rmcMeterStatEntry 2 }, -- NTCIP.RmcImplementCommandSource
  { rmcMeterStatEntry 4 }, -- NTCIP.RmcImplementPlan
  { rmcMeterStatEntry 5 }, -- NTCIP.RmcImplementRate
  { rmcMeterStatEntry 6 }, -- NTCIP.RmcImplementVehiclesPerGrn
  { rmcMeterStatEntry 7 }, -- NTCIP.RmcRequestAction
  { rmcMeterStatEntry 8 }, -- NTCIP.RmcRequestPlan
  { rmcMeterStatEntry 9 }, -- NTCIP.RmcRequestRate
  { rmcMeterStatEntry 10 }, -- NTCIP.RmcRequestVehiclesPerGrn
  { rmcMeterStatEntry 21 }, -- NTCIP.RmcOperMinMeterRateStatus
  { rmcMeterStatEntry 22 }, -- NTCIP.RmcOperMaxMeterRateStatus
  { rmcMeterStatEntry 23 }, -- NTCIP.RmcDemandStatus
  { rmcPassageStatEntry 1 }, -- NTCIP.RmcPassageStatus
  { rmcQueueStatEntry 2 }, -- NTCIP.RmcQueueStatus
  { tmddDataElements 194 }, -- Meter-greens-per-cycle
  { tmddDataElements 13 }, -- Detector-vehicle-count
  { tmddDataElements 118 } -- Binary-flag }
DATA-TYPE "RampMeterLaneStatusDetails ::= SEQUENCE {
metered-lane-status-header DeviceStatusHeader,
meter-implemented-action NTCIP.RmcImplementAction,
requested-meter-command-source NTCIP.RmcRequestCommandSource OPTIONAL,
implemented-meter-command-source NTCIP.RmcImplementCommandSource OPTIONAL,
meter-implemented-plan NTCIP.RmcImplementPlan OPTIONAL,
meter-implemented-rate NTCIP.RmcImplementRate OPTIONAL,
meter-implemented-vehicles-per-green NTCIP.RmcImplementVehiclesPerGrn OPTIONAL,
meter-requested-action NTCIP.RmcRequestAction OPTIONAL,
meter-requested-plan NTCIP.RmcRequestPlan OPTIONAL,
meter-requested-rate NTCIP.RmcRequestRate OPTIONAL,
```

```
meter-requested-vehicles-per-green NTCIP.RmcRequestVehiclesPerGrn OPTIONAL,
operational-min-meter-rate NTCIP.RmcOperMinMeterRateStatus OPTIONAL,
operational-max-meter-rate NTCIP.RmcOperMaxMeterRateStatus OPTIONAL,
meter-demand-detector-status NTCIP.RmcDemandStatus OPTIONAL,
meter-passage-detector-status NTCIP.RmcPassageStatus OPTIONAL,
meter-queue-detector-status NTCIP.RmcQueueStatus OPTIONAL,
meter-cycle-count Meter-greens-per-cycle OPTIONAL,
metered-lane-vehicle-count Detector-vehicle-count OPTIONAL,
meter-queue-detected-flag Binary-flag OPTIONAL,
metered-lane-violation-count Detector-vehicle-count OPTIONAL,
... }"
}
```

3.3.17.7.2 XML REPRESENTATION

```
<xs:complexType name="RampMeterLaneStatusDetails">
  <xs:sequence>
    <xs:element name="metered-lane-status-header"
type="DeviceStatusHeader"/>
    <xs:element name="meter-implemented-action"
type="ntcip:RmcImplementAction"/>
    <xs:element name="requested-meter-command-source"
type="ntcip:RmcRequestCommandSource" minOccurs="0"/>
    <xs:element name="implemented-meter-command-source"
type="ntcip:RmcImplementCommandSource" minOccurs="0"/>
    <xs:element name="meter-implemented-plan"
type="ntcip:RmcImplementPlan" minOccurs="0"/>
    <xs:element name="meter-implemented-rate"
type="ntcip:RmcImplementRate" minOccurs="0"/>
    <xs:element name="meter-implemented-vehicles-per-green"
type="ntcip:RmcImplementVehiclesPerGrn" minOccurs="0"/>
    <xs:element name="meter-requested-action"
type="ntcip:RmcRequestAction" minOccurs="0"/>
    <xs:element name="meter-requested-plan" type="ntcip:RmcRequestPlan"
minOccurs="0"/>
    <xs:element name="meter-requested-rate" type="ntcip:RmcRequestRate"
minOccurs="0"/>
    <xs:element name="meter-requested-vehicles-per-green"
type="ntcip:RmcRequestVehiclesPerGrn" minOccurs="0"/>
    <xs:element name="operational-min-meter-rate"
type="ntcip:RmcOperMinMeterRateStatus" minOccurs="0"/>
    <xs:element name="operational-max-meter-rate"
type="ntcip:RmcOperMaxMeterRateStatus" minOccurs="0"/>
    <xs:element name="meter-demand-detector-status"
type="ntcip:RmcDemandStatus" minOccurs="0"/>
    <xs:element name="meter-passage-detector-status"
type="ntcip:RmcPassageStatus" minOccurs="0"/>
    <xs:element name="meter-queue-detector-status"
type="ntcip:RmcQueueStatus" minOccurs="0"/>
    <xs:element name="meter-cycle-count" type="Meter-greens-per-cycle"
minOccurs="0"/>
    <xs:element name="metered-lane-vehicle-count" type="Detector-vehicle-
count" minOccurs="0"/>
    <xs:element name="meter-queue-detected-flag" type="Binary-flag"
minOccurs="0"/>
    <xs:element name="metered-lane-violation-count" type="Detector-
vehicle-count" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.17.8 rampMeterPlanInventory

3.3.17.8.1 ASN.1 REPRESENTATION

```

rampMeterPlanInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RampMeterPlanInventory:frame"
  ASN-NAME "RampMeterPlanInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 168 }
  DEFINITION "The information content describing an entry in an owner center's
  ramp meter timing plan inventory."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { rmcMeteringPlanEntry 2 }, -- NTCIP.RmcMeteringLevel
    { rmcMeteringPlanEntry 3 }, -- NTCIP.RmcMeteringRate
    { rmcMeteringPlanEntry 4 }, -- NTCIP.RmcFlowRateThreshold
    { rmcMeteringPlanEntry 5 }, -- NTCIP.RmcOccupancyThreshold
    { rmcMeteringPlanEntry 6 } -- NTCIP.RmcSpeedThreshold }
  DATA-TYPE "RampMeterPlanInventory ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    device-id Organization-resource-identifier,
    meter-plan Organization-resource-identifier,
    meter-level NTCIP.RmcMeteringLevel,
    meter-rate NTCIP.RmcMeteringRate,
    flow-rate-threshhold NTCIP.RmcFlowRateThreshold,
    occupancy-threshhold NTCIP.RmcOccupancyThreshold,
    speed-threshhold NTCIP.RmcSpeedThreshold,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.17.8.2 XML REPRESENTATION

```

<xs:complexType name="RampMeterPlanInventory">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="device-id" type="Organization-resource-
identifier"/>
    <xs:element name="meter-plan" type="Organization-resource-
identifier"/>
    <xs:element name="meter-level" type="ntcip:RmcMeteringLevel"/>
    <xs:element name="meter-rate" type="ntcip:RmcMeteringRate"/>
    <xs:element name="flow-rate-threshhold"
type="ntcip:RmcFlowRateThreshold"/>
    <xs:element name="occupancy-threshhold"
type="ntcip:RmcOccupancyThreshold"/>
    <xs:element name="speed-threshhold" type="ntcip:RmcSpeedThreshold"/>
    <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.17.9 rampMeterPriorityQueue

3.3.17.9.1 ASN.1 REPRESENTATION

```

rampMeterPriorityQueue ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RampMeterPriorityQueue:frame"
  ASN-NAME "RampMeterPriorityQueue"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 169 }
  DEFINITION "The information content describing an owner center's ramp meter
  control priority queue for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 31 }, -- DevicePriorityQueueHeader
    { tmddDataFrames 161 } -- RampControlDetails
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 195 } -- Meter-operational-mode }
  DATA-TYPE "RampMeterPriorityQueue ::= SEQUENCE {
    device-priority-queue-header DevicePriorityQueueHeader,
    metered-lane-identifier Organization-resource-identifier OPTIONAL,
    meter-request-command Meter-operational-mode,
    meter-queue-parameters RampControlDetails OPTIONAL,
    ... }"
}

```

3.3.17.9.2 XML REPRESENTATION

```

<xs:complexType name="RampMeterPriorityQueue">
  <xs:sequence>
    <xs:element name="device-priority-queue-header"
type="DevicePriorityQueueHeader"/>
    <xs:element name="metered-lane-identifier" type="Organization-
resource-identifier" minOccurs="0"/>
    <xs:element name="meter-request-command" type="Meter-operational-
mode"/>
    <xs:element name="meter-queue-parameters" type="RampControlDetails"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.17.10 rampMeterStatus

3.3.17.10.1 ASN.1 REPRESENTATION

```

rampMeterStatus ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "RampMeterStatus:frame"
  ASN-NAME "RampMeterStatus"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 170 }
  DEFINITION "The information content describing an owner center's ramp meter
  status for a single device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 35 }, -- DeviceStatusHeader
    { tmddDataFrames 167 } -- RampMeterLaneStatusDetails
  }
  REFERENCED-DATA-ELEMENTS {
    { rmcML 5 }, -- NTCIP.RmcAverageFlowRate
    { rmcML 6 }, -- NTCIP.RmcAverageOccupancy
    { rmcML 7 } -- NTCIP.RmcAverageSpeed }
  DATA-TYPE "RampMeterStatus ::= SEQUENCE {
    device-status-header DeviceStatusHeader,

```

```
metered-status-list SEQUENCE (SIZE(0..24)) OF RampMeterLaneStatusDetails,
mainline-flow-rate NTCIP.RmcAverageFlowRate OPTIONAL,
mainline-vehicle-occupancy NTCIP.RmcAverageOccupancy OPTIONAL,
mainline-vehicle-speed NTCIP.RmcAverageSpeed OPTIONAL,
... }"
}
```

3.3.17.10.2 XML REPRESENTATION

```
<xs:complexType name="RampMeterStatus">
  <xs:sequence>
    <xs:element name="device-status-header" type="DeviceStatusHeader"/>
    <xs:element name="metered-status-list">
      <xs:complexType>
        <xs:sequence minOccurs="0" maxOccurs="24">
          <xs:element name="metered-lane"
type="RampMeterLaneStatusDetails"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="mainline-flow-rate" type="ntcip:RmcAverageFlowRate"
minOccurs="0"/>
    <xs:element name="mainline-vehicle-occupancy"
type="ntcip:RmcAverageOccupancy" minOccurs="0"/>
    <xs:element name="mainline-vehicle-speed"
type="ntcip:RmcAverageSpeed" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.18 Route Class Data Frames

3.3.18.1 routeInventory

3.3.18.1.1 ASN.1 REPRESENTATION

```
routeInventory ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "RouteInventory:frame"
ASN-NAME "RouteInventory"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 171 }
DEFINITION "The information content describing the static attributes for a list
of an owner center's traffic network routes."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 160 }, -- Restrictions
  { tmddDataFrames 158 }, -- OrganizationInformation
  { tmddDataFrames 172 } -- RouteInventoryList }
DATA-TYPE "RouteInventory ::= SEQUENCE {
  restrictions Restrictions OPTIONAL,
  organization-information OrganizationInformation,
  route-inventory-list SEQUENCE (SIZE(1..255)) OF RouteInventoryList,
  ... }"
}
```

3.3.18.1.2 XML REPRESENTATION

```
<xs:complexType name="RouteInventory">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
```



```

        <xs:element name="route-inventory-list">
            <xs:complexType>
                <xs:sequence maxOccurs="255">
                    <xs:element name="route"
type="RouteInventoryList"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.18.2 routeInventoryList

3.3.18.2.1 ASN.1 REPRESENTATION

```

routeInventoryList ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "RouteInventoryList:frame"
    ASN-NAME "RouteInventoryList"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 172 }
    DEFINITION "The information content describing the static attributes for a list
of routes."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 115 }, -- UriReference
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 201 }, -- Transportation-network-identifier
        { tmddDataElements 203 }, -- Transportation-network-name
        { tmddDataElements 198 }, -- Route-type
        { tmddDataElements 154 } -- Link-length
    }
    DATA-TYPE "RouteInventoryList ::= SEQUENCE {
        network-id Transportation-network-identifier,
        network-name Transportation-network-name OPTIONAL,
        route-id Transportation-network-identifier,
        route-link-id-list SEQUENCE (SIZE(1..255)) OF Transportation-network-identifier,
        route-type Route-type,
        route-name Transportation-network-name OPTIONAL,
        alternate-route-name-list SEQUENCE (SIZE(1..255)) OF Transportation-network-name
OPTIONAL,
        route-length Link-length OPTIONAL,
        route-node-id-list SEQUENCE (SIZE(1..255)) OF Transportation-network-identifier
OPTIONAL,
        route-url UriReference OPTIONAL,
        last-update-time DateTimeZone OPTIONAL,
        ... }"
}

```

3.3.18.2.2 XML REPRESENTATION

```

<xs:complexType name="RouteInventoryList">
    <xs:sequence>
        <xs:element name="network-id" type="Transportation-network-
identifier"/>
        <xs:element name="network-name" type="Transportation-network-name"
minOccurs="0"/>
        <xs:element name="route-id" type="Transportation-network-
identifier"/>
        <xs:element name="route-link-id-list">
            <xs:complexType>

```

```

        <xs:sequence maxOccurs="255">
            <xs:element name="link"
type="Transportation-network-identifier"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="route-type" type="Route-type"/>
<xs:element name="route-name" type="Transportation-network-name"
minOccurs="0"/>
    <xs:element name="alternate-route-name-list" minOccurs="0">
        <xs:complexType>
            <xs:sequence maxOccurs="255">
                <xs:element name="route-name"
type="Transportation-network-name"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="route-length" type="Link-length" minOccurs="0"/>
<xs:element name="route-node-id-list" minOccurs="0">
    <xs:complexType>
        <xs:sequence maxOccurs="255">
            <xs:element name="node-id"
type="Transportation-network-identifier"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="route-url" type="UrlReference" minOccurs="0"/>
<xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

3.3.18.3 routeStatus

3.3.18.3.1 ASN.1 REPRESENTATION

```

routeStatus ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "RouteStatus:frame"
    ASN-NAME "RouteStatus"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 173 }
    DEFINITION "The information content describing an owner center's traffic network
route status for a single route."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 174 } -- RouteStatusList
    }
    DATA-TYPE "RouteStatus ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        route-status-list SEQUENCE (SIZE(1..255)) OF RouteStatusList,
        ... }"
}

```

3.3.18.3.2 XML REPRESENTATION

```

<xs:complexType name="RouteStatus">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

```

        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="route-status-list">
            <xs:complexType>
                <xs:sequence maxOccurs="255">
                    <xs:element name="route"
type="RouteStatusList"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.18.4 routeStatusList

3.3.18.4.1 ASN.1 REPRESENTATION

```

routeStatusList ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "RouteStatusList:frame"
    ASN-NAME "RouteStatusList"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 174 }
    DEFINITION "The information content describing the dynamic attributes for a
single route."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 201 }, -- Transportation-network-identifier
        { tmddDataElements 175 }, -- Link-status
        { tmddDataElements 203 }, -- Transportation-network-name
        { tmddDataElements 118 }, -- Binary-flag
        { tmddDataElements 177 }, -- Link-surface-condition
        { tmddDataElements 145 }, -- Link-capacity-existing
        { tmddDataElements 155 }, -- Link-level-of-service
        { tmddDataElements 160 }, -- Link-oversaturated-flag
        { tmddDataElements 146 }, -- Link-data-stored
        { tmddDataElements 147 }, -- Link-data-type
        { tmddDataElements 148 }, -- Link-delay
        { tmddDataElements 143 }, -- Link-alternate-route-delay
        { tmddDataElements 151 }, -- Link-headway
        { tmddDataElements 178 }, -- Link-travel-time
        { tmddDataElements 179 }, -- Link-travel-time-increase
        { tmddDataElements 181 }, -- Link-volume
        { tmddDataElements 172 }, -- Link-speed-average
        { tmddDataElements 149 }, -- Link-density
        { tmddDataElements 159 }, -- Link-occupancy
        { tmddDataElements 173 }, -- Link-speed-limit
        { tmddDataElements 174 }, -- Link-speed-limit-units
        { tmddDataElements 81 } -- Event-description-time }
    DATA-TYPE "RouteStatusList ::= SEQUENCE {
        network-id Transportation-network-identifier,
        route-id Transportation-network-identifier,
        route-status Link-status,
        route-name Transportation-network-name OPTIONAL,
        detour-route-in-effect-flag Binary-flag OPTIONAL,
        surface-condition Link-surface-condition OPTIONAL,
        route-capacity Link-capacity-existing OPTIONAL,
        level-of-service Link-level-of-service OPTIONAL,
        saturation-flag Link-oversaturated-flag OPTIONAL,
        route-data-stored-type Link-data-stored OPTIONAL,
        route-traffic-data-algorithm Link-data-type OPTIONAL,

```

```

    delay Link-delay OPTIONAL,
    alternate-route-delay Link-alternate-route-delay OPTIONAL,
    headway Link-headway OPTIONAL,
    travel-time Link-travel-time OPTIONAL,
    travel-time-increase Link-travel-time-increase OPTIONAL,
    volume Link-volume OPTIONAL,
    speed-average Link-speed-average OPTIONAL,
    density Link-density OPTIONAL,
    occupancy Link-occupancy OPTIONAL,
    current-speed-advisory Link-speed-limit OPTIONAL,
    speed-limit-units Link-speed-limit-units OPTIONAL,
    event-description-time Event-description-time OPTIONAL,
    last-update-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.18.4.2 XML REPRESENTATION

```

<xs:complexType name="RouteStatusList">
  <xs:sequence>
    <xs:element name="network-id" type="Transportation-network-
  identifier"/>
    <xs:element name="route-id" type="Transportation-network-
  identifier"/>
    <xs:element name="route-status" type="Link-status"/>
    <xs:element name="route-name" type="Transportation-network-name"
  minOccurs="0"/>
    <xs:element name="detour-route-in-effect-flag" type="Binary-flag"
  minOccurs="0"/>
    <xs:element name="surface-condition" type="Link-surface-condition"
  minOccurs="0"/>
    <xs:element name="route-capacity" type="Link-capacity-existing"
  minOccurs="0"/>
    <xs:element name="level-of-service" type="Link-level-of-service"
  minOccurs="0"/>
    <xs:element name="saturation-flag" type="Link-oversaturated-flag"
  minOccurs="0"/>
    <!-- RouteData -->
    <xs:element name="route-data-stored-type" type="Link-data-stored"
  minOccurs="0"/>
    <xs:element name="route-traffic-data-algorithm" type="Link-data-type"
  minOccurs="0"/>
    <xs:element name="delay" type="Link-delay" minOccurs="0"/>
    <xs:element name="alternate-route-delay" type="Link-alternate-route-
  delay" minOccurs="0"/>
    <xs:element name="headway" type="Link-headway" minOccurs="0"/>
    <xs:element name="travel-time" type="Link-travel-time"
  minOccurs="0"/>
    <xs:element name="travel-time-increase" type="Link-travel-time-
  increase" minOccurs="0"/>
    <xs:element name="volume" type="Link-volume" minOccurs="0"/>
    <xs:element name="speed-average" type="Link-speed-average"
  minOccurs="0"/>
    <xs:element name="density" type="Link-density" minOccurs="0"/>
    <xs:element name="occupancy" type="Link-occupancy" minOccurs="0"/>
    <xs:element name="current-speed-advisory" type="Link-speed-limit"
  minOccurs="0"/>
    <xs:element name="speed-limit-units" type="Link-speed-limit-units"
  minOccurs="0"/>
    <xs:element name="event-description-time" type="Event-description-
  time" minOccurs="0"/>
    <xs:element name="last-update-time" type="DateTimeZone"
  minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  
```

```

    </xs:sequence>
</xs:complexType>

```

3.3.19 Section Class Data Frames

3.3.19.1 sectionControlDetails

3.3.19.1.1 ASN.1 REPRESENTATION

```

sectionControlDetails ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SectionControlDetails:frame"
  ASN-NAME "SectionControlDetails"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 175 }
  DEFINITION          "The control parameter associated with the command in an section
  control request. At least one of the optional data elements must be selected
  (transmitted).".
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 131 }, -- Intersection-signal-control-mode
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { patternEntry 3 } -- NTCIP.PatternOffsetTime }
  DATA-TYPE "SectionControlDetails ::= SEQUENCE {
    request-control-mode Intersection-signal-control-mode OPTIONAL,
    timing-pattern-id Organization-resource-identifier OPTIONAL,
    section-offset-adjustment NTCIP.PatternOffsetTime OPTIONAL,
    ... }"
}

```

3.3.19.1.2 XML REPRESENTATION

```

<xs:complexType name="SectionControlDetails">
  <xs:sequence>
    <xs:element name="request-control-mode" type="Intersection-signal-
control-mode" minOccurs="0"/>
    <xs:element name="timing-pattern-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="section-offset-adjustment"
type="ntcip:PatternOffsetTime" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

3.3.19.2 sectionControlRequest

3.3.19.2.1 ASN.1 REPRESENTATION

```

sectionControlRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SectionControlRequest:frame"
  ASN-NAME "SectionControlRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 176 }
  DEFINITION          "The information content necessary to request a control action of an
  owner center's section."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 9 }, -- Authentication
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 175 }, -- SectionControlDetails
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {

```

```

{ tmddDataElements 192 }, -- Organization-resource-identifier
{ tmddDataElements 200 }, -- Section-request-command
{ tmddDataElements 20 } -- Device-command-request-priority }
DATA-TYPE "SectionControlRequest ::= SEQUENCE {
    authentication Authentication,
    organization-requesting OrganizationInformation,
    section-id Organization-resource-identifier,
    request-id Organization-resource-identifier,
    section-request-command Section-request-command,
    section-command-parameters SectionControlDetails,
    event-id Organization-resource-identifier OPTIONAL,
    response-plan-id Organization-resource-identifier OPTIONAL,
    command-request-priority Device-command-request-priority OPTIONAL,
    command-begin-time DateTimeZone OPTIONAL,
    command-end-time DateTimeZone OPTIONAL,
    command-request-time DateTimeZone OPTIONAL,
    ... }"
}

```

3.3.19.2.2 XML REPRESENTATION

```

<xs:complexType name="SectionControlRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:element name="section-id" type="Organization-resource-
identifier"/>
        <xs:element name="request-id" type="Organization-resource-
identifier"/>
        <xs:element name="section-request-command" type="Section-request-
command"/>
        <xs:element name="section-command-parameters"
type="SectionControlDetails"/>
        <xs:element name="event-id" type="Organization-resource-identifier"
minOccurs="0"/>
        <xs:element name="response-plan-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="command-request-priority" type="Device-command-
request-priority" minOccurs="0"/>
        <xs:element name="command-begin-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:element name="command-end-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:element name="command-request-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.19.3 sectionControlResponse

3.3.19.3.1 ASN.1 REPRESENTATION

```

sectionControlResponse ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "SectionControlResponse:frame"
    ASN-NAME "SectionControlResponse"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 177 }
    DEFINITION "The information content describing an owner center's response to a
section control request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
}

```

```

REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 114 } -- DateTimeZone
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 18 }, -- Device-acknowledge-control
    { tmddDataElements 130 } -- Intersection-planned-signal-timing-mode }
DATA-TYPE "SectionControlResponse ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
    section-id Organization-resource-identifier,
    request-id Organization-resource-identifier,
    operator-id Organization-resource-identifier OPTIONAL,
    request-status Device-acknowledge-control,
    operator-last-revised DateTimeZone OPTIONAL,
    request-control-mode Intersection-planned-signal-timing-mode OPTIONAL,
    timing-pattern-id Organization-resource-identifier OPTIONAL,
    ... }"
}

```

3.3.19.3.2 XML REPRESENTATION

```

<xs:complexType name="SectionControlResponse">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="section-id" type="Organization-resource-
identifier"/>
        <xs:element name="request-id" type="Organization-resource-
identifier"/>
        <xs:element name="operator-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:element name="request-status" type="Device-acknowledge-control"/>
        <xs:element name="operator-last-revised" type="DateTimeZone"
minOccurs="0"/>
        <xs:element name="request-control-mode" type="Intersection-planned-
signal-timing-mode" minOccurs="0"/>
        <xs:element name="timing-pattern-id" type="Organization-resource-
identifier" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.19.4 sectionControlSchedule

3.3.19.4.1 ASN.1 REPRESENTATION

```

sectionControlSchedule ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "SectionControlSchedule:frame"
    ASN-NAME "SectionControlSchedule"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 178 }
    DEFINITION "The information content describing an owner center's traffic signal
section control schedule for a single section."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 } -- DateTimeZone
    }
}

```

```

}
REFERENCED-DATA-ELEMENTS {
  { tmddDataElements 192 }, -- Organization-resource-identifier
  { timeBaseScheduleEntry 1 }, -- NTCIP.TimeBaseScheduleNumber
  { timeBaseScheduleEntry 2 }, -- NTCIP.TimeBaseScheduleMonth
  { timeBaseScheduleEntry 3 }, -- NTCIP.TimeBaseScheduleDay
  { timeBaseScheduleEntry 4 }, -- NTCIP.TimeBaseScheduleDate
  { timeBaseScheduleEntry 5 }, -- NTCIP.TimeBaseScheduleDayPlan
  { timeBaseDayPlanEntry 3 }, -- NTCIP.DayPlanHour
  { timeBaseDayPlanEntry 4 }, -- NTCIP.DayPlanMinute
  { tmddDataElements 131 } -- Intersection-signal-control-mode }
DATA-TYPE "SectionControlSchedule ::= SEQUENCE {
  restrictions Restrictions OPTIONAL,
  organization-information OrganizationInformation,
  section-id Organization-resource-identifier,
  time-base-schedule-number NTCIP.TimeBaseScheduleNumber,
  time-base-schedule-month NTCIP.TimeBaseScheduleMonth,
  time-base-schedule-day NTCIP.TimeBaseScheduleDay,
  time-base-schedule-date NTCIP.TimeBaseScheduleDate,
  time-base-schedule-day-plan NTCIP.TimeBaseScheduleDayPlan,
  day-plan-hour NTCIP.DayPlanHour,
  day-plan-minute NTCIP.DayPlanMinute,
  last-update-time DateTimeZone,
  node-id-list SEQUENCE (SIZE(1..255)) OF Organization-resource-identifier,
  request-control-mode Intersection-signal-control-mode,
  timing-pattern-id Organization-resource-identifier,
  ... }"
}

```

3.3.19.4.2 XML REPRESENTATION

```

<xs:complexType name="SectionControlSchedule">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="section-id" type="Organization-resource-
identifier"/>
    <xs:element name="time-base-schedule-number"
type="ntcip:TimeBaseScheduleNumber"/>
    <xs:element name="time-base-schedule-month"
type="ntcip:TimeBaseScheduleMonth"/>
    <xs:element name="time-base-schedule-day"
type="ntcip:TimeBaseScheduleDay"/>
    <xs:element name="time-base-schedule-date"
type="ntcip:TimeBaseScheduleDate"/>
    <xs:element name="time-base-schedule-day-plan"
type="ntcip:TimeBaseScheduleDayPlan"/>
    <xs:element name="day-plan-hour" type="ntcip:DayPlanHour"/>
    <xs:element name="day-plan-minute" type="ntcip:DayPlanMinute"/>
    <xs:element name="last-update-time" type="DateTimeZone"/>
    <xs:element name="node-id-list">
      <xs:complexType>
        <xs:sequence maxOccurs="255">
          <xs:element name="device-id"
type="Organization-resource-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="request-control-mode" type="Intersection-signal-
control-mode"/>
    <xs:element name="timing-pattern-id" type="Organization-resource-
identifier"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```



```
</xs:sequence>
</xs:complexType>
```

3.3.19.5 sectionControlStatusRequest

3.3.19.5.1 ASN.1 REPRESENTATION

```
sectionControlStatusRequest ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SectionControlStatusRequest:frame"
  ASN-NAME "SectionControlStatusRequest"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 179 }
  DEFINITION "The information content describing an owner center's traffic signal
  section control status for a single section."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 9 }, -- Authentication
    { tmddDataFrames 158 } -- OrganizationInformation
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 } -- Organization-resource-identifier }
  DATA-TYPE "SectionControlStatusRequest ::= SEQUENCE {
    authentication Authentication OPTIONAL,
    organization-requesting OrganizationInformation,
    section-id Organization-resource-identifier,
    request-id Organization-resource-identifier,
    ... }"
}
```

3.3.19.5.2 XML REPRESENTATION

```
<xs:complexType name="SectionControlStatusRequest">
  <xs:sequence>
    <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
    <xs:element name="organization-requesting"
type="OrganizationInformation"/>
    <xs:element name="section-id" type="Organization-resource-
identifier"/>
    <xs:element name="request-id" type="Organization-resource-
identifier"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.19.6 sectionPriorityQueue

3.3.19.6.1 ASN.1 REPRESENTATION

```
sectionPriorityQueue ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SectionPriorityQueue:frame"
  ASN-NAME "SectionPriorityQueue"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 180 }
  DEFINITION "The information content describing an owner center's section control
  priority queue for a single section."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 31 }, -- DevicePriorityQueueHeader
    { tmddDataFrames 175 } -- SectionControlDetails
  }
}
```

```

REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 200 } -- Section-request-command }
DATA-TYPE "SectionPriorityQueue ::= SEQUENCE {
    device-priority-queue-header DevicePriorityQueueHeader,
    section-request-command Section-request-command,
    section-queue-parameters SectionControlDetails,
    ... }"
}

```

3.3.19.6.2 XML REPRESENTATION

```

<xs:complexType name="SectionPriorityQueue">
    <xs:sequence>
        <xs:element name="device-priority-queue-header"
type="DevicePriorityQueueHeader"/>
        <xs:element name="section-request-command" type="Section-request-
command"/>
        <xs:element name="section-queue-parameters"
type="SectionControlDetails"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.19.7 sectionStatus

3.3.19.7.1 ASN.1 REPRESENTATION

```

sectionStatus ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "SectionStatus:frame"
    ASN-NAME "SectionStatus"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 181 }
    DEFINITION "The information content describing an owner center's section status
for a single section."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 160 }, -- Restrictions
        { tmddDataFrames 158 }, -- OrganizationInformation
        { tmddDataFrames 114 } -- DateTimeZone
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 199 }, -- Section-signal-control-mode
        { patternEntry 2 } -- NTCIP.PatternCycleTime }
    DATA-TYPE "SectionStatus ::= SEQUENCE {
        restrictions Restrictions OPTIONAL,
        organization-information OrganizationInformation,
        section-id Organization-resource-identifier,
        section-name Organization-resource-name OPTIONAL,
        node-id-list SEQUENCE (SIZE(1..255)) OF Organization-resource-identifier,
        section-control-mode Section-signal-control-mode,
        timing-pattern-id Organization-resource-identifier,
        timing-pattern-name Organization-resource-name OPTIONAL,
        cycle-time NTCIP.PatternCycleTime OPTIONAL,
        operator-id Organization-resource-identifier OPTIONAL,
        event-id Organization-resource-identifier OPTIONAL,
        response-plan-id Organization-resource-identifier OPTIONAL,
        last-comm-time DateTimeZone OPTIONAL,
        ... }"
}

```

3.3.19.7.2 XML REPRESENTATION

```
<xs:complexType name="SectionStatus">
  <xs:sequence>
    <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
    <xs:element name="organization-information"
type="OrganizationInformation"/>
    <xs:element name="section-id" type="Organization-resource-
identifier"/>
    <xs:element name="section-name" type="Organization-resource-name"
minOccurs="0"/>
    <xs:element name="node-id-list">
      <xs:complexType>
        <xs:sequence maxOccurs="255">
          <xs:element name="device-id"
type="Organization-resource-identifier"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="section-control-mode" type="Section-signal-control-
mode"/>
    <xs:element name="timing-pattern-id" type="Organization-resource-
identifier"/>
    <xs:element name="timing-pattern-name" type="Organization-resource-
name" minOccurs="0"/>
    <xs:element name="cycle-time" type="ntcip:PatternCycleTime"
minOccurs="0"/>
    <xs:element name="operator-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="event-id" type="Organization-resource-identifier"
minOccurs="0"/>
    <xs:element name="response-plan-id" type="Organization-resource-
identifier" minOccurs="0"/>
    <xs:element name="last-comm-time" type="DateTimeZone" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.19.8 sectionTimingPatternInventory

3.3.19.8.1 ASN.1 REPRESENTATION

```
sectionTimingPatternInventory ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SectionTimingPatternInventory:frame"
  ASN-NAME "SectionTimingPatternInventory"
  ASN-OBJECT-IDENTIFIER { tmddDataFrames 190 }
  DEFINITION "The information content describing an entry in an owner center's
signal section timing pattern inventory."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "TMDD"
  REFERENCED-DATA-FRAMES {
    { tmddDataFrames 160 }, -- Restrictions
    { tmddDataFrames 158 }, -- OrganizationInformation
    { tmddDataFrames 192 }, -- SectionSignalTimingPatternInventory
    { tmddDataFrames 114 } -- DateTimeZone
  }
  REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 192 }, -- Organization-resource-identifier
    { tmddDataElements 193 }, -- Organization-resource-name
    { patternEntry 2 } -- NTCIP.PatternCycleTime }
  DATA-TYPE "SectionTimingPatternInventory ::= SEQUENCE {
    restrictions Restrictions OPTIONAL,
    organization-information OrganizationInformation,
```

```

        section-id Organization-resource-identifier,
        section-timing-pattern-id Organization-resource-identifier,
        section-timing-pattern-name Organization-resource-name OPTIONAL,
        section-cycle-length NTCIP.PatternCycleTime,
        intersection-tp-list SEQUENCE (SIZE(0..128)) OF
SectionSignalTimingPatternInventory,
        last-update-time DateTimeZone OPTIONAL,
        ... }"
    }

```

3.3.19.8.2 XML REPRESENTATION

```

<xs:complexType name="SectionTimingPatternInventory">
    <xs:sequence>
        <xs:element name="restrictions" type="Restrictions" minOccurs="0"/>
        <xs:element name="organization-information"
type="OrganizationInformation"/>
        <xs:element name="section-id" type="Organization-resource-
identifier"/>
        <xs:element name="section-timing-pattern-id" type="Organization-
resource-identifier"/>
        <xs:element name="section-timing-pattern-name" type="Organization-
resource-name" minOccurs="0"/>
        <xs:element name="section-cycle-length"
type="ntcip:PatternCycleTime"/>
        <xs:element name="intersection-tp-list">
            <xs:complexType>
                <xs:sequence minOccurs="0" maxOccurs="128">
                    <xs:element name="intersection-timing"
type="SectionSignalTimingPatternInventory"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="last-update-time" type="DateTimeZone"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.19.9 sectionSignalTimingPatternInventoryRequest

3.3.19.9.1 ASN.1 REPRESENTATION

```

sectionSignalTimingPatternInventoryRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "SectionSignalTimingPatternInventoryRequest:frame"
    ASN-NAME "SectionSignalTimingPatternInventoryRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 191 }
    DEFINITION "The information content necessary to request an owner center's
signal section timing pattern inventory. All signal timing patterns are being
requested if the optional section-timing-pattern-id is not sent as part of the
request."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 28 } -- DeviceInformationRequest
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 } -- Organization-resource-identifier }
    DATA-TYPE "SectionSignalTimingPatternInventoryRequest ::= SEQUENCE {
        device-information-request-header DeviceInformationRequest,
        section-timing-pattern-id Organization-resource-identifier OPTIONAL,
        ... }"

```

}

3.3.19.9.2 XML REPRESENTATION

```
<xs:complexType name="SectionSignalTimingPatternInventoryRequest">
  <xs:sequence>
    <xs:element name="device-information-request-header"
type="DeviceInformationRequest"/>
    <xs:element name="section-timing-pattern-id" type="Organization-
resource-identifier" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

3.3.19.10 sectionSignalTimingPatternInventory

3.3.19.10.1 ASN.1 REPRESENTATION

```
sectionSignalTimingPatternInventory ITS-DATA-FRAME ::= {
DESCRIPTIVE-NAME "SectionSignalTimingPatternInventory:frame"
ASN-NAME "SectionSignalTimingPatternInventory"
ASN-OBJECT-IDENTIFIER { tmddDataFrames 192 }
DEFINITION "The information content for a specific traffic signal in an owner
center's signal section timing pattern inventory."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-frame
STANDARD "TMDD"
REFERENCED-DATA-FRAMES {
  { tmddDataFrames 129 }, -- IntersectionSignalTPInventoryPhase
  { tmddDataFrames 138 } -- IntersectionSignalSequenceData
}
REFERENCED-DATA-ELEMENTS {
  { tmddDataElements 192 }, -- Organization-resource-identifier
  { patternEntry 2 }, -- NTCIP.PatternCycleTime
  { patternEntry 3 } -- NTCIP.PatternOffsetTime }
DATA-TYPE "SectionSignalTimingPatternInventory ::= SEQUENCE {
  intersection-id Organization-resource-identifier,
  cycle-length NTCIP.PatternCycleTime,
  offset-time NTCIP.PatternOffsetTime,
  phase-tp-list SEQUENCE (SIZE(1..40)) OF IntersectionSignalTPInventoryPhase,
  sequence-information SEQUENCE (SIZE(1..8)) OF IntersectionSignalSequenceData
OPTIONAL,
  ... }"
```

3.3.19.10.2 XML REPRESENTATION

```
<xs:complexType name="SectionSignalTimingPatternInventory">
  <xs:sequence>
    <xs:element name="intersection-id" type="Organization-resource-
identifier"/>
    <xs:element name="cycle-length" type="ntcip:PatternCycleTime"/>
    <xs:element name="offset-time" type="ntcip:PatternOffsetTime"/>
    <xs:element name="phase-tp-list">
      <xs:complexType>
        <xs:sequence maxOccurs="40">
          <xs:element name="phases"
type="IntersectionSignalTPInventoryPhase"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="sequence-information" minOccurs="0">
```

```

        <xs:complexType>
            <xs:sequence maxOccurs="8">
                <xs:element name="sequence-information"
type="IntersectionSignalSequenceData"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
</xs:sequence>
</xs:complexType>

```

3.3.20 TransportationNetwork Class Data Frames

3.3.20.1 trafficNetworkInformationRequest

3.3.20.1.1 ASN.1 REPRESENTATION

```

trafficNetworkInformationRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "TrafficNetworkInformationRequest:frame"
    ASN-NAME "TrafficNetworkInformationRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 182 }
    DEFINITION "The information content necessary to request a inventory or status
of traffic network nodes, links, or routes."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 9 }, -- Authentication
        { tmddDataFrames 158 } -- OrganizationInformation
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 202 }, -- Transportation-network-information-type
        { tmddDataElements 201 } -- Transportation-network-identifier }
    DATA-TYPE "TrafficNetworkInformationRequest ::= SEQUENCE {
        authentication Authentication OPTIONAL,
        organization-requesting OrganizationInformation,
        network-information-type Transportation-network-information-type,
        network-identifiers SEQUENCE (SIZE(1..32)) OF Transportation-network-identifier
    OPTIONAL,
        roadway-network-id-list SEQUENCE (SIZE(1..1024)) OF Transportation-network-
    identifier OPTIONAL,
        ... }"
}

```

3.3.20.1.2 XML REPRESENTATION

```

<xs:complexType name="TrafficNetworkInformationRequest">
    <xs:sequence>
        <xs:element name="authentication" type="Authentication"
minOccurs="0"/>
        <xs:element name="organization-requesting"
type="OrganizationInformation"/>
        <xs:element name="network-information-type" type="Transportation-
network-information-type"/>
        <xs:element name="network-identifiers" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="32">
                    <xs:element name="network-identifier"
type="Transportation-network-identifier"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="roadway-network-id-list" minOccurs="0">
            <xs:complexType>
                <xs:sequence maxOccurs="1024">

```

```

                                <xs:element name="roadway-network-id"
type="Transportation-network-identifier"/>
                                </xs:sequence>
                                </xs:complexType>
                                </xs:element>
                                <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
                                </xs:sequence>
</xs:complexType>

```

3.3.21 VideoSwitch Class Data Frames

3.3.21.1 videoSwitchControlRequest

3.3.21.1.1 ASN.1 REPRESENTATION

```

videoSwitchControlRequest ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "VideoSwitchControlRequest:frame"
    ASN-NAME "VideoSwitchControlRequest"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 183 }
    DEFINITION "The information content necessary to request a control action of an
owner center's video switch."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 24 } -- DeviceControlRequestHeader
    }
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 7 }, -- Cctv-titling-text
        { tmddDataElements 118 }, -- Binary-flag
        { tmddDataElements 205 }, -- VS-frames-per-second
        { tmddDataElements 206 }, -- VS-pixel-count
        { tmddDataElements 5 } -- Cctv-image-supported }
    DATA-TYPE "VideoSwitchControlRequest ::= SEQUENCE {
        device-control-request-header DeviceControlRequestHeader,
        input-channel-id Organization-resource-identifier,
        output-channel-id Organization-resource-identifier,
        channel-titling-text Cctv-titling-text OPTIONAL,
        set-output-channel-lock Binary-flag OPTIONAL,
        frames-per-second VS-frames-per-second OPTIONAL,
        frame-height-pixels VS-pixel-count OPTIONAL,
        frame-width-pixels VS-pixel-count OPTIONAL,
        video-format Cctv-image-supported OPTIONAL,
        ... }"
}

```

3.3.21.1.2 XML REPRESENTATION

```

<xs:complexType name="VideoSwitchControlRequest">
    <xs:sequence>
        <xs:element name="device-control-request-header"
type="DeviceControlRequestHeader"/>
        <xs:element name="input-channel-id" type="Organization-resource-
identifier"/>
        <xs:element name="output-channel-id" type="Organization-resource-
identifier"/>
        <xs:element name="channel-titling-text" type="Cctv-titling-text"
minOccurs="0"/>
        <xs:element name="set-output-channel-lock" type="Binary-flag"
minOccurs="0"/>
        <xs:element name="frames-per-second" type="VS-frames-per-second"
minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

```

        <xs:element name="frame-height-pixels" type="VS-pixel-count"
minOccurs="0"/>
        <xs:element name="frame-width-pixels" type="VS-pixel-count"
minOccurs="0"/>
        <xs:element name="video-format" type="Cctv-image-supported"
minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.21.2 videoSwitchDeviceStatus

3.3.21.2.1 ASN.1 REPRESENTATION

```

videoSwitchDeviceStatus ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "VideoSwitchDeviceStatus:frame"
    ASN-NAME "VideoSwitchDeviceStatus"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 184 }
    DEFINITION "The information content describing an owner center's video switch
status for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {
        { tmddDataFrames 35 }, -- DeviceStatusHeader
        { tmddDataFrames 186 } -- VSSwitchedChannelData }
    DATA-TYPE "VideoSwitchDeviceStatus ::= SEQUENCE {
        device-status-header DeviceStatusHeader,
        switched-channel-list SEQUENCE (SIZE(1..1024)) OF VSSwitchedChannelData,
        ... }"
}

```

3.3.21.2.2 XML REPRESENTATION

```

<xs:complexType name="VideoSwitchDeviceStatus">
    <xs:sequence>
        <xs:element name="device-status-header" type="DeviceStatusHeader"/>
        <xs:element name="switched-channel-list">
            <xs:complexType>
                <xs:sequence maxOccurs="1024">
                    <xs:element name="switched-channel"
type="VSSwitchedChannelData"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.21.3 videoSwitchInventory

3.3.21.3.1 ASN.1 REPRESENTATION

```

videoSwitchInventory ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "VideoSwitchInventory:frame"
    ASN-NAME "VideoSwitchInventory"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 185 }
    DEFINITION "The information content describing an entry in the owner center's
video switch inventory for a single device."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-FRAMES {

```



```

    { tmddDataFrames 30 }, -- DeviceInventoryHeader
    { tmddDataFrames 187 } -- VSVideoChannelData
}
REFERENCED-DATA-ELEMENTS {
    { tmddDataElements 204 }, -- VS-channel-count
    { tmddDataElements 207 } -- VS-request-supported-type }
DATA-TYPE "VideoSwitchInventory" ::= SEQUENCE {
    device-inventory-header DeviceInventoryHeader,
    input-channel-list SEQUENCE (SIZE(1..2048)) OF VSVideoChannelData,
    output-channel-list SEQUENCE (SIZE(1..2048)) OF VSVideoChannelData,
    input-channel-count VS-channel-count OPTIONAL,
    output-channel-count VS-channel-count OPTIONAL,
    request-supported-type VS-request-supported-type OPTIONAL,
    ... }"
}

```

3.3.21.3.2 XML REPRESENTATION

```

<xs:complexType name="VideoSwitchInventory">
    <xs:sequence>
        <xs:element name="device-inventory-header"
type="DeviceInventoryHeader"/>
        <xs:element name="input-channel-list">
            <xs:complexType>
                <xs:sequence maxOccurs="2048">
                    <xs:element name="input-channel"
type="VSVideoChannelData"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="output-channel-list">
            <xs:complexType>
                <xs:sequence maxOccurs="2048">
                    <xs:element name="output-channel"
type="VSVideoChannelData"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="input-channel-count" type="VS-channel-count"
minOccurs="0"/>
        <xs:element name="output-channel-count" type="VS-channel-count"
minOccurs="0"/>
        <xs:element name="request-supported-type" type="VS-request-supported-
type" minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.21.4 vSSwitchedChannelData

3.3.21.4.1 ASN.1 REPRESENTATION

```

vSSwitchedChannelData ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "VSSwitchedChannelData:frame"
    ASN-NAME "VSSwitchedChannelData"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 186 }
    DEFINITION "The information content describing a set of input-output channel
assignments."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
    }
}

```

```

{ tmddDataElements 7 } -- Cctv-titling-text }
DATA-TYPE "VSSwitchedChannelData ::= SEQUENCE {
    input-channel-id Organization-resource-identifier,
    output-channel-id Organization-resource-identifier,
    channel-titling-text Cctv-titling-text OPTIONAL,
    ... }"
}

```

3.3.21.4.2 XML REPRESENTATION

```

<xs:complexType name="VSSwitchedChannelData">
    <xs:sequence>
        <xs:element name="input-channel-id" type="Organization-resource-
            identifier"/>
        <xs:element name="output-channel-id" type="Organization-resource-
            identifier"/>
        <xs:element name="channel-titling-text" type="Cctv-titling-text"
            minOccurs="0"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.3.21.5 vSVideoChannelData

3.3.21.5.1 ASN.1 REPRESENTATION

```

vSVideoChannelData ITS-DATA-FRAME ::= {
    DESCRIPTIVE-NAME "VSVideoChannelData:frame"
    ASN-NAME "VSVideoChannelData"
    ASN-OBJECT-IDENTIFIER { tmddDataFrames 187 }
    DEFINITION "The information content describing a single channel of video."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-frame
    STANDARD "TMDD"
    REFERENCED-DATA-ELEMENTS {
        { tmddDataElements 192 }, -- Organization-resource-identifier
        { tmddDataElements 193 }, -- Organization-resource-name
        { tmddDataElements 7 } -- Cctv-titling-text }
    DATA-TYPE "VSVideoChannelData ::= SEQUENCE {
        channel-id Organization-resource-identifier,
        channel-name Organization-resource-name,
        channel-titling-text Cctv-titling-text,
        ... }"
}

```

3.3.21.5.2 XML REPRESENTATION

```

<xs:complexType name="VSVideoChannelData">
    <xs:sequence>
        <xs:element name="channel-id" type="Organization-resource-
            identifier"/>
        <xs:element name="channel-name" type="Organization-resource-name"/>
        <xs:element name="channel-titling-text" type="Cctv-titling-text"/>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

```

3.4 Data Elements

3.4.1 ArchivedData Class Data Elements

3.4.1.1 archived-data-set-maintenance-frequency

3.4.1.1.1 ASN.1 REPRESENTATION

```

archived-data-set-maintenance-frequency ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ArchivedData.Archived-data-set-maintenance-frequency:cd"
    ASN-NAME "Archived-data-set-maintenance-frequency"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 2 }
    DEFINITION "A code representing the frequency of maintenance of an archived data
    set."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Archived-data-set-maintenance-frequency ::= ENUMERATED {
        unknown (1),
        continually (2),
        daily (3),
        weekly (4),
        monthly (5),
        annually (6),
        as-needed (7),
        irregular (8),
        none-planned (9),
        free-text (10) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.1.1.2 XML REPRESENTATION

```

<xs:simpleType name="Archived-data-set-maintenance-frequency">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:int">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="10"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="unknown"/>
                <xs:enumeration value="continually"/>
                <xs:enumeration value="daily"/>
                <xs:enumeration value="weekly"/>
                <xs:enumeration value="monthly"/>
                <xs:enumeration value="annually"/>
                <xs:enumeration value="as needed"/>
                <xs:enumeration value="irregular"/>
                <xs:enumeration value="none planned"/>
                <xs:enumeration value="free text"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.1.2 archived-data-set-progress-status

3.4.1.2.1 ASN.1 REPRESENTATION

```

archived-data-set-progress-status ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ArchivedData.Archived-data-set-progress-status:cd"
    ASN-NAME "Archived-data-set-progress-status"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 1 }
    DEFINITION "A code representing the development status of an archived data set."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

```

```
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Archived-data-set-progress-status ::= ENUMERATED {
    complete (1),
    work-in-process (2),
    planned (3) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.1.2.2 XML REPRESENTATION

```
<xs:simpleType name="Archived-data-set-progress-status">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:int">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="complete"/>
        <xs:enumeration value="work in process"/>
        <xs:enumeration value="planned"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.1.3 archived-data-set-type

3.4.1.3.1 ASN.1 REPRESENTATION

```
archived-data-set-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ArchivedData.Archived-data-set-type:cd"
  ASN-NAME "Archived-data-set-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 3 }
  DEFINITION "A code representing types of data that are archived."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Archived-data-set-type ::= ENUMERATED {
    traffic-monitoring-data (1),
    other (2) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.1.3.2 XML REPRESENTATION

```
<xs:simpleType name="Archived-data-set-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:int">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="2"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="traffic monitoring data"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

                                <xs:enumeration value="other"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:union>
</xs:simpleType>

```

3.4.2 CCTV Class Data Elements

3.4.2.1 cctv-camera-type

3.4.2.1.1 ASN.1 REPRESENTATION

```

cctv-camera-type ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "CCTV.Cctv-camera-type:cd"
    ASN-NAME "Cctv-camera-type"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 4 }
    DEFINITION          "A code representing type of CCTV camera."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Cctv-camera-type ::= ENUMERATED {
        bw (1),
        color (2) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.2.1.2 XML REPRESENTATION

```

<xs:simpleType name="Cctv-camera-type">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="2"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="bw"/>
                <xs:enumeration value="color"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.2.2 cctv-image-supported

3.4.2.2.1 ASN.1 REPRESENTATION

```

cctv-image-supported ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "CCTV.Cctv-image-supported:cd"
    ASN-NAME "Cctv-image-supported"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 5 }
    DEFINITION          "The type of images supported by a CCTV."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Cctv-image-supported ::= ENUMERATED {
        jpeg (1),
        tiff (2),
        mpeg (3),
        ntsc (4),

```

```

    pal (5),
    secam (6),
    hdtv (7),
    other (8),
    atsc (9),
    mjpeg (10) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.2.2 XML REPRESENTATION

```

<xs:simpleType name="Cctv-image-supported">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="10"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="jpeg"/>
        <xs:enumeration value="tiff"/>
        <xs:enumeration value="mpeg"/>
        <xs:enumeration value="ntsc"/>
        <xs:enumeration value="pal"/>
        <xs:enumeration value="secam"/>
        <xs:enumeration value="hdtv"/>
        <xs:enumeration value="other"/>
        <xs:enumeration value="atsc"/>
        <xs:enumeration value="mjpeg"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.2.3 cctv-request-command

3.4.2.3.1 ASN.1 REPRESENTATION

```

cctv-request-command ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.Cctv-request-command:cd"
  ASN-NAME "Cctv-request-command"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 6 }
  DEFINITION "A code representing a CCTV command."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Cctv-request-command ::= ENUMERATED {
    preset (1),
    jog-positioning (2),
    direction (3),
    focus (4),
    manual-iris (5),
    environmental-on-off (6),
    lock-for-the-camera (7),
    pan (8),
    tilt (9),
    zoom (10),
    text-overlay (11),
    other (12) }"
  FORMAT "ASN.1 encoding"
}

```

```
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.2.3.2 XML REPRESENTATION

```
<xs:simpleType name="Cctv-request-command">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="12"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="preset"/>
        <xs:enumeration value="jog positioning"/>
        <xs:enumeration value="direction"/>
        <xs:enumeration value="focus"/>
        <xs:enumeration value="manual iris"/>
        <xs:enumeration value="environmental on off"/>
        <xs:enumeration value="lock for the camera"/>
        <xs:enumeration value="pan"/>
        <xs:enumeration value="tilt"/>
        <xs:enumeration value="zoom"/>
        <xs:enumeration value="text overlay"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.2.4 cctv-titling-text

3.4.2.4.1 ASN.1 REPRESENTATION

```
cctv-titling-text ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.Cctv-titling-text:txt"
  ASN-NAME "Cctv-titling-text"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 7 }
  DEFINITION "Descriptive text that accompanies a CCTV image or video."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Cctv-titling-text ::= IA5String (SIZE(1..64))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.2.4.2 XML REPRESENTATION

```
<xs:simpleType name="Cctv-titling-text">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="64"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.3 ConnectionManagement Class Data Elements

3.4.3.1 error-report-code

3.4.3.1.1 ASN.1 REPRESENTATION

```
error-report-code ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ConnectionManagement.Error-report-code:cd"
    ASN-NAME "Error-report-code"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 8 }
    DEFINITION "Code representing type of error in processing of a TMDD message."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Error-report-code ::= ENUMERATED {
        unknown-processing-error (1),
        center-does-not-support-this-type-message (2),
        missing-information-prevents-processing-message (3),
        message-is-not-well-formed-or-cannot-be-parsed (4),
        out-of-range-values (5),
        permission-not-granted-for-request (6),
        authentication-not-recognized (7),
        no-valid-data-available (8),
        other (9) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.3.1.2 XML REPRESENTATION

```
<xs:simpleType name="Error-report-code">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="9"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="unknown processing error"/>
                <xs:enumeration value="center does not support this
type message"/>
                <xs:enumeration value="missing information prevents
processing message"/>
                <xs:enumeration value="message is not well formed or
cannot be parsed"/>
                <xs:enumeration value="out of range values"/>
                <xs:enumeration value="permission not granted for
request"/>
                <xs:enumeration value="authentication not
recognized"/>
                <xs:enumeration value="no valid data available"/>
                <xs:enumeration value="other"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

3.4.3.2 informationalText

3.4.3.2.1 ASN.1 REPRESENTATION

```
informationalText ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ConnectionManagement.InformationalText:txt"
    ASN-NAME "InformationalText"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 212 }
```



```
DEFINITION          "Any set of ASCII characters.  Used for reporting messaging
information, such as error reports."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "InformationalText ::= IA5String (SIZE(1..1024))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.3.2.2 XML REPRESENTATION

```
<xs:simpleType name="InformationalText">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="1024"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.3.3 security-password

3.4.3.3.1 ASN.1 REPRESENTATION

```
security-password ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ConnectionManagement.Security-password:txt"
ASN-NAME "Security-password"
ASN-OBJECT-IDENTIFIER { tmddDataElements 9 }
DEFINITION      "The unique password of a user to login.  Includes support for
encryption."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Security-password ::= IA5String (SIZE(1..256))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.3.3.2 XML REPRESENTATION

```
<xs:simpleType name="Security-password">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.4 Detector Class Data Elements

3.4.4.1 detector-bin-length

3.4.4.1.1 ASN.1 REPRESENTATION

```
detector-bin-length ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Detector.Detector-bin-length:qty"
ASN-NAME "Detector-bin-length"
ASN-OBJECT-IDENTIFIER { tmddDataElements 10 }
DEFINITION      "The maximum vehicle length, in centimeters, for which a vehicle will
be classified within a bin."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Detector-bin-length ::= INTEGER (0..10000)" }
```

```
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "centimeters"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.4.1.2 XML REPRESENTATION

```
<xs:simpleType name="Detector-bin-length">
  <xs:restriction base="xs:unsignedInt">
    <xs:maxInclusive value="10000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.4.2 detector-occupancy

3.4.4.2.1 ASN.1 REPRESENTATION

```
detector-occupancy ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Detector.Detector-occupancy:pct"
  ASN-NAME "Detector-occupancy"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 11 }
  DEFINITION          "The current average percent occupancy of the vehicles on a detector.
  This is percent of time within a given time period, that a point on the roadway is
  occupied by traffic."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Detector-occupancy ::= INTEGER (0..100)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.4.2.2 XML REPRESENTATION

```
<xs:simpleType name="Detector-occupancy">
  <xs:restriction base="xs:unsignedByte">
    <xs:maxInclusive value="100"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.4.3 detector-type

3.4.4.3.1 ASN.1 REPRESENTATION

```
detector-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Detector.Detector-type:cd"
  ASN-NAME "Detector-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 12 }
  DEFINITION          "Code describing the type of a vehicular detector providing traffic
  data."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Detector-type ::= ENUMERATED {
    inductive-loop (1),
    magnetic (2),
    magnetometers (3),
    pressure-cells (4),
    microwave-radar (5),
    ultrasonic (6),
    video-image (7),
    laser (8),
```

```

        infrared (9),
        road-tube (10),
        other (11),
        unknown (12) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.4.3.2 XML REPRESENTATION

```

<xs:simpleType name="Detector-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="12"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="inductive loop"/>
        <xs:enumeration value="magnetic"/>
        <xs:enumeration value="magnetometers"/>
        <xs:enumeration value="pressure cells"/>
        <xs:enumeration value="microwave radar"/>
        <xs:enumeration value="ultrasonic"/>
        <xs:enumeration value="video Image"/>
        <xs:enumeration value="laser"/>
        <xs:enumeration value="infrared"/>
        <xs:enumeration value="road tube"/>
        <xs:enumeration value="other"/>
        <xs:enumeration value="unknown"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.4.4 detector-vehicle-count

3.4.4.4.1 ASN.1 REPRESENTATION

```

detector-vehicle-count ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Detector.Detector-vehicle-count:qty"
  ASN-NAME "Detector-vehicle-count"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 13 }
  DEFINITION "The number of vehicles detected by a detector during a specific time
  period."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Detector-vehicle-count ::= INTEGER (0..10000)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "vehicles"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.4.4.2 XML REPRESENTATION

```

<xs:simpleType name="Detector-vehicle-count">
  <xs:restriction base="xs:unsignedInt">
    <xs:maxInclusive value="10000"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.4.5 detector-vehicle-queue-length

3.4.4.5.1 ASN.1 REPRESENTATION

```
detector-vehicle-queue-length ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Detector.Detector-vehicle-queue-length:qty"  
  ASN-NAME "Detector-vehicle-queue-length"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 14 }  
  DEFINITION "A count of the average number of vehicles in queue, measured by the  
  detector over a specified time period."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Detector-vehicle-queue-length ::= INTEGER (1..10000)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.4.5.2 XML REPRESENTATION

```
<xs:simpleType name="Detector-vehicle-queue-length">  
  <xs:restriction base="xs:unsignedInt">  
    <xs:minInclusive value="1"/>  
    <xs:maxInclusive value="10000"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.4.6 detector-vehicle-speed

3.4.4.6.1 ASN.1 REPRESENTATION

```
detector-vehicle-speed ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Detector.Detector-vehicle-speed:rt"  
  ASN-NAME "Detector-vehicle-speed"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 15 }  
  DEFINITION "The average vehicle speed over a detector during accumulation  
  period."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Detector-vehicle-speed ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "kilometers per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.4.6.2 XML REPRESENTATION

```
<xs:simpleType name="Detector-vehicle-speed">  
  <xs:restriction base="xs:unsignedByte"/>  
</xs:simpleType>
```

3.4.4.7 detector-vehicle-stops

3.4.4.7.1 ASN.1 REPRESENTATION

```
detector-vehicle-stops ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Detector.Detector-vehicle-stops:qty"  
  ASN-NAME "Detector-vehicle-stops"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 16 }  
  DEFINITION "The number of stopped vehicles detected by a detector during a  
  specific time period."
```

```
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Detector-vehicle-stops ::= INTEGER (0..100000)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "vehicles"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.4.7.2 XML REPRESENTATION

```
<xs:simpleType name="Detector-vehicle-stops">
  <xs:restriction base="xs:unsignedInt">
    <xs:maxInclusive value="100000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.5 Device Class Data Elements

3.4.5.1 device-acknowledge-control

3.4.5.1.1 ASN.1 REPRESENTATION

```
device-acknowledge-control ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Device.Device-acknowledge-control:cd"
ASN-NAME "Device-acknowledge-control"
ASN-OBJECT-IDENTIFIER { tmddDataElements 18 }
DEFINITION "Acknowledgement of request command from one TMC to another for
device action."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Device-acknowledge-control ::= ENUMERATED {
  requested-changes-completed (0),
  request-rejected-invalid-command-parameters (1),
  request-rejected-insufficient-privileges-of-the-requesting-operator (2),
  request-queued-not-implemented (3),
  device-is-locked (4),
  other (5) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.5.1.2 XML REPRESENTATION

```
<xs:simpleType name="Device-acknowledge-control">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="5"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="requested changes
completed"/>
        <xs:enumeration value="request rejected invalid
command parameters"/>
        <xs:enumeration value="request rejected insufficient
privileges of the requesting operator"/>
        <xs:enumeration value="request queued/not
implemented"/>
        <xs:enumeration value="device is locked"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

                                <xs:enumeration value="other"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:union>
</xs:simpleType>

```

3.4.5.2 device-beacon

3.4.5.2.1 ASN.1 REPRESENTATION

```

device-beacon ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Device.Device-beacon:cd"
    ASN-NAME "Device-beacon"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 19 }
    DEFINITION "An indicator of the associated beacons with a device (e.g., with DMS
    or HAR)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
 DATA-CONCEPT-TYPE data-element
 STANDARD "TMDD"
 DATA-TYPE "Device-beacon ::= ENUMERATED {
 beacon-available (1),
 no-beacon (2),
 unknown (3),
 other (4) }"

FORMAT "ASN.1 encoding"
 UNIT-OF-MEASURE ""
 VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.5.2.2 XML REPRESENTATION

```

<xs:simpleType name="Device-beacon">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="4"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="beacon available"/>
                <xs:enumeration value="no beacon"/>
                <xs:enumeration value="unknown"/>
                <xs:enumeration value="other"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.5.3 device-command-request-priority

3.4.5.3.1 ASN.1 REPRESENTATION

```

device-command-request-priority ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Device.Device-command-request-priority:qty"
    ASN-NAME "Device-command-request-priority"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 20 }
    DEFINITION "A code to indicate priority for a command request. If the request
    is accepted and the action is posted, then the current state has that priority. Select
    from 1 to 10 where 1 is the highest and 10 is the lowest priority. 0 is used if the
    command request is not to be queued or there is no queue."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
 DATA-CONCEPT-TYPE data-element

```
STANDARD "TMDD"
DATA-TYPE "Device-command-request-priority ::= INTEGER (0..10)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.5.3.2 XML REPRESENTATION

```
<xs:simpleType name="Device-command-request-priority">
  <xs:restriction base="xs:unsignedByte">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="10"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.5.4 device-communications-status

3.4.5.4.1 ASN.1 REPRESENTATION

```
device-communications-status ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Device.Device-communications-status:cd"
  ASN-NAME "Device-communications-status"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 21 }
  DEFINITION "Status of the communications between a center and the device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Device-communications-status ::= ENUMERATED {
    operational (1),
    offline (2),
    failed (3),
    unknown (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.5.4.2 XML REPRESENTATION

```
<xs:simpleType name="Device-communications-status">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="operational"/>
        <xs:enumeration value="offline"/>
        <xs:enumeration value="failed"/>
        <xs:enumeration value="unknown"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.5.5 device-control-type

3.4.5.5.1 ASN.1 REPRESENTATION

```
device-control-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Device.Device-control-type:cd"
  ASN-NAME "Device-control-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 22 }
  DEFINITION      "Identifies the type of requests available to an external center for
this device (e.g., status only, command only, status and command)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"

```
DATA-TYPE "Device-control-type ::= ENUMERATED {
  status-only (1),
  command-only (2),
  status-and-command (3),
  not-specified (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.5.5.2 XML REPRESENTATION

```
<xs:simpleType name="Device-control-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="status only"/>
        <xs:enumeration value="command only"/>
        <xs:enumeration value="status and command"/>
        <xs:enumeration value="not specified"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.5.6 device-error

3.4.5.6.1 ASN.1 REPRESENTATION

```
device-error ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Device.Device-error:cd"
  ASN-NAME "Device-error"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 23 }
  DEFINITION      "A code representing a device error type.  Communications, power,
device, or controller."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"

```
DATA-TYPE "Device-error ::= ENUMERATED {
  communications-error (1),
  power-failure (2),
  device-error (3),
  controller-error (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.5.6.2 XML REPRESENTATION


```
<xs:simpleType name="Device-error">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:int">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="communications error"/>
        <xs:enumeration value="power failure"/>
        <xs:enumeration value="device error"/>
        <xs:enumeration value="controller error"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.5.7 device-information-type

3.4.5.7.1 ASN.1 REPRESENTATION

```
device-information-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Device.Device-information-type:cd"
  ASN-NAME "Device-information-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 24 }
  DEFINITION "A code representing a type of device information."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Device-information-type ::= ENUMERATED {
    device-inventory (1),
    device-status (2),
    device-schedule (3),
    device-plan (4),
    device-maintenance-history (5),
    device-data (6),
    device-metadata (7),
    message-appearance (8),
    device-font-table (9),
    other (10) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.5.7.2 XML REPRESENTATION

```
<xs:simpleType name="Device-information-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="10"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="device inventory"/>
        <xs:enumeration value="device status"/>
        <xs:enumeration value="device schedule"/>
        <xs:enumeration value="device plan"/>
        <xs:enumeration value="device maintenance history"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        <xs:enumeration value="device data"/>
        <xs:enumeration value="device metadata"/>
        <xs:enumeration value="message appearance"/>
        <xs:enumeration value="device font table"/>
        <xs:enumeration value="other"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.5.8 device-location-elevation

3.4.5.8.1 ASN.1 REPRESENTATION

```

device-location-elevation ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Device.Device-location-elevation:qty"
    ASN-NAME "Device-location-elevation"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 25 }
    DEFINITION "The elevation of a device in decimeters."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Device-location-elevation ::= INTEGER (-8191..57344)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "decimeters"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.5.8.2 XML REPRESENTATION

```

<xs:simpleType name="Device-location-elevation">
    <xs:restriction base="xs:int">
        <xs:minInclusive value="-8191"/>
        <xs:maxInclusive value="57344"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.5.9 device-location-height

3.4.5.9.1 ASN.1 REPRESENTATION

```

device-location-height ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Device.Device-location-height:qty"
    ASN-NAME "Device-location-height"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 26 }
    DEFINITION "The height of a device from the ground in decimeters."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Device-location-height ::= INTEGER (-10000..10000)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "decimeters"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.5.9.2 XML REPRESENTATION

```

<xs:simpleType name="Device-location-height">
    <xs:restriction base="xs:short">
        <xs:minInclusive value="-10000"/>
        <xs:maxInclusive value="10000"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.5.10 device-mobility-type

3.4.5.10.1 ASN.1 REPRESENTATION

```
device-mobility-type ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Device.Device-mobility-type:cd"  
  ASN-NAME "Device-mobility-type"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 27 }  
  DEFINITION "Mobility type of the device (e.g., permanent structure or  
  transportable)."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Device-mobility-type ::= ENUMERATED {  
    permanent (1),  
    transportable (2),  
    mobile (3),  
    other (4) }"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.5.10.2 XML REPRESENTATION

```
<xs:simpleType name="Device-mobility-type">  
  <xs:union>  
    <xs:simpleType>  
      <xs:restriction base="xs:unsignedInt">  
        <xs:minInclusive value="1"/>  
        <xs:maxInclusive value="4"/>  
      </xs:restriction>  
    </xs:simpleType>  
    <xs:simpleType>  
      <xs:restriction base="xs:string">  
        <xs:enumeration value="permanent"/>  
        <xs:enumeration value="transportable"/>  
        <xs:enumeration value="mobile"/>  
        <xs:enumeration value="other"/>  
      </xs:restriction>  
    </xs:simpleType>  
  </xs:union>  
</xs:simpleType>
```

3.4.5.11 device-operational-status

3.4.5.11.1 ASN.1 REPRESENTATION

```
device-operational-status ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Device.Device-operational-status:cd"  
  ASN-NAME "Device-operational-status"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 28 }  
  DEFINITION "Operational status of a device (e.g., on, off, etc.)."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Device-operational-status ::= ENUMERATED {  
    on (1),  
    off (2),  
    out-of-service (3),  
    unavailable (4),  
    unknown (5),  
    marginal (6),  
    failed (7),
```

```

        other (8) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.5.11.2 XML REPRESENTATION

```

<xs:simpleType name="Device-operational-status">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="8"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="on"/>
        <xs:enumeration value="off"/>
        <xs:enumeration value="out of service"/>
        <xs:enumeration value="unavailable"/>
        <xs:enumeration value="unknown"/>
        <xs:enumeration value="marginal"/>
        <xs:enumeration value="failed"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.5.12 device-operation-type

3.4.5.12.1 ASN.1 REPRESENTATION

```

device-operation-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Device.Device-operation-type:cd"
  ASN-NAME "Device-operation-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 29 }
  DEFINITION "Operational category of a device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Device-operation-type ::= ENUMERATED {
    staffed (1),
    automatic (2),
    unknown (3),
    other (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.5.12.2 XML REPRESENTATION

```

<xs:simpleType name="Device-operation-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>

```

```

        <xs:restriction base="xs:string">
            <xs:enumeration value="staffed"/>
            <xs:enumeration value="automatic"/>
            <xs:enumeration value="unknown"/>
            <xs:enumeration value="other"/>
        </xs:restriction>
    </xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.5.13 device-return-current-message-snapshot-flag

3.4.5.13.1 ASN.1 REPRESENTATION

```

device-return-current-message-snapshot-flag ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Device.Device-return-current-message-snapshot-flag:cd"
    ASN-NAME "Device-return-current-message-snapshot-flag"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 30 }
    DEFINITION          "This is a code indicating that the external center requests the
owner center to return a snapshot of what the current message on the device looks like
(for DMS) or sounds like (for HAR). If used this flag is always value yes."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Device-return-current-message-snapshot-flag ::= ENUMERATED {
        yes (1) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.5.13.2 XML REPRESENTATION

```

<xs:simpleType name="Device-return-current-message-snapshot-flag">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="1"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="yes"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.5.14 device-sensor-data-type

3.4.5.14.1 ASN.1 REPRESENTATION

```

device-sensor-data-type ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Device.Device-sensor-data-type:cd"
    ASN-NAME "Device-sensor-data-type"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 31 }
    DEFINITION          "A further sub classification of the device information type when
this code is sensor data."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Device-sensor-data-type ::= ENUMERATED {
        actual (1),

```

```

        reconstructed (2),
        historical (3),
        predicted (4),
        smoothed (5),
        averaged (6),
        estimated (7) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.5.14.2 XML REPRESENTATION

```

<xs:simpleType name="Device-sensor-data-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="7"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="actual"/>
        <xs:enumeration value="reconstructed"/>
        <xs:enumeration value="historical"/>
        <xs:enumeration value="predicted"/>
        <xs:enumeration value="smoothed"/>
        <xs:enumeration value="averaged"/>
        <xs:enumeration value="estimated"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.5.15 device-type

3.4.5.15.1 ASN.1 REPRESENTATION

```

device-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Device.Device-type:cd"
  ASN-NAME "Device-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 32 }
  DEFINITION "A code which specifies the type of device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Device-type ::= ENUMERATED {
    detector (1),
    cctv-camera (2),
    dynamic-message-sign (3),
    environmental-sensor-station (4),
    gate (5),
    highway-advisory-radio (6),
    lane-control-signal (7),
    ramp-meter (8),
    signal-controller (9),
    signal-section (10),
    video-switch (11),
    other (12) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.5.15.2 XML REPRESENTATION

```
<xs:simpleType name="Device-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="12"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="detector"/>
        <xs:enumeration value="cctv camera"/>
        <xs:enumeration value="dynamic message sign"/>
        <xs:enumeration value="environmental sensor
station"/>
        <xs:enumeration value="gate"/>
        <xs:enumeration value="highway advisory radio"/>
        <xs:enumeration value="lane control signal"/>
        <xs:enumeration value="ramp meter"/>
        <xs:enumeration value="signal controller"/>
        <xs:enumeration value="signal section"/>
        <xs:enumeration value="video switch"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.6 DMS Class Data Elements

3.4.6.1 dms-request-command

3.4.6.1.1 ASN.1 REPRESENTATION

```
dms-request-command ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.Dms-request-command:cd"
  ASN-NAME "Dms-request-command"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 33 }
  DEFINITION "A request command from one TMC to another for DMS action."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Dms-request-command ::= ENUMERATED {
    put-up-custom-message (1),
    put-up-a-library-message (2),
    remove-message (3),
    other (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.6.1.2 XML REPRESENTATION

```
<xs:simpleType name="Dms-request-command">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
```

```

        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="put up custom message"/>
                <xs:enumeration value="put up a library message"/>
                <xs:enumeration value="remove message"/>
                <xs:enumeration value="other"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.7 ESS Class Data Elements

3.4.7.1 ess-angle-degrees

3.4.7.1.1 ASN.1 REPRESENTATION

```

ess-angle-degrees ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-angle-degrees:qty"
    ASN-NAME "Ess-angle-degrees"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 35 }
    DEFINITION "The number representing an angle in degrees used in describing
    observation meta data."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-angle-degrees ::= INTEGER (-359..359)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "degrees"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.7.1.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-angle-degrees">
    <xs:restriction base="xs:int">
        <xs:minInclusive value="-359"/>
        <xs:maxInclusive value="359"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.7.2 ess-avg-wind-gust-speed

3.4.7.2.1 ASN.1 REPRESENTATION

```

ess-avg-wind-gust-speed ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-avg-wind-gust-speed:qty"
    ASN-NAME "Ess-avg-wind-gust-speed"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 36 }
    DEFINITION "Represents the average of several wind gust measurements over a
    period of time."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-avg-wind-gust-speed ::= INTEGER (0..65535)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.7.2.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-avg-wind-gust-speed">
    <xs:restriction base="xs:unsignedShort"/>

```


</xs:simpleType>

3.4.7.3 ess-data-set-file-access-protocol

3.4.7.3.1 ASN.1 REPRESENTATION

```
ess-data-set-file-access-protocol ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.Ess-data-set-file-access-protocol:cd"  
  ASN-NAME "Ess-data-set-file-access-protocol"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 37 }  
  DEFINITION "A code representing the method to use to access a sensor data or  
  observations file."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Ess-data-set-file-access-protocol ::= ENUMERATED {  
    http (1),  
    https (2),  
    ftp (3),  
    other (4) }"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.3.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-data-set-file-access-protocol">  
  <xs:union>  
    <xs:simpleType>  
      <xs:restriction base="xs:unsignedInt">  
        <xs:minInclusive value="1"/>  
        <xs:maxInclusive value="4"/>  
      </xs:restriction>  
    </xs:simpleType>  
    <xs:simpleType>  
      <xs:restriction base="xs:string">  
        <xs:enumeration value="http"/>  
        <xs:enumeration value="https"/>  
        <xs:enumeration value="ftp"/>  
        <xs:enumeration value="other"/>  
      </xs:restriction>  
    </xs:simpleType>  
  </xs:union>  
</xs:simpleType>
```

3.4.7.4 ess-data-set-file-access-protocol-port-address

3.4.7.4.1 ASN.1 REPRESENTATION

```
ess-data-set-file-access-protocol-port-address ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.Ess-data-set-file-access-protocol-port-address:nbr"  
  ASN-NAME "Ess-data-set-file-access-protocol-port-address"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 38 }  
  DEFINITION "A number that specifies a communications protocol port address."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Ess-data-set-file-access-protocol-port-address ::= INTEGER (1..1024)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.4.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-data-set-file-access-protocol-port-address">
  <xs:restriction base="xs:int">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="1024"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.5 ess-data-set-file-host

3.4.7.5.1 ASN.1 REPRESENTATION

```
ess-data-set-file-host ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-data-set-file-host:txt"
  ASN-NAME "Ess-data-set-file-host"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 39 }
  DEFINITION "A string representing hostname or IP address of the server where the
  file containing a sensor data set can be found."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-data-set-file-host ::= IA5String (SIZE(1..256))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.5.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-data-set-file-host">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.6 ess-data-set-file-name

3.4.7.6.1 ASN.1 REPRESENTATION

```
ess-data-set-file-name ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-data-set-file-name:txt"
  ASN-NAME "Ess-data-set-file-name"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 40 }
  DEFINITION "A string representing the name of the file containing a sensor data
  set."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-data-set-file-name ::= IA5String (SIZE(1..256))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.6.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-data-set-file-name">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
```

</xs:simpleType>

3.4.7.7 ess-data-set-file-path

3.4.7.7.1 ASN.1 REPRESENTATION

```
ess-data-set-file-path ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-data-set-file-path:txt"
  ASN-NAME "Ess-data-set-file-path"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 41 }
  DEFINITION "A string representing the logical directory path where the file
  containing the sensor data set is located."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-data-set-file-path ::= IA5String (SIZE(1..256))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.7.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-data-set-file-path">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.8 ess-distance-meters

3.4.7.8.1 ASN.1 REPRESENTATION

```
ess-distance-meters ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-distance-meters:qty"
  ASN-NAME "Ess-distance-meters"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 42 }
  DEFINITION "The number representing a distance in meters used in describing
  observation meta data."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-distance-meters ::= REAL"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "meters"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.8.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-distance-meters">
  <xs:restriction base="xs:float"/>
</xs:simpleType>
```

3.4.7.9 ess-distribution-group

3.4.7.9.1 ASN.1 REPRESENTATION

```
ess-distribution-group ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-distribution-group:cd"
  ASN-NAME "Ess-distribution-group"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 43 }
```

```

DEFINITION          "A code identifying the distribution group to whom sensor data can be
provided."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Ess-distribution-group ::= ENUMERATED {
    do-not-distribute (1),
    distribute-to-everyone (2),
    other (3) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.7.9.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-distribution-group">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="do not distribute"/>
        <xs:enumeration value="distribute to everyone"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.7.10 ess-object-label

3.4.7.10.1 ASN.1 REPRESENTATION

```

ess-object-label ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.Ess-object-label:txt"
ASN-NAME "Ess-object-label"
ASN-OBJECT-IDENTIFIER { tmddDataElements 44 }
DEFINITION      "A string representing the column label name for a data set file
containing observation data."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Ess-object-label ::= IA5String (SIZE(1..256))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.7.10.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-object-label">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.7.11 ess-object-name

3.4.7.11.1 *ASN.1 REPRESENTATION*

```
ess-object-name ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-object-name:cd"
    ASN-NAME "Ess-object-name"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 45 }
    DEFINITION "A code representing an ESS NTCIP Object name. Used to indicate a
    type of ESS observation."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-object-name ::= ENUMERATED {
        essntcipcategory (1),
        essntcipsitedescription (2),
        esstypeofstation (3),
        essdoorstatus (4),
        essbatterystatus (5),
        esslinevolts (6),
        essstationmetadatablock (7),
        essweatherblock (8),
        essmobileblock (9),
        essstationmetadatatav3block (10),
        essweatherv3block (11),
        esslatitude (12),
        esslongitude (13),
        essvehiclespeed (14),
        essvehiclebearing (15),
        essodometer (16),
        essreferenceheight (17),
        esspressureheight (18),
        esswindsensorheight (19),
        essatmosphericpressure (20),
        essavgwinddirection (21),
        essavgwindspeed (22),
        essspotwinddirection (23),
        essspotwindspeed (24),
        esswindsituation (25),
        essmaxwindgustspeed (26),
        essmaxwindgustdir (27),
        windsensortablenumsensors (28),
        windsensortable (29),
        windsensoreentry (30),
        windsensorindex (31),
        windsensorheight (32),
        windsensorlocation (33),
        windsensoravgspeed (34),
        windsensoravgdirection (35),
        windsensorspotddirection (37),
        windsensorgustspeed (38),
        windsensorgustdirection (39),
        windsensorsituation (40),
        essnumtemperaturesensors (41),
        essstemperaturesensortable (42),
        essstemperaturesensoreentry (43),
        essstemperaturesensorindex (44),
        essstemperaturesensorheight (45),
        essairtemperature (46),
        esswetbulbtemp (47),
        essdewpointtemp (48),
        essmaxtemp (49),
        essmintemp (50),
        essrelativehumidity (51),
        esswaterdepth (52),
        essadjacentsnowdepth (53),
```

essroadwaysnowdepth (54),
essroadwaysnowpackdepth (55),
essprecipyesno (56),
esspreciprate (57),
esssnowfallaccumrate (58),
essprecipsituation (59),
essicethickness (60),
essprecipitationstarttime (61),
essprecipitationendtime (62),
essprecipitationonehour (63),
essprecipitationthreehours (64),
essprecipitationsixhours (65),
essprecipitationtwelvehours (66),
essprecipitation24hours (67),
precipitationsensormodelinformation (68),
waterlevelsensortablenumsensors (69),
waterlevelsensortable (70),
waterlevelsensoreentry (71),
waterlevelsensorindex (72),
waterlevelsensorreading (73),
esssolarradiation (74),
esstotalsun (75),
esscloudsituation (76),
essinstantaneousterrestrialradiation (77),
essinstantaneoussolarradiation (78),
esstotalradiation (79),
esstotalradiationperiod (80),
essvisibility (81),
essvisibilitysituation (82),
numesspavementsensors (83),
esspavementsensortable (84),
esspavementsensoreentry (85),
esspavementsensorindex (86),
esspavementsensorlocation (87),
esspavementtype (88),
esspavementelevation (89),
esspavementexposure (90),
esspavementsensortype (91),
esssurfacestatus (92),
esssurfacetemperature (93),
esspavementtemperature (94),
esssurfacewaterdepth (95),
esssurfacealinity (96),
esssurfaceconductivity (97),
esssurfacefreezepoint (98),
esssurfaceblackicesignal (99),
esspavementsensorerror (100),
esssurfaceiceorwaterdepth (101),
esssurfaceconductivityv2 (102),
pavementsensormodelinformation (103),
pavementsensortemperaturedepth (104),
numesssubsurfacesensors (105),
esssubsurfacesensortable (106),
esssubsurfacesensoreentry (107),
esssubsurfacesensorindex (108),
esssubsurfacesensorlocation (109),
esssubsurfacetype (110),
esssubsurfacesensordepth (111),
esssubsurfacetemperature (112),
esssubsurfacemoisture (113),
esssubsurfacesensorerror (114),
esspavementblock (115),
esssubsurfaceblock (116),
esspavementv3block (117),
essmobilefriction (118),

```

    essmobileobservationgroundstate (119),
    essmobileobservationpavement (120),
    numesstreatments (121),
    esspavementtreatmenttable (122),
    esspavementtreatmententry (123),
    esspavementtreatmentindex (124),
    esspavetreatproducttype (125),
    esspavetreatproductform (126),
    esspercentproductmix (127),
    esspavetreatmentamount (128),
    esspavetreatmentwidth (129),
    pavementtreatmentblock (130),
    ptsoperationalmode (131),
    ptscommandstate (132),
    ptssprayerstate (133),
    ptssignalduration (134),
    ptssignaleventcount (135),
    ptslastsignalevent (136),
    ptsactiveeventcount (137),
    ptsinactiveeventcount (138),
    ptslastactiveevent (139),
    ptslastinactiveevent (140),
    ptserror (141),
    ptsmonitoringdetectors (142),
    essco (143),
    essco2 (144),
    essno (145),
    essno2 (146),
    essso2 (147),
    esso3 (148),
    esspm10 (149),
    essairqualityblock (150),
    esssnapshotnumberofcameras (151),
    esssnapshotcameratable (152),
    esssnapshotcameraentry (153),
    esssnapshotcameraindex (154),
    esssnapshotcameradescription (155),
    esssnapshotcamerastoragepath (156),
    esssnapshotcameracommand (157),
    esssnapshotcameraerror (158),
    esssnapshotcamerafilename (159),
    other (160) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.7.11.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-object-name">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="160"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="essNtcipCategory"/>
        <xs:enumeration value="essNtcipSiteDescription"/>
        <xs:enumeration value="essTypeofStation"/>
        <xs:enumeration value="essDoorStatus"/>
        <xs:enumeration value="essBatteryStatus"/>
        <xs:enumeration value="essLineVolts"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

```

<xs:enumeration value="essStationMetadataBlock"/>
<xs:enumeration value="essWeatherBlock"/>
<xs:enumeration value="essMobileBlock"/>
<xs:enumeration value="essStationMetadataV3Block"/>
<xs:enumeration value="essWeatherV3Block"/>
<xs:enumeration value="essLatitude"/>
<xs:enumeration value="essLongitude"/>
<xs:enumeration value="essVehicleSpeed"/>
<xs:enumeration value="essVehicleBearing"/>
<xs:enumeration value="essOdometer"/>
<xs:enumeration value="essReferenceHeight"/>
<xs:enumeration value="essPressureHeight"/>
<xs:enumeration value="essWindSensorHeight"/>
<xs:enumeration value="essAtmosphericPressure"/>
<xs:enumeration value="essAvgWindDirection"/>
<xs:enumeration value="essAvgWindSpeed"/>
<xs:enumeration value="essSpotWindDirection"/>
<xs:enumeration value="essSpotWindSpeed"/>
<xs:enumeration value="essWindSituation"/>
<xs:enumeration value="essMaxWindGustSpeed"/>
<xs:enumeration value="essMaxWindGustDir"/>
<xs:enumeration value="windSensorTableNumSensors"/>
<xs:enumeration value="windSensorTable"/>
<xs:enumeration value="windSensorEntry"/>
<xs:enumeration value="windSensorIndex"/>
<xs:enumeration value="windSensorHeight"/>
<xs:enumeration value="windSensorLocation"/>
<xs:enumeration value="windSensorAvgSpeed"/>
<xs:enumeration value="windSensorAvgDirection"/>
<xs:enumeration value="windSensorSpotSpeed"/>
<xs:enumeration value="windSensorSpotDirection"/>
<xs:enumeration value="windSensorGustSpeed"/>
<xs:enumeration value="windSensorGustDirection"/>
<xs:enumeration value="windSensorSituation"/>
<xs:enumeration value="essNumTemperatureSensors"/>
<xs:enumeration value="essTemperatureSensorTable"/>
<xs:enumeration value="essTemperatureSensorEntry"/>
<xs:enumeration value="essTemperatureSensorIndex"/>
<xs:enumeration value="essTemperatureSensorHeight"/>
<xs:enumeration value="essAirTemperature"/>
<xs:enumeration value="essWetbulbTemp"/>
<xs:enumeration value="essDewpointTemp"/>
<xs:enumeration value="essMaxTemp"/>
<xs:enumeration value="essMinTemp"/>
<xs:enumeration value="essRelativeHumidity"/>
<xs:enumeration value="essWaterDepth"/>
<xs:enumeration value="essAdjacentSnowDepth"/>
<xs:enumeration value="essRoadwaySnowDepth"/>
<xs:enumeration value="essRoadwaySnowPackDepth"/>
<xs:enumeration value="essPrecipYesNo"/>
<xs:enumeration value="essPrecipRate"/>
<xs:enumeration value="essSnowfallAccumRate"/>
<xs:enumeration value="essPrecipSituation"/>
<xs:enumeration value="essIceThickness"/>
<xs:enumeration value="essPrecipitationStartTime"/>
<xs:enumeration value="essPrecipitationEndTime"/>
<xs:enumeration value="essPrecipitationOneHour"/>
<xs:enumeration value="essPrecipitationThreeHours"/>
<xs:enumeration value="essPrecipitationSixHours"/>
<xs:enumeration
value="essPrecipitationTwelveHours"/>
<xs:enumeration value="essPrecipitation24Hours"/>
<xs:enumeration
value="precipitationSensorModelInformation"/>

```



```

        <xs:enumeration
value="waterLevelSensorTableNumSensors"/>
        <xs:enumeration value="waterLevelSensorTable"/>
        <xs:enumeration value="waterLevelSensorEntry"/>
        <xs:enumeration value="waterLevelSensorIndex"/>
        <xs:enumeration value="waterLevelSensorReading"/>
        <xs:enumeration value="essSolarRadiation"/>
        <xs:enumeration value="essTotalSun"/>
        <xs:enumeration value="essCloudSituation"/>
        <xs:enumeration
value="essInstantaneousTerrestrialRadiation"/>
        <xs:enumeration
value="essInstantaneousSolarRadiation"/>
        <xs:enumeration value="essTotalRadiation"/>
        <xs:enumeration value="essTotalRadiationPeriod"/>
        <xs:enumeration value="essVisibility"/>
        <xs:enumeration value="essVisibilitySituation"/>
        <xs:enumeration value="numEssPavementSensors"/>
        <xs:enumeration value="essPavementSensorTable"/>
        <xs:enumeration value="essPavementSensorEntry"/>
        <xs:enumeration value="essPavementSensorIndex"/>
        <xs:enumeration value="essPavementSensorLocation"/>
        <xs:enumeration value="essPavementType"/>
        <xs:enumeration value="essPavementElevation"/>
        <xs:enumeration value="essPavementExposure"/>
        <xs:enumeration value="essPavementSensorType"/>
        <xs:enumeration value="essSurfaceStatus"/>
        <xs:enumeration value="essSurfaceTemperature"/>
        <xs:enumeration value="essPavementTemperature"/>
        <xs:enumeration value="essSurfaceWaterDepth"/>
        <xs:enumeration value="essSurfaceSalinity"/>
        <xs:enumeration value="essSurfaceConductivity"/>
        <xs:enumeration value="essSurfaceFreezePoint"/>
        <xs:enumeration value="essSurfaceBlackIceSignal"/>
        <xs:enumeration value="essPavementSensorError"/>
        <xs:enumeration value="essSurfaceIceOrWaterDepth"/>
        <xs:enumeration value="essSurfaceConductivityV2"/>
        <xs:enumeration
value="pavementSensorModelInformation"/>
        <xs:enumeration
value="pavementSensorTemperatureDepth"/>
        <xs:enumeration value="numEssSubSurfaceSensors"/>
        <xs:enumeration value="essSubSurfaceSensorTable"/>
        <xs:enumeration value="essSubSurfaceSensorEntry"/>
        <xs:enumeration value="essSubSurfaceSensorIndex"/>
        <xs:enumeration
value="essSubSurfaceSensorLocation"/>
        <xs:enumeration value="essSubSurfaceType"/>
        <xs:enumeration value="essSubSurfaceSensorDepth"/>
        <xs:enumeration value="essSubSurfaceTemperature"/>
        <xs:enumeration value="essSubSurfaceMoisture"/>
        <xs:enumeration value="essSubSurfaceSensorError"/>
        <xs:enumeration value="essPavementBlock"/>
        <xs:enumeration value="essSubSurfaceBlock"/>
        <xs:enumeration value="essPavementV3Block"/>
        <xs:enumeration value="essMobileFriction"/>
        <xs:enumeration
value="essMobileObservationGroundState"/>
        <xs:enumeration
value="essMobileObservationPavement"/>
        <xs:enumeration value="numEssTreatments"/>
        <xs:enumeration value="essPavementTreatmentTable"/>
        <xs:enumeration value="essPavementTreatmentEntry"/>
        <xs:enumeration value="essPavementTreatmentIndex"/>
        <xs:enumeration value="essPaveTreatProductType"/>

```

```

        <xs:enumeration value="essPaveTreatProductForm"/>
        <xs:enumeration value="essPercentProductMix"/>
        <xs:enumeration value="essPaveTreatmentAmount"/>
        <xs:enumeration value="essPaveTreatmentWidth"/>
        <xs:enumeration value="pavementTreatmentBlock"/>
        <xs:enumeration value="ptsOperationalMode"/>
        <xs:enumeration value="ptsCommandState"/>
        <xs:enumeration value="ptsSprayerState"/>
        <xs:enumeration value="ptsSignalDuration"/>
        <xs:enumeration value="ptsSignalEventCount"/>
        <xs:enumeration value="ptsLastSignalEvent"/>
        <xs:enumeration value="ptsActiveEventCount"/>
        <xs:enumeration value="ptsInactiveEventCount"/>
        <xs:enumeration value="ptsLastActiveEvent"/>
        <xs:enumeration value="ptsLastInactiveEvent"/>
        <xs:enumeration value="ptsError"/>
        <xs:enumeration value="ptsMonitoringDetectors"/>
        <xs:enumeration value="essCO"/>
        <xs:enumeration value="essCO2"/>
        <xs:enumeration value="essNO"/>
        <xs:enumeration value="essNO2"/>
        <xs:enumeration value="essSO2"/>
        <xs:enumeration value="essO3"/>
        <xs:enumeration value="essPM10"/>
        <xs:enumeration value="essAirQualityBlock"/>
        <xs:enumeration value="essSnapshotNumberOfCameras"/>
        <xs:enumeration value="essSnapshotCameraTable"/>
        <xs:enumeration value="essSnapshotCameraEntry"/>
        <xs:enumeration value="essSnapshotCameraIndex"/>
        <xs:enumeration
value="essSnapshotCameraDescription"/>
        <xs:enumeration
value="essSnapshotCameraStoragePath"/>
        <xs:enumeration value="essSnapshotCameraCommand"/>
        <xs:enumeration value="essSnapshotCameraError"/>
        <xs:enumeration value="essSnapshotCameraFilename"/>
        <xs:enumeration value="other"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.7.12 ess-object-null-value

3.4.7.12.1 ASN.1 REPRESENTATION

```

ess-object-null-value ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-object-null-value:txt"
    ASN-NAME "Ess-object-null-value"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 46 }
    DEFINITION "A string representing the null value used to indicate an error or
missing value from a data set file containing observation data."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-object-null-value ::= IA5String (SIZE(1..256))"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.7.12.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-object-null-value">

```

```
<xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
</xs:restriction>
</xs:simpleType>
```

3.4.7.13 ess-observation-decimal-scaling-factor

3.4.7.13.1 ASN.1 REPRESENTATION

```
ess-observation-decimal-scaling-factor ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-observation-decimal-scaling-factor:nbr"
    ASN-NAME "Ess-observation-decimal-scaling-factor"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 48 }
    DEFINITION "A scaling factor which when multiplied with the recorded and
    reported observation value yields the true value of the observation."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-observation-decimal-scaling-factor ::= REAL"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.13.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-observation-decimal-scaling-factor">
    <xs:restriction base="xs:float"/>
</xs:simpleType>
```

3.4.7.14 ess-observation-month

3.4.7.14.1 ASN.1 REPRESENTATION

```
ess-observation-month ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-observation-month:cd"
    ASN-NAME "Ess-observation-month"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 47 }
    DEFINITION "Represents the month in which an observation was taken."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-observation-month ::= ENUMERATED {
        january (1),
        february (2),
        march (3),
        april (4),
        may (5),
        june (6),
        july (7),
        august (8),
        september (9),
        october (10),
        november (11),
        december (12) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.14.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-observation-month">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="12"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="January"/>
        <xs:enumeration value="February"/>
        <xs:enumeration value="March"/>
        <xs:enumeration value="April"/>
        <xs:enumeration value="May"/>
        <xs:enumeration value="June"/>
        <xs:enumeration value="July"/>
        <xs:enumeration value="August"/>
        <xs:enumeration value="September"/>
        <xs:enumeration value="October"/>
        <xs:enumeration value="November"/>
        <xs:enumeration value="December"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.7.15 ess-observation-percent

3.4.7.15.1 ASN.1 REPRESENTATION

```
ess-observation-percent ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-observation-percent:pct"
  ASN-NAME "Ess-observation-percent"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 49 }
  DEFINITION "The number representing percent used in describing observation meta
  data."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-observation-percent ::= INTEGER (0..100)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.15.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-observation-percent">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="100"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.16 ess-observation-positional-order

3.4.7.16.1 ASN.1 REPRESENTATION

```
ess-observation-positional-order ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-observation-positional-order:nbr"
  ASN-NAME "Ess-observation-positional-order"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 50 }
```

```

DEFINITION          "A number that describes the order in which observations are reported
in the data set file."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Ess-observation-positional-order ::= INTEGER (1..1024)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.7.16.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-observation-positional-order">
  <xs:restriction base="xs:int">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="1024"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.7.17 ess-observation-sensor-index

3.4.7.17.1 ASN.1 REPRESENTATION

```

ess-observation-sensor-index ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.Ess-observation-sensor-index:nbr"
ASN-NAME "Ess-observation-sensor-index"
ASN-OBJECT-IDENTIFIER { tmddDataElements 51 }
DEFINITION      "The order of like sensors, used to distinguish one of a set of like
sensors associated with a particular station."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Ess-observation-sensor-index ::= INTEGER (1..32768)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.7.17.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-observation-sensor-index">
  <xs:restriction base="xs:int">
    <xs:minInclusive value="1"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.7.18 ess-observation-time-zone

3.4.7.18.1 ASN.1 REPRESENTATION

```

ess-observation-time-zone ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.Ess-observation-time-zone:qty"
ASN-NAME "Ess-observation-time-zone"
ASN-OBJECT-IDENTIFIER { tmddDataElements 52 }
DEFINITION      "The number representing number of hours offset from UTC."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Ess-observation-time-zone ::= INTEGER (-12..12)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "hours"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.7.18.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-observation-time-zone">
  <xs:restriction base="xs:byte">
    <xs:minInclusive value="-12"/>
    <xs:maxInclusive value="12"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.19 ess-observation-units

3.4.7.19.1 ASN.1 REPRESENTATION

```
ess-observation-units ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-observation-units:txt"
  ASN-NAME "Ess-observation-units"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 53 }
  DEFINITION "A string representing the units of measure of an observation. Any
  set of alphanumeric characters up to 64."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-observation-units ::= IA5String (SIZE(1..64))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.19.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-observation-units">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="64"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.20 ess-observation-value-range-number

3.4.7.20.1 ASN.1 REPRESENTATION

```
ess-observation-value-range-number ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-observation-value-range-number:nbr"
  ASN-NAME "Ess-observation-value-range-number"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 54 }
  DEFINITION "A number representing the min or max value range for an
  observation."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-observation-value-range-number ::= INTEGER (-2147483648..2147483647)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.20.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-observation-value-range-number">
  <xs:restriction base="xs:int">
    <xs:minInclusive value="-2147483648"/>
    <xs:maxInclusive value="2147483647"/>
  </xs:restriction>
```

</xs:simpleType>

3.4.7.21 ess-observation-rate-of-change

3.4.7.21.1 ASN.1 REPRESENTATION

```
ess-observation-rate-of-change ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.Ess-observation-rate-of-change:rt"  
  ASN-NAME "Ess-observation-rate-of-change"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 55 }  
  DEFINITION      "A number representing the minimum or maximum rate of change in an  
  observation over a given period of time. Observation change per rate time interval."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Ess-observation-rate-of-change ::= REAL"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "change per rate time interval"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.21.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-observation-rate-of-change">  
  <xs:restriction base="xs:float"/>  
</xs:simpleType>
```

3.4.7.22 ess-probability

3.4.7.22.1 ASN.1 REPRESENTATION

```
ess-probability ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.Ess-probability:pct"  
  ASN-NAME "Ess-probability"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 56 }  
  DEFINITION      "A percent probability of a forecast for ESS derived information."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Ess-probability ::= INTEGER (0..100)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.22.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-probability">  
  <xs:restriction base="xs:unsignedByte">  
    <xs:maxInclusive value="100"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.7.23 ess-sensor-accuracy

3.4.7.23.1 ASN.1 REPRESENTATION

```
ess-sensor-accuracy ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.Ess-sensor-accuracy:nbr"  
  ASN-NAME "Ess-sensor-accuracy"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 57 }  
  DEFINITION      "A number representing the known potential variation of the  
  observation of the sensor."
```

```
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
DATA-CONCEPT-TYPE data-element  
STANDARD "TMDD"  
DATA-TYPE "Ess-sensor-accuracy ::= REAL"  
FORMAT "ASN.1 encoding"  
UNIT-OF-MEASURE ""  
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.23.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-sensor-accuracy">  
  <xs:restriction base="xs:float"/>  
</xs:simpleType>
```

3.4.7.24 ess-sensor-resolution

3.4.7.24.1 ASN.1 REPRESENTATION

```
ess-sensor-resolution ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.Ess-sensor-resolution:nbr"  
  ASN-NAME "Ess-sensor-resolution"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 58 }  
  DEFINITION "A number representing the finest units of measure for an  
  observation."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Ess-sensor-resolution ::= REAL"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.24.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-sensor-resolution">  
  <xs:restriction base="xs:float"/>  
</xs:simpleType>
```

3.4.7.25 ess-sensor-type

3.4.7.25.1 ASN.1 REPRESENTATION

```
ess-sensor-type ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.Ess-sensor-type:cd"  
  ASN-NAME "Ess-sensor-type"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 59 }  
  DEFINITION "Type of ESS sensor."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Ess-sensor-type ::= ENUMERATED {  
    unknown (1),  
    other (2),  
    atmospheric (3),  
    wind (4),  
    temperature (5),  
    precipitation (6),  
    visibility (7),  
    pavement (8),  
    subsurface (9) }"  
  FORMAT "ASN.1 encoding"
```


UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.7.25.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-sensor-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="9"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="unknown"/>
        <xs:enumeration value="other"/>
        <xs:enumeration value="atmospheric"/>
        <xs:enumeration value="wind"/>
        <xs:enumeration value="temperature"/>
        <xs:enumeration value="precipitation"/>
        <xs:enumeration value="visiblity"/>
        <xs:enumeration value="pavement"/>
        <xs:enumeration value="subsurface"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.7.26 ess-site-country-code

3.4.7.26.1 ASN.1 REPRESENTATION

```
ess-site-country-code ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-site-country-code:cd"
  ASN-NAME "Ess-site-country-code"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 60 }
  DEFINITION "Represents the country of an ESS site."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-site-country-code ::= ENUMERATED {
    usa (1),
    can (2),
    mex (3) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.26.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-site-country-code">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="USA"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        <xs:enumeration value="CAN"/>
        <xs:enumeration value="MEX"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.7.27 **ess-station-comm-method**

3.4.7.27.1 **ASN.1 REPRESENTATION**

```

ess-station-comm-method ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-station-comm-method:cd"
    ASN-NAME "Ess-station-comm-method"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 61 }
    DEFINITION "Represents the method of communications to an ESS."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-station-comm-method ::= ENUMERATED {
        telephone-number (1),
        ip-address (2) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.7.27.2 ***XML REPRESENTATION***

```

<xs:simpleType name="Ess-station-comm-method">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="2"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="telephone number"/>
                <xs:enumeration value="IP address"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.7.28 **ess-station-maintenance-status**

3.4.7.28.1 **ASN.1 REPRESENTATION**

```

ess-station-maintenance-status ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "ESS.Ess-station-maintenance-status:cd"
    ASN-NAME "Ess-station-maintenance-status"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 62 }
    DEFINITION "A code indicating whether the ESS is being serviced for
maintenance."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Ess-station-maintenance-status ::= ENUMERATED {
        in-service (1),
        out-of-service (2) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""

```

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.7.28.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-station-maintenance-status">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="2"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="in service"/>
        <xs:enumeration value="out of service"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.7.29 ess-station-number-of-devices

3.4.7.29.1 ASN.1 REPRESENTATION

```
ess-station-number-of-devices ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-station-number-of-devices:qty"
  ASN-NAME "Ess-station-number-of-devices"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 63 }
  DEFINITION "The number of devices controlled and monitored by a station."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-station-number-of-devices ::= INTEGER (1..10000)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "devices"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.29.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-station-number-of-devices">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="10000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.30 ess-station-power-source

3.4.7.30.1 ASN.1 REPRESENTATION

```
ess-station-power-source ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-station-power-source:cd"
  ASN-NAME "Ess-station-power-source"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 64 }
  DEFINITION "Represents the type of power of an ESS."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-station-power-source ::= ENUMERATED {
    battery (1),
```

```

    line (2) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.7.30.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-station-power-source">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="2"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="battery"/>
        <xs:enumeration value="line"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.7.31 ess-time-span-days

3.4.7.31.1 ASN.1 REPRESENTATION

```

ess-time-span-days ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-time-span-days:qty"
  ASN-NAME "Ess-time-span-days"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 65 }
  DEFINITION "The number representing a time span in days used in referencing the
time of observation data."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-time-span-days ::= INTEGER (1..10000)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "days"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.7.31.2 XML REPRESENTATION

```

<xs:simpleType name="Ess-time-span-days">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="10000"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.7.32 ess-time-span-milliseconds

3.4.7.32.1 ASN.1 REPRESENTATION

```

ess-time-span-milliseconds ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-time-span-milliseconds:qty"
  ASN-NAME "Ess-time-span-milliseconds"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 66 }
  DEFINITION "The number representing a time span in milliseconds used in
referencing the time of observation data."

```

```
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Ess-time-span-milliseconds ::= INTEGER (1..1000)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "milliseconds"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.32.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-time-span-milliseconds">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="1000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.33 ess-time-span-minutes

3.4.7.33.1 ASN.1 REPRESENTATION

```
ess-time-span-minutes ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-time-span-minutes:qty"
  ASN-NAME "Ess-time-span-minutes"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 67 }
  DEFINITION "The number representing a time span in minutes used in referencing
the time of observation data, or the number of minutes after midnight (UTC) offset."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-time-span-minutes ::= INTEGER (1..1000000)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "minutes"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.33.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-time-span-minutes">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="1000000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.34 ess-time-span-seconds

3.4.7.34.1 ASN.1 REPRESENTATION

```
ess-time-span-seconds ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-time-span-seconds:qty"
  ASN-NAME "Ess-time-span-seconds"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 68 }
  DEFINITION "The number representing a time span in seconds used in referencing
the time of observation data."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-time-span-seconds ::= INTEGER (1..1000000)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "seconds"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.34.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-time-span-seconds">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="1000000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.7.35 ess-uv-index

3.4.7.35.1 ASN.1 REPRESENTATION

```
ess-uv-index ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.Ess-uv-index:qty"
  ASN-NAME "Ess-uv-index"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 69 }
  DEFINITION "A number representing the level of ultraviolet radiation measured."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ess-uv-index ::= INTEGER (0..100)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.7.35.2 XML REPRESENTATION

```
<xs:simpleType name="Ess-uv-index">
  <xs:restriction base="xs:unsignedByte">
    <xs:maxInclusive value="100"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8 Event Class Data Elements

3.4.8.1 event-access-level

3.4.8.1.1 ASN.1 REPRESENTATION

```
event-access-level ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-access-level:cd"
  ASN-NAME "Event-access-level"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 70 }
  DEFINITION "Indicates any restriction on public access to the situation element information."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-access-level ::= ENUMERATED {
    public-domain (1),
    all-agencies (2),
    selected-agencies (3),
    originating-agency (4),
    originating-users-only (5) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.1.2 XML REPRESENTATION

```
<xs:simpleType name="Event-access-level">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="5"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="public domain"/>
        <xs:enumeration value="all agencies"/>
        <xs:enumeration value="selected agencies"/>
        <xs:enumeration value="originating agency"/>
        <xs:enumeration value="originating users only"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.8.2 event-action-log-element-identifier

3.4.8.2.1 ASN.1 REPRESENTATION

```
event-action-log-element-identifier ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-action-log-element-identifier:id"
  ASN-NAME "Event-action-log-element-identifier"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 71 }
  DEFINITION "An identifier of action log elements associated with an event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-action-log-element-identifier ::= INTEGER (1..1024)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.2.2 XML REPRESENTATION

```
<xs:simpleType name="Event-action-log-element-identifier">
  <xs:restriction base="xs:unsignedShort">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="1024"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.3 event-action-type

3.4.8.3.1 ASN.1 REPRESENTATION

```
event-action-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-action-type:cd"
  ASN-NAME "Event-action-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 72 }
  DEFINITION "Specifies the type of action for an action log element."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-action-type ::= ENUMERATED {
    system-new (1),
    system-update (2),
    system-ended (3),
    user-action (4),
```

```

        user-pager-action (5),
        other (6) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.3.2 XML REPRESENTATION

```

<xs:simpleType name="Event-action-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="6"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="system new"/>
        <xs:enumeration value="system update"/>
        <xs:enumeration value="system ended"/>
        <xs:enumeration value="user action"/>
        <xs:enumeration value="user pager action"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.8.4 event-action-request-flag

3.4.8.4.1 ASN.1 REPRESENTATION

```

event-action-request-flag ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-action-request-flag:cd"
  ASN-NAME "Event-action-request-flag"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 73 }
  DEFINITION "Flag that indicates if associated actions will be sent with events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-action-request-flag ::= ENUMERATED {
    send-actions (1),
    do-not-send-actions (2) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.4.2 XML REPRESENTATION

```

<xs:simpleType name="Event-action-request-flag">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="2"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="send actions"/>
        <xs:enumeration value="do not send actions"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```



```

        </xs:restriction>
    </xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.8.5 event-alternate-route-type

3.4.8.5.1 ASN.1 REPRESENTATION

```

event-alternate-route-type ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-alternate-route-type:cd"
    ASN-NAME "Event-alternate-route-type"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 74 }
    DEFINITION "A code representing the type of alternate route."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-alternate-route-type ::= ENUMERATED {
        proposed-alternate-route (1),
        confirmed-alternate-route (2),
        required-detour (3),
        alternate-route-for-destination (4),
        alternate-destination (5),
        other (6) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.5.2 XML REPRESENTATION

```

<xs:simpleType name="Event-alternate-route-type">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="6"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="proposed alternate route"/>
                <xs:enumeration value="confirmed alternate route"/>
                <xs:enumeration value="required detour"/>
                <xs:enumeration value="alternate route for
destination"/>
                <xs:enumeration value="alternate destination"/>
                <xs:enumeration value="other"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.8.6 event-area-name

3.4.8.6.1 ASN.1 REPRESENTATION

```

event-area-name ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-area-name:txt"
    ASN-NAME "Event-area-name"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 75 }
    DEFINITION "Administrative name for a location."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element

```

```
STANDARD "TMDD"
DATA-TYPE "Event-area-name ::= IA5String (SIZE(1..256))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.6.2 XML REPRESENTATION

```
<xs:simpleType name="Event-area-name">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.7 event-category

3.4.8.7.1 ASN.1 REPRESENTATION

```
event-category ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-category:cd"
  ASN-NAME "Event-category"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 76 }
  DEFINITION "Categorizes an event as current or planned."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-category ::= ENUMERATED {
    planned (1),
    current (2),
    forecast (3) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.7.2 XML REPRESENTATION

```
<xs:simpleType name="Event-category">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="planned"/>
        <xs:enumeration value="current"/>
        <xs:enumeration value="forecast"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.8.8 event-description-confidence-level

3.4.8.8.1 ASN.1 REPRESENTATION

```
event-description-confidence-level ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-description-confidence-level:cd"
```

```
ASN-NAME "Event-description-confidence-level"
ASN-OBJECT-IDENTIFIER { tmddDataElements 77 }
DEFINITION "Number indicating the level of confidence in the accuracy of the
event information."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-description-confidence-level ::= ENUMERATED {
    unconfirmed-report (1),
    two-unconfirmed-reports (2),
    three-unconfirmed-reports (3),
    four-or-more-unconfirmed-reports (4),
    provisional-plan (5),
    firm-plan (6),
    official-report-from-scene (7),
    detailed-official-report-from-scene (8),
    detailed-official-reports-covering-whole-area (9),
    legally-enforced-decision (10) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.8.2 XML REPRESENTATION

```
<xs:simpleType name="Event-description-confidence-level">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="10"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="unconfirmed report"/>
        <xs:enumeration value="two unconfirmed reports"/>
        <xs:enumeration value="three unconfirmed reports"/>
        <xs:enumeration value="four or more unconfirmed
reports"/>
        <xs:enumeration value="provisional plan"/>
        <xs:enumeration value="firm plan"/>
        <xs:enumeration value="official report from scene"/>
        <xs:enumeration value="detailed official report from
scene"/>
        <xs:enumeration value="detailed official reports
covering whole area"/>
        <xs:enumeration value="legally enforced decision"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.8.9 event-description-language

3.4.8.9.1 ASN.1 REPRESENTATION

```
event-description-language ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-description-language:txt"
ASN-NAME "Event-description-language"
ASN-OBJECT-IDENTIFIER { tmddDataElements 78 }
DEFINITION "Identifies the language used in the text or comment. Two-character
language code as specified in ISO 639."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
```

```
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-description-language ::= IA5String"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.9.2 XML REPRESENTATION

```
<xs:simpleType name="Event-description-language">
  <xs:restriction base="xs:string"/>
</xs:simpleType>
```

3.4.8.10 event-description-notes-and-comments

3.4.8.10.1 ASN.1 REPRESENTATION

```
event-description-notes-and-comments ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-description-notes-and-comments:txt"
  ASN-NAME "Event-description-notes-and-comments"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 79 }
  DEFINITION "A textual description of a roadway event (incident, planned roadway
  closure, or special event). This data element is also used to describe any ancillary
  textual notes or comments supplemental to the description of a specific roadway
  event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-description-notes-and-comments ::= IA5String (SIZE(1..2048))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.10.2 XML REPRESENTATION

```
<xs:simpleType name="Event-description-notes-and-comments">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="2048"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.11 event-description-priority-level

3.4.8.11.1 ASN.1 REPRESENTATION

```
event-description-priority-level ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-description-priority-level:nbr"
  ASN-NAME "Event-description-priority-level"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 80 }
  DEFINITION "Number indicating the priority given an incident, where 1 is the
  Highest Priority and 10 the Lowest Priority."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-description-priority-level ::= INTEGER (1..10)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.11.2 XML REPRESENTATION

```
<xs:simpleType name="Event-description-priority-level">
  <xs:restriction base="xs:unsignedByte">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="10"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.12 event-description-time

3.4.8.12.1 ASN.1 REPRESENTATION

```
event-description-time ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-description-time:qty"
  ASN-NAME "Event-description-time"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 81 }
  DEFINITION "A time of the day and week associated with an event description,
  e.g. the kick-off time of a ball game. In minutes of the week. A value of 0
  represents midnight on Sunday."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-description-time ::= INTEGER (0..10080)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "minutes"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.12.2 XML REPRESENTATION

```
<xs:simpleType name="Event-description-time">
  <xs:restriction base="xs:int">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="10080"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.13 event-detection-method

3.4.8.13.1 ASN.1 REPRESENTATION

```
event-detection-method ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-detection-method:cd"
  ASN-NAME "Event-detection-method"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 82 }
  DEFINITION "An indicator of how a roadway event was detected."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-detection-method ::= ENUMERATED {
    transit-agency (1),
    traffic-agency (2),
    commercial-traffic-service (3),
    unknown-motorist-observer (4),
    commercial-fleet-operator (5),
    dot (6),
    automobile-club-patrol (7),
    spotter-aircraft (8),
    breakdown-service-private (9),
    camera-observation (10),
    emergency-service-patrol-non-police (11),
    inductive-loop-monitoring-station (12),
    microwave-monitoring-station (13),
    mobile-platform-measurement (14),
    mobile-telephone-caller-previously-unknown (15),
```

```

    police-patrol (16),
    public-and-private-utilities (17),
    road-condition-model (18),
    registered-motorist-observer (19),
    roadside-telephone-caller (20),
    snowplow-report (21),
    traffic-monitoring-station (22),
    video-processing-monitoring-station (23),
    vehicle-probe-measurement (24),
    weather-model (25) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.13.2 XML REPRESENTATION

```

<xs:simpleType name="Event-detection-method">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="25"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="transit agency"/>
        <xs:enumeration value="traffic agency"/>
        <xs:enumeration value="commercial traffic service"/>
        <xs:enumeration value="unknown motorist observer"/>
        <xs:enumeration value="commercial fleet operator"/>
        <xs:enumeration value="dot"/>
        <xs:enumeration value="automobile club patrol"/>
        <xs:enumeration value="spotter aircraft"/>
        <xs:enumeration value="breakdown service private"/>
        <xs:enumeration value="camera observation"/>
        <xs:enumeration value="emergency service patrol non
police"/>
        <xs:enumeration value="inductive loop monitoring
station"/>
        <xs:enumeration value="microwave monitoring
station"/>
        <xs:enumeration value="mobile platform
measurement"/>
        <xs:enumeration value="mobile telephone caller
previously unknown"/>
        <xs:enumeration value="police patrol"/>
        <xs:enumeration value="public and private
utilities"/>
        <xs:enumeration value="road condition model"/>
        <xs:enumeration value="registered motorist
observer"/>
        <xs:enumeration value="roadside telephone caller"/>
        <xs:enumeration value="snowplow report"/>
        <xs:enumeration value="traffic monitoring station"/>
        <xs:enumeration value="video processing monitoring
station"/>
        <xs:enumeration value="vehicle probe measurement"/>
        <xs:enumeration value="weather model"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.8.14 event-effective-period-qualifier

3.4.8.14.1 ASN.1 REPRESENTATION

```
event-effective-period-qualifier ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-effective-period-qualifier:cd"
    ASN-NAME "Event-effective-period-qualifier"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 83 }
    DEFINITION "A named period within which the situation element applies."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-effective-period-qualifier ::= ENUMERATED {
        not-specified (1),
        morning (2),
        afternoon (3),
        evening (4),
        night (5),
        day-time (6),
        off-peak-periods (7),
        at-peak-periods (8),
        until-further-notice (9),
        morning-peak (10),
        afternoon-peak (11),
        middayperiods (12) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.14.2 XML REPRESENTATION

```
<xs:simpleType name="Event-effective-period-qualifier">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="12"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="not specified"/>
        <xs:enumeration value="morning"/>
        <xs:enumeration value="afternoon"/>
        <xs:enumeration value="evening"/>
        <xs:enumeration value="night"/>
        <xs:enumeration value="day time"/>
        <xs:enumeration value="off peak periods"/>
        <xs:enumeration value="at peak periods"/>
        <xs:enumeration value="until further notice"/>
        <xs:enumeration value="morning peak"/>
        <xs:enumeration value="afternoon peak"/>
        <xs:enumeration value="middayperiods"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.8.15 event-element-identifier

3.4.8.15.1 ASN.1 REPRESENTATION

```
event-element-identifier ITS-DATA-ELEMENT ::= {
```

```

DESCRIPTIVE-NAME "Event.Event-element-identifier:id"
ASN-NAME "Event-element-identifier"
ASN-OBJECT-IDENTIFIER { tmddDataElements 84 }
DEFINITION      "A sequential reference to successive snapshots of an event.  Higher
sequence numbers describe the situation as it is currently predicted to evolve in
successively later time periods."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-element-identifier ::= INTEGER (1..999)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.8.15.2 XML REPRESENTATION

```

<xs:simpleType name="Event-element-identifier">
  <xs:restriction base="xs:unsignedShort">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="999"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.8.16 event-hazmat-code

3.4.8.16.1 ASN.1 REPRESENTATION

```

event-hazmat-code ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-hazmat-code:nbr"
ASN-NAME "Event-hazmat-code"
ASN-OBJECT-IDENTIFIER { tmddDataElements 208 }
DEFINITION      "The CFR Title 49 hazardous material code for any observed or
detected hazardous materials at an incident."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-hazmat-code ::= INTEGER (1..9999)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.8.16.2 XML REPRESENTATION

```

<xs:simpleType name="Event-hazmat-code">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="9999"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.8.17 event-headline-element

3.4.8.17.1 ASN.1 REPRESENTATION

```

event-headline-element ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-headline-element:id"
ASN-NAME "Event-headline-element"
ASN-OBJECT-IDENTIFIER { tmddDataElements 85 }
DEFINITION      "Specifies which event type is the headline or key event type for an
event."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

```



```
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-headline-element ::= INTEGER (1..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.17.2 XML REPRESENTATION

```
<xs:simpleType name="Event-headline-element">
  <xs:restriction base="xs:unsignedByte">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="255"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.18 event-holiday-day

3.4.8.18.1 ASN.1 REPRESENTATION

```
event-holiday-day ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-holiday-day:nbr"
  ASN-NAME "Event-holiday-day"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 86 }
  DEFINITION "Day number on which a holiday falls on, where 1 is Sunday, 2 is
Monday, etc., and 7 is Saturday."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-holiday-day ::= INTEGER (1..7)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.18.2 XML REPRESENTATION

```
<xs:simpleType name="Event-holiday-day">
  <xs:restriction base="xs:unsignedByte">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="7"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.19 event-incident-humans-involved-count

3.4.8.19.1 ASN.1 REPRESENTATION

```
event-incident-humans-involved-count ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-incident-humans-involved-count:qty"
  ASN-NAME "Event-incident-humans-involved-count"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 87 }
  DEFINITION "The number of known injuries or fatalities present at an incident at
the time of report."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-incident-humans-involved-count ::= INTEGER (0..65535)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "persons"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.19.2 XML REPRESENTATION

```
<xs:simpleType name="Event-incident-humans-involved-count">
  <xs:restriction base="xs:unsignedShort"/>
</xs:simpleType>
```

3.4.8.20 event-incident-status

3.4.8.20.1 ASN.1 REPRESENTATION

```
event-incident-status ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-incident-status:cd"
  ASN-NAME "Event-incident-status"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 88 }
  DEFINITION "A code which indicates a status of the incident."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-incident-status ::= ENUMERATED {
    planned (1),
    forecast (2),
    contingency-plan (3),
    response-plan-activated (4),
    reported (5),
    confirmed (6),
    responding (7),
    current (8),
    updated (9),
    clearing (10),
    ended (11),
    delete (12),
    cancelled (13),
    postponed (14),
    reopened (15),
    new (16),
    other (17) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.20.2 XML REPRESENTATION

```
<xs:simpleType name="Event-incident-status">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="17"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="planned"/>
        <xs:enumeration value="forecast"/>
        <xs:enumeration value="contingency plan"/>
        <xs:enumeration value="response plan activated"/>
        <xs:enumeration value="reported"/>
        <xs:enumeration value="confirmed"/>
        <xs:enumeration value="responding"/>
        <xs:enumeration value="current"/>
        <xs:enumeration value="updated"/>
        <xs:enumeration value="clearing"/>
        <xs:enumeration value="ended"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        <xs:enumeration value="delete"/>
        <xs:enumeration value="cancelled"/>
        <xs:enumeration value="postponed"/>
        <xs:enumeration value="reopened"/>
        <xs:enumeration value="new"/>
        <xs:enumeration value="other"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.8.21 event-incident-vehicles-involved-count

3.4.8.21.1 ASN.1 REPRESENTATION

```

event-incident-vehicles-involved-count ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-incident-vehicles-involved-count:qty"
    ASN-NAME "Event-incident-vehicles-involved-count"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 89 }
    DEFINITION "The total number of vehicles involved in an incident."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-incident-vehicles-involved-count ::= INTEGER (0..255)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "vehicles"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.21.2 XML REPRESENTATION

```

<xs:simpleType name="Event-incident-vehicles-involved-count">
    <xs:restriction base="xs:unsignedByte"/>
</xs:simpleType>

```

3.4.8.22 event-impact-level

3.4.8.22.1 ASN.1 REPRESENTATION

```

event-impact-level ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-impact-level:nbr"
    ASN-NAME "Event-impact-level"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 90 }
    DEFINITION "A number indicating the impact of an event on the roadway. A value
    of 1 has the lowest relative impact and a value of 10 has a impact beyond the region.
    A value of 0 is reserved for the owner organization only."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-impact-level ::= INTEGER (0..10)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.22.2 XML REPRESENTATION

```

<xs:simpleType name="Event-impact-level">
    <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="10"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.8.23 event-landmark-name

3.4.8.23.1 ASN.1 REPRESENTATION

```
event-landmark-name ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Event.Event-landmark-name:txt"  
  ASN-NAME "Event-landmark-name"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 91 }  
  DEFINITION "The name of landmark or point within a landmark."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Event-landmark-name ::= IA5String (SIZE(1..256))"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }  
}
```

3.4.8.23.2 XML REPRESENTATION

```
<xs:simpleType name="Event-landmark-name">  
  <xs:restriction base="xs:string">  
    <xs:minLength value="1"/>  
    <xs:maxLength value="256"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.8.24 event-length-affected

3.4.8.24.1 ASN.1 REPRESENTATION

```
event-length-affected ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Event.Event-length-affected:qty"  
  ASN-NAME "Event-length-affected"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 92 }  
  DEFINITION "Length of roadway affected by a situation element; e.g. length of a  
  queue."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Event-length-affected ::= INTEGER (0..1000)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "tenths of kilometers"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }  
}
```

3.4.8.24.2 XML REPRESENTATION

```
<xs:simpleType name="Event-length-affected">  
  <xs:restriction base="xs:unsignedShort">  
    <xs:maxInclusive value="1000"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.8.25 event-link-categories

3.4.8.25.1 ASN.1 REPRESENTATION

```
event-link-categories ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Event.Event-link-categories:cd"  
  ASN-NAME "Event-link-categories"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 93 }  
}
```

```

DEFINITION      "Request filter to limit a request to events affecting specific
hierarchical roadway types."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-link-categories ::= ENUMERATED {
    interstates (1),
    us-highways-and-above (2),
    state-highways-and-above (3),
    state-aid-system-and-above (4),
    arterials-and-above (5),
    collectors-and-above (6),
    county-roads-and-above (7),
    local-roads-and-above (8),
    all-available (9),
    other (10) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.25.2 XML REPRESENTATION

```

<xs:simpleType name="Event-link-categories">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="10"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="interstates"/>
        <xs:enumeration value="us highways and above"/>
        <xs:enumeration value="state highways and above"/>
        <xs:enumeration value="state aid system and above"/>
        <xs:enumeration value="arterials and above"/>
        <xs:enumeration value="collectors and above"/>
        <xs:enumeration value="county roads and above"/>
        <xs:enumeration value="local roads and above"/>
        <xs:enumeration value="all available"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.8.26 event-location-area-identifier

3.4.8.26.1 ASN.1 REPRESENTATION

```

event-location-area-identifier ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-location-area-identifier:id"
ASN-NAME "Event-location-area-identifier"
ASN-OBJECT-IDENTIFIER { tmddDataElements 94 }
DEFINITION      "Represents a defined area. When used as part of a route reference,
identifies the state or county whose road number is referenced. Format is: SSSCCPPPPP
where SS = State FIPS (01 to 99); CCC = County FIPS (001 to 999) and PPPPP = Place
FIPS (00001 to 99999), as defined in Federal Information Processing Standard (FIPS)
Publication 5-2, FIPS 6-4, and FIPS 55-3. Note that these standards have been
superseded by the International Committee for Information Technology Standards
(INCITS) 31:2009."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

```

```
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-location-area-identifier ::= IA5String (SIZE(10))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.26.2 XML REPRESENTATION

```
<xs:simpleType name="Event-location-area-identifier">
  <xs:restriction base="xs:string">
    <xs:length value="10"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.27 event-location-coordinates-altitude

3.4.8.27.1 ASN.1 REPRESENTATION

```
event-location-coordinates-altitude ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-location-coordinates-altitude:qty"
ASN-NAME "Event-location-coordinates-altitude"
ASN-OBJECT-IDENTIFIER { tmddDataElements 95 }
DEFINITION "The altitude above sea level. The term altitude is used in place of
the more common term elevation for consistency with LRMS."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-location-coordinates-altitude ::= INTEGER (-8191..57344)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "tenths of a meter"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.27.2 XML REPRESENTATION

```
<xs:simpleType name="Event-location-coordinates-altitude">
  <xs:restriction base="xs:int">
    <xs:minInclusive value="-8191"/>
    <xs:maxInclusive value="57344"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.28 event-location-landmark-type

3.4.8.28.1 ASN.1 REPRESENTATION

```
event-location-landmark-type ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-location-landmark-type:cd"
ASN-NAME "Event-location-landmark-type"
ASN-OBJECT-IDENTIFIER { tmddDataElements 96 }
DEFINITION "A code which represents the type of landmark being identified."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-location-landmark-type ::= ENUMERATED {
  entrance-ramp (2),
  exit-ramp (3),
  rest-area (4),
  intersection (5),
  rail-station (6),
  rail-yard (7),

```

```

rail-stop (8),
airport (9),
bridge (10),
tunnel (11),
park-and-ride-facility (12),
toll-plaza (13),
bus-station (14),
bus-stop (15),
building (16),
town (17),
city (18),
river (19),
lake (20),
shore (21),
harbor (22),
park (23),
venue (24),
school (25),
hospital (26),
sport-stadium (27),
weigh-station (28),
police-station (29),
fire-station (30),
reservoir-dam (31),
power-station (32),
military-port (33),
church-and-worship (34),
mine (35),
oil-fields (36),
shopping-mall (37),
tourist-attraction (38),
cemetery (39),
pier (40),
canal (41),
other (42) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.4.8.28.2 XML REPRESENTATION

```

<xs:simpleType name="Event-location-landmark-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="2"/>
        <xs:maxInclusive value="42"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="entrance ramp"/>
        <xs:enumeration value="exit ramp"/>
        <xs:enumeration value="rest area"/>
        <xs:enumeration value="intersection"/>
        <xs:enumeration value="rail station"/>
        <xs:enumeration value="rail yard"/>
        <xs:enumeration value="rail stop"/>
        <xs:enumeration value="airport"/>
        <xs:enumeration value="bridge"/>
        <xs:enumeration value="tunnel"/>
        <xs:enumeration value="park and ride facility"/>
        <xs:enumeration value="toll plaza"/>
        <xs:enumeration value="bus station"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

```

        <xs:enumeration value="bus stop"/>
        <xs:enumeration value="building"/>
        <xs:enumeration value="town"/>
        <xs:enumeration value="city"/>
        <xs:enumeration value="river"/>
        <xs:enumeration value="lake"/>
        <xs:enumeration value="shore"/>
        <xs:enumeration value="harbor"/>
        <xs:enumeration value="park"/>
        <xs:enumeration value="venue"/>
        <xs:enumeration value="school"/>
        <xs:enumeration value="hospital"/>
        <xs:enumeration value="sport stadium"/>
        <xs:enumeration value="weigh station"/>
        <xs:enumeration value="police station"/>
        <xs:enumeration value="fire station"/>
        <xs:enumeration value="reservoir dam"/>
        <xs:enumeration value="power station"/>
        <xs:enumeration value="military port"/>
        <xs:enumeration value="church and worship"/>
        <xs:enumeration value="mine"/>
        <xs:enumeration value="oil fields"/>
        <xs:enumeration value="shopping mall"/>
        <xs:enumeration value="tourist attraction"/>
        <xs:enumeration value="cemetery"/>
        <xs:enumeration value="pier"/>
        <xs:enumeration value="canal"/>
        <xs:enumeration value="other"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.8.29 event-location-rank

3.4.8.29.1 ASN.1 REPRESENTATION

```

event-location-rank ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-location-rank:qty"
    ASN-NAME "Event-location-rank"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 97 }
    DEFINITION "Ranking of a location 10 being highest. A value of 0 is reserved
    for location names used by the owner organization only."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-location-rank ::= INTEGER (0..10)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.29.2 XML REPRESENTATION

```

<xs:simpleType name="Event-location-rank">
    <xs:restriction base="xs:unsignedByte">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="10"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.8.30 event-message-number

3.4.8.30.1 ASN.1 REPRESENTATION


```
event-message-number ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-message-number:id"
  ASN-NAME "Event-message-number"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 98 }
  DEFINITION "A unique identifier of a specific message instance."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-message-number ::= INTEGER (1..4294967295)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.30.2 XML REPRESENTATION

```
<xs:simpleType name="Event-message-number">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="1"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.31 event-message-type-identifier

3.4.8.31.1 ASN.1 REPRESENTATION

```
event-message-type-identifier ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-message-type-identifier:id"
  ASN-NAME "Event-message-type-identifier"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 211 }
  DEFINITION "Identifies the type of information being requested. A value of 1
  represents the full event update message, and a value of 2 for the event index
  message."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-message-type-identifier ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.31.2 XML REPRESENTATION

```
<xs:simpleType name="Event-message-type-identifier">
  <xs:restriction base="xs:unsignedByte"/>
</xs:simpleType>
```

3.4.8.32 event-message-type-version

3.4.8.32.1 ASN.1 REPRESENTATION

```
event-message-type-version ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-message-type-version:id"
  ASN-NAME "Event-message-type-version"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 99 }
  DEFINITION "Identifies the version of the Full Event Update (FEU) message
  structure being used. A value of 1 represents Version 1 of the FEU is part of TMDD
  V2.1. A value of 2 represents Version 2 of the FEU is part of TMDD V3.0x."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-message-type-version ::= INTEGER (0..255)"
```

```
FORMAT "ASN.1 encoding"  
UNIT-OF-MEASURE ""  
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.32.2 XML REPRESENTATION

```
<xs:simpleType name="Event-message-type-version">  
  <xs:restriction base="xs:unsignedByte"/>  
</xs:simpleType>
```

3.4.8.33 event-parking-number-of-spaces

3.4.8.33.1 ASN.1 REPRESENTATION

```
event-parking-number-of-spaces ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Event.Event-parking-number-of-spaces:qty"  
  ASN-NAME "Event-parking-number-of-spaces"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 100 }  
  DEFINITION "A quantifier describing number of parking spaces available, that can  
  be added to a description."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Event-parking-number-of-spaces ::= INTEGER (0..25000)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "parking spaces"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.33.2 XML REPRESENTATION

```
<xs:simpleType name="Event-parking-number-of-spaces">  
  <xs:restriction base="xs:unsignedShort">  
    <xs:maxInclusive value="25000"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.8.34 event-parking-occupancy

3.4.8.34.1 ASN.1 REPRESENTATION

```
event-parking-occupancy ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Event.Event-parking-occupancy:pct"  
  ASN-NAME "Event-parking-occupancy"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 101 }  
  DEFINITION "The percentage occupancy of a parking lot."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Event-parking-occupancy ::= INTEGER (0..100)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.34.2 XML REPRESENTATION

```
<xs:simpleType name="Event-parking-occupancy">  
  <xs:restriction base="xs:unsignedByte">  
    <xs:maxInclusive value="100"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.8.35 event-placard-code

3.4.8.35.1 ASN.1 REPRESENTATION

```
event-placard-code ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Event.Event-placard-code:nbr"  
  ASN-NAME "Event-placard-code"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 209 }  
  DEFINITION "The numerical code representing the USDOT Placard code that is  
  observed at an incident."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Event-placard-code ::= INTEGER (1..9999)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.35.2 XML REPRESENTATION

```
<xs:simpleType name="Event-placard-code">  
  <xs:restriction base="xs:unsignedInt">  
    <xs:minInclusive value="1"/>  
    <xs:maxInclusive value="9999"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.8.36 event-placard-displayed-code

3.4.8.36.1 ASN.1 REPRESENTATION

```
event-placard-displayed-code ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Event.Event-placard-displayed-code:cd"  
  ASN-NAME "Event-placard-displayed-code"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 210 }  
  DEFINITION "A code indicating if whether the conveyance carrying the observed or  
  detected hazardous material was properly placarded for the material."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Event-placard-displayed-code ::= ENUMERATED {  
    yes (1),  
    no (2),  
    unknown (3) }"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.36.2 XML REPRESENTATION

```
<xs:simpleType name="Event-placard-displayed-code">  
  <xs:union>  
    <xs:simpleType>  
      <xs:restriction base="xs:unsignedInt">  
        <xs:minInclusive value="1"/>  
        <xs:maxInclusive value="3"/>  
      </xs:restriction>  
    </xs:simpleType>  
    <xs:simpleType>  
      <xs:restriction base="xs:string">  
        <xs:enumeration value="yes"/>  
        <xs:enumeration value="no"/>  
      </xs:restriction>  
    </xs:simpleType>  
  </xs:union>  
</xs:simpleType>
```

```

        <xs:enumeration value="unknown"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.8.37 event-planned-event-class

3.4.8.37.1 ASN.1 REPRESENTATION

```

event-planned-event-class ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-planned-event-class:cd"
    ASN-NAME "Event-planned-event-class"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 102 }
    DEFINITION "Categorizes a planned event as incident, construction, or special
    event."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-planned-event-class ::= ENUMERATED {
        incident (1),
        construction (2),
        event (3),
        other (4) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.37.2 XML REPRESENTATION

```

<xs:simpleType name="Event-planned-event-class">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="4"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="incident"/>
                <xs:enumeration value="construction"/>
                <xs:enumeration value="event"/>
                <xs:enumeration value="other"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.8.38 event-proportion-affected

3.4.8.38.1 ASN.1 REPRESENTATION

```

event-proportion-affected ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-proportion-affected:pct"
    ASN-NAME "Event-proportion-affected"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 103 }
    DEFINITION "Proportion of a roadway or area affected by a situation."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-proportion-affected ::= INTEGER (0..100)"
    FORMAT "ASN.1 encoding"

```

```
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.38.2 XML REPRESENTATION

```
<xs:simpleType name="Event-proportion-affected">
  <xs:restriction base="xs:unsignedByte">
    <xs:maxInclusive value="100"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.39 event-report-medium

3.4.8.39.1 ASN.1 REPRESENTATION

```
event-report-medium ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-report-medium:cd"
  ASN-NAME "Event-report-medium"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 105 }
  DEFINITION "The dissemination medium used for the associated report text."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-report-medium ::= ENUMERATED {
    operator-terminal (1),
    operator-pager (2),
    agency-fax (3),
    public-web-page (4),
    wap-web-page (5),
    public-pager (6),
    a511-speech (7),
    har-speech (8),
    dms-display (9),
    other (10) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.39.2 XML REPRESENTATION

```
<xs:simpleType name="Event-report-medium">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="10"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="operator terminal"/>
        <xs:enumeration value="operator pager"/>
        <xs:enumeration value="agency fax"/>
        <xs:enumeration value="public web page"/>
        <xs:enumeration value="wap web page"/>
        <xs:enumeration value="public pager"/>
        <xs:enumeration value="a511 speech"/>
        <xs:enumeration value="har speech"/>
        <xs:enumeration value="dms display"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```
</xs:union>
</xs:simpleType>
```

3.4.8.40 event-request-focus

3.4.8.40.1 ASN.1 REPRESENTATION

```
event-request-focus ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-request-focus:cd"
  ASN-NAME "Event-request-focus"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 106 }
  DEFINITION "Request filter to limit a request of specific or all events."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-request-focus ::= ENUMERATED {
    specific-events (1),
    specific-response-plans (2),
    all-current-events (3),
    all-event-updates (4),
    all-response-plans (5),
    other (6) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.40.2 XML REPRESENTATION

```
<xs:simpleType name="Event-request-focus">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="6"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="specific events"/>
        <xs:enumeration value="specific response plans"/>
        <xs:enumeration value="all current events"/>
        <xs:enumeration value="all event updates"/>
        <xs:enumeration value="all response plans"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.8.41 event-schedule-element-identifier

3.4.8.41.1 ASN.1 REPRESENTATION

```
event-schedule-element-identifier ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-schedule-element-identifier:id"
  ASN-NAME "Event-schedule-element-identifier"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 107 }
  DEFINITION "Identifier of schedule element for a planned event."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-schedule-element-identifier ::= INTEGER (1..999)"
  FORMAT "ASN.1 encoding"
```

```
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.41.2 XML REPRESENTATION

```
<xs:simpleType name="Event-schedule-element-identifier">
  <xs:restriction base="xs:unsignedShort">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="999"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.42 event-severity

3.4.8.42.1 ASN.1 REPRESENTATION

```
event-severity ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-severity:cd"
  ASN-NAME "Event-severity"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 108 }
  DEFINITION "A code which represents the severity of an incident."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-severity ::= ENUMERATED {
    none (1),
    minor (2),
    major (3),
    natural-disaster (4),
    other (5) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.42.2 XML REPRESENTATION

```
<xs:simpleType name="Event-severity">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="5"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="none"/>
        <xs:enumeration value="minor"/>
        <xs:enumeration value="major"/>
        <xs:enumeration value="natural disaster"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.8.43 event-signed-destination

3.4.8.43.1 ASN.1 REPRESENTATION

```
event-signed-destination ITS-DATA-ELEMENT ::= {
```

```

DESCRIPTIVE-NAME "Event.Event-signed-destination:txt"
ASN-NAME "Event-signed-destination"
ASN-OBJECT-IDENTIFIER { tmddDataElements 109 }
DEFINITION "A destination provided by a sign at a point along a roadway."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-signed-destination ::= IA5String (SIZE(1..256))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.43.2 XML REPRESENTATION

```

<xs:simpleType name="Event-signed-destination">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.8.44 event-speed-vehicle-estimated

3.4.8.44.1 ASN.1 REPRESENTATION

```

event-speed-vehicle-estimated ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-speed-vehicle-estimated:rt"
ASN-NAME "Event-speed-vehicle-estimated"
ASN-OBJECT-IDENTIFIER { tmddDataElements 110 }
DEFINITION "Estimated or expected average speed of a vehicle, e.g. a snowplow or
a dangerous driver."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-speed-vehicle-estimated ::= INTEGER (0..300)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "kilometers per hour"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.44.2 XML REPRESENTATION

```

<xs:simpleType name="Event-speed-vehicle-estimated">
  <xs:restriction base="xs:unsignedShort">
    <xs:maxInclusive value="300"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.8.45 event-timeline-estimated-duration

3.4.8.45.1 ASN.1 REPRESENTATION

```

event-timeline-estimated-duration ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Event-timeline-estimated-duration:qty"
ASN-NAME "Event-timeline-estimated-duration"
ASN-OBJECT-IDENTIFIER { tmddDataElements 111 }
DEFINITION "The estimated remaining time duration of a roadway event, measured
from the update time."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Event-timeline-estimated-duration ::= INTEGER (0..4294967295)"

```



```
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "minutes"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.45.2 XML REPRESENTATION

```
<xs:simpleType name="Event-timeline-estimated-duration">
  <xs:restriction base="xs:unsignedInt"/>
</xs:simpleType>
```

3.4.8.46 event-timeline-schedule-days-of-the-week

3.4.8.46.1 ASN.1 REPRESENTATION

```
event-timeline-schedule-days-of-the-week ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-timeline-schedule-days-of-the-week:cd"
  ASN-NAME "Event-timeline-schedule-days-of-the-week"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 112 }
  DEFINITION "Days of the week during which a roadway event is in effect, in terms
  of local time."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-timeline-schedule-days-of-the-week ::= ENUMERATED {
    sunday (1),
    monday (2),
    tuesday (3),
    wednesday (4),
    thursday (5),
    friday (6),
    saturday (7) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.46.2 XML REPRESENTATION

```
<xs:simpleType name="Event-timeline-schedule-days-of-the-week">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="7"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="sunday"/>
        <xs:enumeration value="monday"/>
        <xs:enumeration value="tuesday"/>
        <xs:enumeration value="wednesday"/>
        <xs:enumeration value="thursday"/>
        <xs:enumeration value="friday"/>
        <xs:enumeration value="saturday"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.8.47 event-timeline-schedule-times

3.4.8.47.1 ASN.1 REPRESENTATION

```
event-timeline-schedule-times ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-timeline-schedule-times:txt"
  ASN-NAME "Event-timeline-schedule-times"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 113 }
  DEFINITION          "Time span during which a roadway event is in effect, expressed in
  local time. Represented as HHMMHHMM, where HH=00 through 23; MM=00 through 59. HH
  represents the hours, and MM the minutes."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-timeline-schedule-times ::= IA5String (SIZE(8))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.47.2 XML REPRESENTATION

```
<xs:simpleType name="Event-timeline-schedule-times">
  <xs:restriction base="xs:string">
    <xs:length value="8"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.8.48 event-transit-direction-of-travel

3.4.8.48.1 ASN.1 REPRESENTATION

```
event-transit-direction-of-travel ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.Event-transit-direction-of-travel:cd"
  ASN-NAME "Event-transit-direction-of-travel"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 114 }
  DEFINITION          "Transit incident direction of travel code."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Event-transit-direction-of-travel ::= ENUMERATED {
    n (1),
    ne (2),
    e (3),
    se (4),
    s (5),
    sw (6),
    w (7),
    nw (8),
    not-directional (9),
    positive-direction (10),
    negative-direction (11),
    both-directions (12),
    unknown (13),
    other (14) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.8.48.2 XML REPRESENTATION

```
<xs:simpleType name="Event-transit-direction-of-travel">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="14"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="n"/>
            <xs:enumeration value="ne"/>
            <xs:enumeration value="e"/>
            <xs:enumeration value="se"/>
            <xs:enumeration value="s"/>
            <xs:enumeration value="sw"/>
            <xs:enumeration value="w"/>
            <xs:enumeration value="nw"/>
            <xs:enumeration value="not directional"/>
            <xs:enumeration value="positive direction"/>
            <xs:enumeration value="negative direction"/>
            <xs:enumeration value="both directions"/>
            <xs:enumeration value="unknown"/>
            <xs:enumeration value="other"/>
        </xs:restriction>
    </xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.8.49 event-update

3.4.8.49.1 ASN.1 REPRESENTATION

```

event-update ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Event-update:qty"
    ASN-NAME "Event-update"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 115 }
    DEFINITION "The number of times the log has been modified for a specific roadway event."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Event-update ::= INTEGER (1..65535)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "updates"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.8.49.2 XML REPRESENTATION

```

<xs:simpleType name="Event-update">
    <xs:restriction base="xs:unsignedShort">
        <xs:minInclusive value="1"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.9 Gate Class Data Elements

3.4.9.1 gate-request-command

3.4.9.1.1 ASN.1 REPRESENTATION

```

gate-request-command ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Gate.Gate-request-command:cd"
    ASN-NAME "Gate-request-command"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 116 }
    DEFINITION "A request command from one TMC to another to open or close a gate."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
}

```

```
DATA-TYPE "Gate-request-command ::= ENUMERATED {
    open-gate (1),
    close-gate (2),
    other (3) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.9.1.2 XML REPRESENTATION

```
<xs:simpleType name="Gate-request-command">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="open gate"/>
        <xs:enumeration value="close gate"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.9.2 gate-status

3.4.9.2.1 ASN.1 REPRESENTATION

```
gate-status ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Gate.Gate-status:cd"
  ASN-NAME "Gate-status"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 117 }
  DEFINITION "Status indicator which shows whether gate is opened or closed."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Gate-status ::= ENUMERATED {
    gate-open (1),
    gate-closed (2),
    gate-partially-opened-closed (3),
    other (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.9.2.2 XML REPRESENTATION

```
<xs:simpleType name="Gate-status">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="gate open"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        <xs:enumeration value="gate closed"/>
        <xs:enumeration value="gate partially opened
closed"/>
        <xs:enumeration value="other"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.10 Global Class Data Elements

3.4.10.1 binary-flag

3.4.10.1.1 ASN.1 REPRESENTATION

```

binary-flag ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Global.Binary-flag:cd"
    ASN-NAME "Binary-flag"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 118 }
    DEFINITION "This is a code representing a boolean value of 'yes' and 'no'."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Binary-flag ::= ENUMERATED {
        yes (1),
        no (2) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.10.1.2 XML REPRESENTATION

```

<xs:simpleType name="Binary-flag">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="2"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="yes"/>
                <xs:enumeration value="no"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.10.2 date

3.4.10.2.1 ASN.1 REPRESENTATION

```

date ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Global.Date:txt"
    ASN-NAME "Date"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 119 }
    DEFINITION "A representation of date. Format as: YYYYMMDD where YYYY is the
year; MM the month, range 01 to 12, DD the day, range 01 to 31. Use zero for MM and DD
when not applicable."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"

```

```
DATA-TYPE "Date ::= IA5String (SIZE(8))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.10.2.2 XML REPRESENTATION

```
<xs:simpleType name="Date">
  <xs:restriction base="xs:string">
    <xs:length value="8"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.10.3 time

3.4.10.3.1 ASN.1 REPRESENTATION

```
time ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.Time:txt"
  ASN-NAME "Time"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 120 }
  DEFINITION "A representation of time. Format: HHMMSSssss Use 24 hour notation.
  HH represents hours (00 to 23); MM represents minutes (00 to 59); SS represents
  seconds (00 to 59, or 00 if NA); ssss represents decimal seconds (0000 to 9999)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Time ::= IA5String (SIZE(6..10))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.10.3.2 XML REPRESENTATION

```
<xs:simpleType name="Time">
  <xs:restriction base="xs:string">
    <xs:minLength value="6"/>
    <xs:maxLength value="10"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.10.4 time-offset-utc

3.4.10.4.1 ASN.1 REPRESENTATION

```
time-offset-utc ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.Time-offset-utc:txt"
  ASN-NAME "Time-offset-utc"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 121 }
  DEFINITION "Time zone offset for local time from UTC. Format as: -HHMM or +HHMM
  according to hemisphere. Plus refers to a western hemisphere offset, and minus to the
  eastern hemisphere. HH hour (-14 to +12); MM minutes (00 to 59)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Time-offset-utc ::= IA5String (SIZE(5))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.10.4.2 XML REPRESENTATION

```
<xs:simpleType name="Time-offset-utc">
  <xs:restriction base="xs:string">
    <xs:length value="5"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.10.5 url-reference

3.4.10.5.1 ASN.1 REPRESENTATION

```
url-reference ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.Url-reference:txt"
  ASN-NAME "Url-reference"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 122 }
  DEFINITION          "Uniform Resource Locator for where additional information for this
  device or entity can be found. Additional information may be a map, status
  information or maintenance information."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Url-reference ::= IA5String (SIZE(1..128))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.10.5.2 XML REPRESENTATION

```
<xs:simpleType name="Url-reference">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="128"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.10.6 url-reference-type

3.4.10.6.1 ASN.1 REPRESENTATION

```
url-reference-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.Url-reference-type:txt"
  ASN-NAME "Url-reference-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 123 }
  DEFINITION          "Medium, such as a file type or map type that the Uniform Resource
  Locator points to."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Url-reference-type ::= IA5String (SIZE(1..128))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.10.6.2 XML REPRESENTATION

```
<xs:simpleType name="Url-reference-type">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="128"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.11 HAR Class Data Elements

3.4.11.1 har-call-sign

3.4.11.1.1 ASN.1 REPRESENTATION

```
har-call-sign ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "HAR.Har-call-sign:txt"  
  ASN-NAME "Har-call-sign"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 124 }  
  DEFINITION "HAR 4 character call sign."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Har-call-sign ::= IA5String (SIZE(1..4))"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.11.1.2 XML REPRESENTATION

```
<xs:simpleType name="Har-call-sign">  
  <xs:restriction base="xs:string">  
    <xs:minLength value="1"/>  
    <xs:maxLength value="4"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.11.2 har-characteristics

3.4.11.2.1 ASN.1 REPRESENTATION

```
har-characteristics ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "HAR.Har-characteristics:txt"  
  ASN-NAME "Har-characteristics"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 125 }  
  DEFINITION "Text description of pertinent capabilities of a HAR device including  
  frequency, range or other information."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Har-characteristics ::= IA5String (SIZE(1..256))"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.11.2.2 XML REPRESENTATION

```
<xs:simpleType name="Har-characteristics">  
  <xs:restriction base="xs:string">  
    <xs:minLength value="1"/>  
    <xs:maxLength value="256"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.11.3 har-message

3.4.11.3.1 ASN.1 REPRESENTATION

```
har-message ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "HAR.Har-message:txt"
```



```
ASN-NAME "Har-message"
ASN-OBJECT-IDENTIFIER { tmddDataElements 126 }
DEFINITION "The message currently being announced or requested to play on an HAR."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Har-message ::= IA5String (SIZE(1..1024))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.11.3.2 XML REPRESENTATION

```
<xs:simpleType name="Har-message">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="1024"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.11.4 har-request-command

3.4.11.4.1 ASN.1 REPRESENTATION

```
har-request-command ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "HAR.Har-request-command:cd"
  ASN-NAME "Har-request-command"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 127 }
  DEFINITION "A request command from one TMC to another for HAR action."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Har-request-command ::= ENUMERATED {
    put-up-custom-message (1),
    put-up-a-library-message (2),
    remove-message (3),
    other (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.11.4.2 XML REPRESENTATION

```
<xs:simpleType name="Har-request-command">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="put up custom message"/>
        <xs:enumeration value="put up a library message"/>
        <xs:enumeration value="remove message"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.12 IntersectionSignal Class Data Elements

3.4.12.1 intersection-actuation-mode

3.4.12.1.1 ASN.1 REPRESENTATION

```
intersection-actuation-mode ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.Intersection-actuation-mode:cd"
  ASN-NAME "Intersection-actuation-mode"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 128 }
  DEFINITION "The current actuation mode of the planned signal timing mode."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Intersection-actuation-mode ::= ENUMERATED {
    unknown (1),
    other (2),
    fixed-time (3),
    semi-actuated (4),
    fully-actuated (5) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.12.1.2 XML REPRESENTATION

```
<xs:simpleType name="Intersection-actuation-mode">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="5"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="unknown"/>
        <xs:enumeration value="other"/>
        <xs:enumeration value="fixed-time"/>
        <xs:enumeration value="semi-actuated"/>
        <xs:enumeration value="fully-actuated"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.12.2 intersection-offset-reference

3.4.12.2.1 ASN.1 REPRESENTATION

```
intersection-offset-reference ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.Intersection-offset-reference:cd"
  ASN-NAME "Intersection-offset-reference"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 129 }
  DEFINITION "A code representing the reference point of the coordinated phase of
the current signal timing pattern. The offset reference is the point when the phase of
the local cycle counter is zero."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Intersection-offset-reference ::= ENUMERATED {
    start-of-green (1),
    end-of-green (2),
```

```

        start-of-pedestrian-clearance (3) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.12.2.2 XML REPRESENTATION

```

<xs:simpleType name="Intersection-offset-reference">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="start of green"/>
        <xs:enumeration value="end of green"/>
        <xs:enumeration value="start of pedestrian
clearance"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.12.3 intersection-planned-signal-timing-mode

3.4.12.3.1 ASN.1 REPRESENTATION

```

intersection-planned-signal-timing-mode ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "IntersectionSignal.Intersection-planned-signal-timing-mode:cd"
ASN-NAME "Intersection-planned-signal-timing-mode"
ASN-OBJECT-IDENTIFIER { tmddDataElements 130 }
DEFINITION "Traffic timing mode commanded for the intersection signal."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Intersection-planned-signal-timing-mode ::= ENUMERATED {
    unknown (1),
    other (2),
    local (3),
    local-manual (4),
    local-time-of-day (5),
    local-traffic-responsive (6),
    central-time-of-day (7),
    central-traffic-responsive (8),
    central-hold-force-omit (9),
    central-holiday-schedule (10),
    central-standby (11),
    coordinated-critical-intersection-control (12),
    coordinated-adaptive (13),
    coordinated-transit-priority (14),
    flash-programmed (15) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.12.3.2 XML REPRESENTATION

```

<xs:simpleType name="Intersection-planned-signal-timing-mode">
  <xs:union>

```

```

        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="15"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="unknown"/>
                <xs:enumeration value="other"/>
                <xs:enumeration value="local"/>
                <xs:enumeration value="local manual"/>
                <xs:enumeration value="local time of day"/>
                <xs:enumeration value="local traffic responsive"/>
                <xs:enumeration value="central time of day"/>
                <xs:enumeration value="central traffic responsive"/>
                <xs:enumeration value="central hold force omit"/>
                <xs:enumeration value="central holiday schedule"/>
                <xs:enumeration value="central standby"/>
                <xs:enumeration value="coordinated-critical
intersection control"/>
                <xs:enumeration value="coordinated-adaptive"/>
                <xs:enumeration value="coordinated-transit
priority"/>
                <xs:enumeration value="flash-programmed"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.12.4 intersection-signal-control-mode

3.4.12.4.1 ASN.1 REPRESENTATION

```

intersection-signal-control-mode ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "IntersectionSignal.Intersection-signal-control-mode:cd"
    ASN-NAME "Intersection-signal-control-mode"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 131 }
    DEFINITION "Traffic control mode of the intersection signal."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Intersection-signal-control-mode ::= ENUMERATED {
        unknown (1),
        other (2),
        free (3),
        fixed-time (4),
        actuated (5),
        semi-actuated (6),
        critical-intersection-control (7),
        traffic-responsive (8),
        adaptive (9),
        flash-programmed (10) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.12.4.2 XML REPRESENTATION

```

<xs:simpleType name="Intersection-signal-control-mode">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">

```

```

        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="10"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType>
    <xs:restriction base="xs:string">
        <xs:enumeration value="unknown"/>
        <xs:enumeration value="other"/>
        <xs:enumeration value="free"/>
        <xs:enumeration value="fixed time"/>
        <xs:enumeration value="actuated"/>
        <xs:enumeration value="semi actuated"/>
        <xs:enumeration value="critical intersection
control"/>
        <xs:enumeration value="traffic responsive"/>
        <xs:enumeration value="adaptive"/>
        <xs:enumeration value="flash-programmed"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.12.5 intersection-signal-control-source

3.4.12.5.1 ASN.1 REPRESENTATION

```

intersection-signal-control-source ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "IntersectionSignal.Intersection-signal-control-source:cd"
    ASN-NAME "Intersection-signal-control-source"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 132 }
    DEFINITION "Command source of the signal timing mode for the intersection
    signal."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Intersection-signal-control-source ::= ENUMERATED {
        unknown (1),
        other (2),
        central-time-base-coordination-intersection (3),
        central-operator-commanded-intersection (4),
        central-time-base-coordination-section (5),
        central-operator-commanded-section (6),
        local (7),
        local-time-base-coordination (8),
        local-manual (9),
        local-backup-loss-of-central (10) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.12.5.2 XML REPRESENTATION

```

<xs:simpleType name="Intersection-signal-control-source">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="10"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="unknown"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

```

                                <xs:enumeration value="other"/>
                                <xs:enumeration value="central time base
coordination intersection"/>
                                <xs:enumeration value="central operator commanded
intersection"/>
                                <xs:enumeration value="central time base
coordination section"/>
                                <xs:enumeration value="central operator commanded
section"/>
                                <xs:enumeration value="local"/>
                                <xs:enumeration value="local time base
coordination"/>
                                <xs:enumeration value="local manual"/>
                                <xs:enumeration value="local backup loss of
central"/>
                                </xs:restriction>
                                </xs:simpleType>
                                </xs:union>
</xs:simpleType>

```

3.4.12.6 intersection-signal-request-command

3.4.12.6.1 ASN.1 REPRESENTATION

```

intersection-signal-request-command ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "IntersectionSignal.Intersection-signal-request-command:cd"
ASN-NAME "Intersection-signal-request-command"
ASN-OBJECT-IDENTIFIER { tmddDataElements 133 }
DEFINITION "A request command from one TMC to another for intersection action."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Intersection-signal-request-command ::= ENUMERATED {
    change-signal-timing-mode (1),
    change-signal-timing-pattern (2),
    make-offset-adjustment (3),
    other (4) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.12.6.2 XML REPRESENTATION

```

<xs:simpleType name="Intersection-signal-request-command">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="change signal timing mode"/>
        <xs:enumeration value="change signal timing
pattern"/>
        <xs:enumeration value="make offset adjustment"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.12.7 intersection-signal-timing-mode

3.4.12.7.1 ASN.1 REPRESENTATION

```
intersection-signal-timing-mode ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "IntersectionSignal.Intersection-signal-timing-mode:cd"
    ASN-NAME "Intersection-signal-timing-mode"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 134 }
    DEFINITION "Current traffic timing mode of the intersection signal."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Intersection-signal-timing-mode ::= ENUMERATED {
        unknown (1),
        other (2),
        free (3),
        fixed-time (4),
        actuated (5),
        semi-actuated (6),
        critical-intersection-control (7),
        traffic-responsive (8),
        adaptive (9),
        flash-programmed (10),
        conflict-flash (11),
        free-due-to-fault (12),
        flash-automatic (13),
        flash-preempt (14),
        flash-local-manual (15),
        flash-fault (16),
        flash-mmu-cmu (17),
        flash-reasons-unknown (18),
        flash-startup (19),
        special-function (20),
        coordinated-alarm (21),
        transition (22),
        preempt (23),
        signal-priority (24) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.12.7.2 XML REPRESENTATION

```
<xs:simpleType name="Intersection-signal-timing-mode">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="24"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="unknown"/>
                <xs:enumeration value="other"/>
                <xs:enumeration value="free"/>
                <xs:enumeration value="fixed time"/>
                <xs:enumeration value="actuated"/>
                <xs:enumeration value="semi actuated"/>
                <xs:enumeration value="critical intersection
control"/>
                <xs:enumeration value="traffic responsive"/>
                <xs:enumeration value="adaptive"/>
                <xs:enumeration value="flash-programmed"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
```

```

        <xs:enumeration value="conflict-flash"/>
        <xs:enumeration value="free due to fault"/>
        <xs:enumeration value="flash-automatic"/>
        <xs:enumeration value="flash preempt"/>
        <xs:enumeration value="flash local manual"/>
        <xs:enumeration value="flash fault"/>
        <xs:enumeration value="flash mmu-cmu"/>
        <xs:enumeration value="flash reasons unknown"/>
        <xs:enumeration value="flash startup"/>
        <xs:enumeration value="special function"/>
        <xs:enumeration value="coordinated alarm"/>
        <xs:enumeration value="transition"/>
        <xs:enumeration value="preempt"/>
        <xs:enumeration value="signal-priority"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.12.8 intersection-turning-movement-code

3.4.12.8.1 ASN.1 REPRESENTATION

```

intersection-turning-movement-code ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "IntersectionSignal.Intersection-turning-movement-code:cd"
    ASN-NAME "Intersection-turning-movement-code"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 135 }
    DEFINITION "A code representing the intersection turning movement.
    T -- Through
    L -- Left turn
    R -- Right turn
    G -- Shared through and right turn
    E -- Shared through and left turn
    P -- Pedestrian
    A -- All legal movements Left Through and Right"
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Intersection-turning-movement-code ::= ENUMERATED {
        t (1),
        l (2),
        r (3),
        g (4),
        e (5),
        p (6),
        a (7),
        other (8) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.12.8.2 XML REPRESENTATION

```

<xs:simpleType name="Intersection-turning-movement-code">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="8"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">

```



```

                                <!-- Through -->
                                <xs:enumeration value="T"/>
                                <!-- Left turn -->
                                <xs:enumeration value="L"/>
                                <!-- Right turn -->
                                <xs:enumeration value="R"/>
                                <!-- Shared through and right turn -->
                                <xs:enumeration value="G"/>
                                <!-- Shared through and left turn -->
                                <xs:enumeration value="E"/>
                                <!-- Pedestrian -->
                                <xs:enumeration value="P"/>
                                <!-- All legal movements Left Through and Right -->
                                <xs:enumeration value="A"/>
                                <!-- Other -->
                                <xs:enumeration value="other"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:union>
</xs:simpleType>

```

3.4.12.9 intersection-turning-movement-angle

3.4.12.9.1 ASN.1 REPRESENTATION

```

intersection-turning-movement-angle ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "IntersectionSignal.Intersection-turning-movement-angle:qty"
    ASN-NAME "Intersection-turning-movement-angle"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 136 }
    DEFINITION          "A number representing the direction of travel in hundredths
of a degree. E.g. 59.75 degrees would be 5975. A value of 0 equals true
North, increasing in a clockwise direction. For example, a direction 'to the
east' is defined as 9000."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Intersection-turning-movement-angle ::= INTEGER (0..35999)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "hundredths of a degree"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.12.9.2 XML REPRESENTATION

```

<xs:simpleType name="Intersection-turning-movement-angle">
    <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="35999"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.12.10 intersection-timing-duration

3.4.12.10.1 ASN.1 REPRESENTATION

```

intersection-timing-duration ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "IntersectionSignal.Intersection-timing-duration:qty"
    ASN-NAME "Intersection-timing-duration"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 137 }
    DEFINITION          "The measure of time in tenths of a second, a signal indication is
on."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element

```

```
STANDARD "TMDD"
DATA-TYPE "Intersection-timing-duration ::= INTEGER (0..3600)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "tenths of a second"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.12.10.2 XML REPRESENTATION

```
<xs:simpleType name="Intersection-timing-duration">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="3600"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.12.11 time-reference-code

3.4.12.11.1 ASN.1 REPRESENTATION

```
time-reference-code ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.Time-reference-code:cd"
  ASN-NAME "Time-reference-code"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 138 }
  DEFINITION "A code representing the time reference."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Time-reference-code ::= ENUMERATED {
    wwv (1),
    gps (2),
    eastern-grid-control (3),
    none (4),
    unknown (5) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.12.11.2 XML REPRESENTATION

```
<xs:simpleType name="Time-reference-code">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="wwv"/>
        <xs:enumeration value="gps"/>
        <xs:enumeration value="eastern grid control"/>
        <xs:enumeration value="none"/>
        <xs:enumeration value="unknown"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.13 LCS Class Data Elements

3.4.13.1 lcs-lane-current-state

3.4.13.1.1 *ASN.1 REPRESENTATION*

```
lcs-lane-current-state ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "LCS.Lcs-lane-current-state:cd"
  ASN-NAME "Lcs-lane-current-state"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 140 }
  DEFINITION "Indicates the state of a lane control signal."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Lcs-lane-current-state ::= ENUMERATED {
    open (1),
    closed (2),
    opening (3),
    closing (4),
    unknown (5),
    turning-lane (6),
    other (7) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.13.1.2 *XML REPRESENTATION*

```
<xs:simpleType name="Lcs-lane-current-state">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="7"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <!-- open - Green Arrow Displayed -->
        <xs:enumeration value="open"/>
        <!-- closed - Red X Displayed -->
        <xs:enumeration value="closed"/>
        <!-- opening - Yellow Arrow -->
        <xs:enumeration value="opening"/>
        <!-- closing - Yellow X Displayed -->
        <xs:enumeration value="closing"/>
        <!-- unknown -->
        <xs:enumeration value="unknown"/>
        <!-- turning lane - White Arrow Displayed -->
        <xs:enumeration value="turning lane"/>
        <!-- other -->
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.13.2 *lcs-lane-request-command*

3.4.13.2.1 *ASN.1 REPRESENTATION*

```
lcs-lane-request-command ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "LCS.Lcs-lane-request-command:cd"
  ASN-NAME "Lcs-lane-request-command"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 141 }
  DEFINITION "A request command from one center to another to open or close a lane."
```

```
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Lcs-lane-request-command ::= ENUMERATED {
    open-the-lane (1),
    close-the-lane (2),
    other (3) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.13.2 XML REPRESENTATION

```
<xs:simpleType name="Lcs-lane-request-command">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="open the lane"/>
        <xs:enumeration value="close the lane"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.14 Link Class Data Elements

3.4.14.1 link-alignment

3.4.14.1.1 ASN.1 REPRESENTATION

```
link-alignment ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-alignment:cd"
  ASN-NAME "Link-alignment"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 142 }
  DEFINITION "Orientation of a link representing the positive direction on the
  link."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-alignment ::= ENUMERATED {
    northbound (1),
    eastbound (2),
    southbound (3),
    westbound (4),
    inner-loop (5),
    outer-loop (6) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.1.2 XML REPRESENTATION

```
<xs:simpleType name="Link-alignment">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
```

```

        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="6"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType>
    <xs:restriction base="xs:string">
        <xs:enumeration value="northbound"/>
        <xs:enumeration value="eastbound"/>
        <xs:enumeration value="southbound"/>
        <xs:enumeration value="westbound"/>
        <xs:enumeration value="inner loop"/>
        <xs:enumeration value="outer loop"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.14.2 link-alternate-route-delay

3.4.14.2.1 ASN.1 REPRESENTATION

```

link-alternate-route-delay ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-alternate-route-delay:qty"
    ASN-NAME "Link-alternate-route-delay"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 143 }
    DEFINITION "Estimated average delay occurring on an alternate route."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-alternate-route-delay ::= INTEGER (0..605000)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "seconds"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.2.2 XML REPRESENTATION

```

<xs:simpleType name="Link-alternate-route-delay">
    <xs:restriction base="xs:int">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="605000"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.14.3 link-capacity

3.4.14.3.1 ASN.1 REPRESENTATION

```

link-capacity ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-capacity:rt"
    ASN-NAME "Link-capacity"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 144 }
    DEFINITION "The maximum capacity of the link or route in vehicles per hour. See
    FHWA Highway Capacity Manual, Section I, Introduction."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-capacity ::= INTEGER (0..300000)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "vehicles per hour"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.3.2 XML REPRESENTATION

```
<xs:simpleType name="Link-capacity">
  <xs:restriction base="xs:unsignedInt">
    <xs:maxInclusive value="300000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.4 link-capacity-existing

3.4.14.4.1 ASN.1 REPRESENTATION

```
link-capacity-existing ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-capacity-existing:pct"
  ASN-NAME "Link-capacity-existing"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 145 }
  DEFINITION "Practical capacity has reduced from the normal value to this
percentage of normal capacity."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-capacity-existing ::= INTEGER (0..100)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "percent"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.4.2 XML REPRESENTATION

```
<xs:simpleType name="Link-capacity-existing">
  <xs:restriction base="xs:unsignedByte">
    <xs:maxInclusive value="100"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.5 link-data-stored

3.4.14.5.1 ASN.1 REPRESENTATION

```
link-data-stored ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-data-stored:cd"
  ASN-NAME "Link-data-stored"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 146 }
  DEFINITION "Lists the types of road data stored for the link or route by a TMC
or ISP. Such data will include speed, volume, etc."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-data-stored ::= ENUMERATED {
    current-link-volume (1),
    current-occupancy (2),
    current-average-speed (3),
    current-delay-time (4),
    current-travel-time (5),
    roadway-status (6),
    daily-peak-volume-and-hour-of-peak-volume (7) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.5.2 XML REPRESENTATION

```
<xs:simpleType name="Link-data-stored">
  <xs:union>
```

```

        <xs:simpleType>
            <xs:restriction base="xs:int">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="7"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="current link volume"/>
                <xs:enumeration value="current occupancy"/>
                <xs:enumeration value="current average speed"/>
                <xs:enumeration value="current delay time"/>
                <xs:enumeration value="current travel time"/>
                <xs:enumeration value="roadway status"/>
                <xs:enumeration value="daily peak volume and hour of
peak volume"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.14.6 link-data-type

3.4.14.6.1 ASN.1 REPRESENTATION

```

link-data-type ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-data-type:cd"
    ASN-NAME "Link-data-type"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 147 }
    DEFINITION "The type of the algorithm applied on traffic data provided for the
link or route."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-data-type ::= ENUMERATED {
        actual (1),
        reconstructed (2),
        historical (3),
        predicted (4),
        smoothed (5),
        averaged (6),
        estimated (7) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.6.2 XML REPRESENTATION

```

<xs:simpleType name="Link-data-type">
    <xs:union>
        <xs:simpleType>
            <xs:restriction base="xs:unsignedInt">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="7"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="actual"/>
                <xs:enumeration value="reconstructed"/>
                <xs:enumeration value="historical"/>
                <xs:enumeration value="predicted"/>
                <xs:enumeration value="smoothed"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

```

        <xs:enumeration value="averaged"/>
        <xs:enumeration value="estimated"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.14.7 link-delay

3.4.14.7.1 ASN.1 REPRESENTATION

```

link-delay ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-delay:qty"
    ASN-NAME "Link-delay"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 148 }
    DEFINITION          "Delay time for travel along a particular link or route. This is
additional time it will take above the free flow travel time for that time period to
travel from one end of the link or route to the other."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-delay ::= INTEGER (0..605000)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "seconds"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.7.2 XML REPRESENTATION

```

<xs:simpleType name="Link-delay">
    <xs:restriction base="xs:unsignedInt">
        <xs:maxInclusive value="605000"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.14.8 link-density

3.4.14.8.1 ASN.1 REPRESENTATION

```

link-density ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-density:rt"
    ASN-NAME "Link-density"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 149 }
    DEFINITION          "Vehicle concentration per kilometer of the link or route."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-density ::= INTEGER (0..2000)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "vehicles per kilometer"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.8.2 XML REPRESENTATION

```

<xs:simpleType name="Link-density">
    <xs:restriction base="xs:unsignedShort">
        <xs:maxInclusive value="2000"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.14.9 link-direction

3.4.14.9.1 *ASN.1 REPRESENTATION*

```
link-direction ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-direction:cd"
  ASN-NAME "Link-direction"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 150 }
  DEFINITION "The direction(s) of travel referenced on a link, or a node."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-direction ::= ENUMERATED {
    any-other (0),
    n (1),
    ne (2),
    e (3),
    se (4),
    s (5),
    sw (6),
    w (7),
    nw (8),
    not-directional (9),
    positive-direction (10),
    negative-direction (11),
    both-directions (12),
    other (13) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.9.2 *XML REPRESENTATION*

```
<xs:simpleType name="Link-direction">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="13"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="any other"/>
        <xs:enumeration value="n"/>
        <xs:enumeration value="ne"/>
        <xs:enumeration value="e"/>
        <xs:enumeration value="se"/>
        <xs:enumeration value="s"/>
        <xs:enumeration value="sw"/>
        <xs:enumeration value="w"/>
        <xs:enumeration value="nw"/>
        <xs:enumeration value="not directional"/>
        <xs:enumeration value="positive direction"/>
        <xs:enumeration value="negative direction"/>
        <xs:enumeration value="both directions"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.14.10 *link-headway*

3.4.14.10.1 *ASN.1 REPRESENTATION*

```
link-headway ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-headway:qty"  
  ASN-NAME "Link-headway"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 151 }  
  DEFINITION "Estimated headway (time between vehicles) on the link or route."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Link-headway ::= INTEGER (0..605000)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "seconds"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.10.2 XML REPRESENTATION

```
<xs:simpleType name="Link-headway">  
  <xs:restriction base="xs:int">  
    <xs:minInclusive value="0"/>  
    <xs:maxInclusive value="605000"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.14.11 link-lane-number

3.4.14.11.1 ASN.1 REPRESENTATION

```
link-lane-number ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-lane-number:id"  
  ASN-NAME "Link-lane-number"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 152 }  
  DEFINITION "The number which indicates a particular lane on a link for a given  
  direction of travel. Lanes are numbered from the median out beginning with 1."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Link-lane-number ::= INTEGER (1..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "lane"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.11.2 XML REPRESENTATION

```
<xs:simpleType name="Link-lane-number">  
  <xs:restriction base="xs:unsignedByte">  
    <xs:minInclusive value="1"/>  
    <xs:maxInclusive value="255"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.14.12 link-lanes-count

3.4.14.12.1 ASN.1 REPRESENTATION

```
link-lanes-count ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-lanes-count:qty"  
  ASN-NAME "Link-lanes-count"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 153 }  
  DEFINITION "A count describing total number of lanes. Used to describe the  
  total number of lanes on a link for a given direction of travel, subset of lanes  
  affected by a roadway event, or lanes monitored or controlled by a roadway device."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
```

```
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Link-lanes-count ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "lanes"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.12.2 XML REPRESENTATION

```
<xs:simpleType name="Link-lanes-count">
  <xs:restriction base="xs:unsignedByte">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="255"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.13 link-length

3.4.14.13.1 ASN.1 REPRESENTATION

```
link-length ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-length:qty"
  ASN-NAME "Link-length"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 154 }
  DEFINITION          "The length of the link from beginning node to ending node in
meters."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-length ::= INTEGER (0..160000)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "meters"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.13.2 XML REPRESENTATION

```
<xs:simpleType name="Link-length">
  <xs:restriction base="xs:unsignedInt">
    <xs:maxInclusive value="160000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.14 link-level-of-service

3.4.14.14.1 ASN.1 REPRESENTATION

```
link-level-of-service ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-level-of-service:cd"
  ASN-NAME "Link-level-of-service"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 155 }
  DEFINITION          "A qualitative measure describing the operational conditions of
traffic as defined in the Highway Capacity Manual. Refer to Sections 1, 3, 4, 5, 7,
8, 9, 10, and 11. Free flow conditions is equivalent to Level of Service A, stable
flow with noticeable decline in free flow conditions is equivalent to Level of Service
B, etc..., to Level of Service F being forced flow."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-level-of-service ::= ENUMERATED {
    free-flow-conditions (1),
    stable-flow-with-noticeable-decline-in-free-flow-conditions (2),
```

```

        stable-flow-with-significant-increase-in-driver-discomfort (3),
        high-density-but-stable-flow (4),
        conditions-near-capacity-level (5),
        forced-flow (6) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.14.2 XML REPRESENTATION

```

<xs:simpleType name="Link-level-of-service">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="6"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <!-- LOS A -->
        <xs:enumeration value="free flow conditions"/>
        <!-- LOS B -->
        <xs:enumeration value="stable flow with noticeable
decline in free flow conditions"/>
        <!-- LOS C -->
        <xs:enumeration value="stable flow with significant
increase in driver discomfort"/>
        <!-- LOS D -->
        <xs:enumeration value="high density but stable
flow"/>
        <!-- LOS E -->
        <xs:enumeration value="conditions near capacity
level"/>
        <!-- LOS F -->
        <xs:enumeration value="forced flow"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.14.15 link-location-linear-reference

3.4.14.15.1 ASN.1 REPRESENTATION

```

link-location-linear-reference ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-location-linear-reference:nbr"
  ASN-NAME "Link-location-linear-reference"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 156 }
  DEFINITION "A marker reference point at a location on a roadway."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-location-linear-reference ::= IA5String"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.15.2 XML REPRESENTATION

```

<xs:simpleType name="Link-location-linear-reference">
  <xs:restriction base="xs:string"/>

```

</xs:simpleType>

3.4.14.16 link-location-linear-reference-version

3.4.14.16.1 ASN.1 REPRESENTATION

```
link-location-linear-reference-version ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-location-linear-reference-version:id"
  ASN-NAME "Link-location-linear-reference-version"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 157 }
  DEFINITION "Identifies the version of the marker referencing system used by an
  organization."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-location-linear-reference-version ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.16.2 XML REPRESENTATION

```
<xs:simpleType name="Link-location-linear-reference-version">
  <xs:restriction base="xs:unsignedByte"/>
</xs:simpleType>
```

3.4.14.17 link-median-type

3.4.14.17.1 ASN.1 REPRESENTATION

```
link-median-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-median-type:cd"
  ASN-NAME "Link-median-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 158 }
  DEFINITION "Type of the median for the separation of opposing or parallel
  traffic links."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-median-type ::= ENUMERATED {
    curbed (1),
    concrete-barrier (2),
    concrete-barrier-with-visibility-screen (3),
    guard-rail (4),
    open-grass (5),
    open-sand (6),
    painted-median-no-access (7),
    separated-roadways (8),
    unprotected (9) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.17.2 XML REPRESENTATION

```
<xs:simpleType name="Link-median-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="9"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="curbed"/>
            <xs:enumeration value="concrete barrier"/>
            <xs:enumeration value="concrete barrier with
visibility screen"/>
            <xs:enumeration value="guard rail"/>
            <xs:enumeration value="open grass"/>
            <xs:enumeration value="open sand"/>
            <xs:enumeration value="painted median no access"/>
            <xs:enumeration value="separated roadways"/>
            <xs:enumeration value="unprotected"/>
        </xs:restriction>
    </xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.14.18 link-occupancy

3.4.14.18.1 ASN.1 REPRESENTATION

```

link-occupancy ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-occupancy:pct"
    ASN-NAME "Link-occupancy"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 159 }
    DEFINITION "The current average percent occupancy of the vehicles determined by
detectors on the link or route. This is percent of time, within a given time period
in seconds, that a point on the roadway is occupied by the vehicles."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-occupancy ::= INTEGER (0..100)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "percent"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.18.2 XML REPRESENTATION

```

<xs:simpleType name="Link-occupancy">
    <xs:restriction base="xs:unsignedByte">
        <xs:maxInclusive value="100"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.14.19 link-oversaturated-flag

3.4.14.19.1 ASN.1 REPRESENTATION

```

link-oversaturated-flag ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-oversaturated-flag:cd"
    ASN-NAME "Link-oversaturated-flag"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 160 }
    DEFINITION "Flag indicating the existence of oversaturated conditions."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-oversaturated-flag ::= ENUMERATED {
        oversaturated (0),
        not-oversaturated (1) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
}

```

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.14.19.2 XML REPRESENTATION

```
<xs:simpleType name="Link-oversaturated-flag">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="1"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="oversaturated"/>
        <xs:enumeration value="not oversaturated"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.14.20 link-oversaturated-threshold

3.4.14.20.1 ASN.1 REPRESENTATION

```
link-oversaturated-threshold ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-oversaturated-threshold:pct"
  ASN-NAME "Link-oversaturated-threshold"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 161 }
  DEFINITION "Threshold in percentage of link capacity to identify oversaturated
  conditions over a user specified time period."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-oversaturated-threshold ::= INTEGER (0..100)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "percent"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.20.2 XML REPRESENTATION

```
<xs:simpleType name="Link-oversaturated-threshold">
  <xs:restriction base="xs:unsignedByte">
    <xs:maxInclusive value="100"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.21 link-priority-type

3.4.14.21.1 ASN.1 REPRESENTATION

```
link-priority-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-priority-type:cd"
  ASN-NAME "Link-priority-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 162 }
  DEFINITION "The roadway priority assignments for which the roadway is restricted
  from general traffic access due to one of the listed priority functions."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-priority-type ::= ENUMERATED {
```

```

        special-events (1),
        snow-ice-clearance (2),
        weather-evacuation (3),
        defense-movements (4),
        hazmat (5),
        agricultural-access (6),
        none (7) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.21.2 XML REPRESENTATION

```

<xs:simpleType name="Link-priority-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:int">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="7"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="special events"/>
        <xs:enumeration value="snow ice clearance"/>
        <xs:enumeration value="weather evacuation"/>
        <xs:enumeration value="defense movements"/>
        <xs:enumeration value="hazmat"/>
        <xs:enumeration value="agricultural access"/>
        <xs:enumeration value="none"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.14.22 link-restriction-axle-count

3.4.14.22.1 ASN.1 REPRESENTATION

```

link-restriction-axle-count ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-restriction-axle-count:qty"
  ASN-NAME "Link-restriction-axle-count"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 163 }
  DEFINITION "Maximum axle count for a vehicle allowed on the link."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-restriction-axle-count ::= INTEGER (0..20)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "axles"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.22.2 XML REPRESENTATION

```

<xs:simpleType name="Link-restriction-axle-count">
  <xs:restriction base="xs:unsignedByte">
    <xs:maxInclusive value="20"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.14.23 link-restriction-height

3.4.14.23.1 ASN.1 REPRESENTATION

```
link-restriction-height ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-restriction-height:qty"  
  ASN-NAME "Link-restriction-height"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 164 }  
  DEFINITION "Minimum vertical clearance on a link. Overpasses, bridges, and  
tunnels are examples. Measured in centimeters unless otherwise indicated by the link-  
restriction-units data element. 2000 centimeters = 65.6 feet."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Link-restriction-height ::= INTEGER (0..2000)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.23.2 XML REPRESENTATION

```
<xs:simpleType name="Link-restriction-height">  
  <xs:restriction base="xs:unsignedShort">  
    <xs:maxInclusive value="2000"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.14.24 link-restriction-length

3.4.14.24.1 ASN.1 REPRESENTATION

```
link-restriction-length ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-restriction-length:qty"  
  ASN-NAME "Link-restriction-length"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 165 }  
  DEFINITION "Maximum Vehicle Length allowable on a link. Measured in centimeters  
unless otherwise indicated by the link-restriction-units data element."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Link-restriction-length ::= INTEGER (0..6000)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.24.2 XML REPRESENTATION

```
<xs:simpleType name="Link-restriction-length">  
  <xs:restriction base="xs:unsignedShort">  
    <xs:maxInclusive value="6000"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.14.25 link-restriction-units

3.4.14.25.1 ASN.1 REPRESENTATION

```
link-restriction-units ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-restriction-units:cd"  
  ASN-NAME "Link-restriction-units"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 166 }  
  DEFINITION "A data element indicating the units of measure for link restrictions  
information (e.g., link-restriction-height, link-restriction-length, link-restriction-
```

width. If this data element is not included in the message, the default unit is in centimeters."

```
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Link-restriction-units ::= ENUMERATED {
    centimeters (1),
    inches (2) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.25.2 XML REPRESENTATION

```
<xs:simpleType name="Link-restriction-units">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="2"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="centimeters"/>
        <xs:enumeration value="inches"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.14.26 link-restriction-weight-axle

3.4.14.26.1 ASN.1 REPRESENTATION

```
link-restriction-weight-axle ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Link.Link-restriction-weight-axle:qty"
ASN-NAME "Link-restriction-weight-axle"
ASN-OBJECT-IDENTIFIER { tmddDataElements 167 }
DEFINITION "The maximum axle weight allowed on a link, measured in kilograms."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Link-restriction-weight-axle ::= INTEGER (0..20000)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "kilograms"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.26.2 XML REPRESENTATION

```
<xs:simpleType name="Link-restriction-weight-axle">
  <xs:restriction base="xs:unsignedShort">
    <xs:maxInclusive value="20000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.27 link-restriction-weight-vehicle

3.4.14.27.1 ASN.1 REPRESENTATION

```
link-restriction-weight-vehicle ITS-DATA-ELEMENT ::= {
```

```

DESCRIPTIVE-NAME "Link.Link-restriction-weight-vehicle:qty"
ASN-NAME "Link-restriction-weight-vehicle"
ASN-OBJECT-IDENTIFIER { tmddDataElements 168 }
DEFINITION "Maximum gross vehicle weight allowable on a link, measured in kilograms."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Link-restriction-weight-vehicle ::= INTEGER (0..131072)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "kilograms"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.27.2 XML REPRESENTATION

```

<xs:simpleType name="Link-restriction-weight-vehicle">
  <xs:restriction base="xs:unsignedInt">
    <xs:maxInclusive value="131072"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.14.28 link-restriction-width

3.4.14.28.1 ASN.1 REPRESENTATION

```

link-restriction-width ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-restriction-width:qty"
  ASN-NAME "Link-restriction-width"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 169 }
  DEFINITION "Maximum allowable vehicle width on a link. Measured in centimeters unless otherwise indicated by the link-restriction-units data element."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-restriction-width ::= INTEGER (0..2000)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.28.2 XML REPRESENTATION

```

<xs:simpleType name="Link-restriction-width">
  <xs:restriction base="xs:unsignedShort">
    <xs:maxInclusive value="2000"/>
  </xs:restriction>
</xs:simpleType>

```

3.4.14.29 link-route-designator

3.4.14.29.1 ASN.1 REPRESENTATION

```

link-route-designator ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-route-designator:id"
  ASN-NAME "Link-route-designator"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 170 }
  DEFINITION "County, State, or Federal route numbers with any associated alphabetic designators."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-route-designator ::= IA5String (SIZE(1..64))"

```

```
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.29.2 XML REPRESENTATION

```
<xs:simpleType name="Link-route-designator">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="64"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.30 link-shoulder-width

3.4.14.30.1 ASN.1 REPRESENTATION

```
link-shoulder-width ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-shoulder-width:qty"
  ASN-NAME "Link-shoulder-width"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 171 }
  DEFINITION "The width of the left or right shoulder of the link."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-shoulder-width ::= INTEGER (0..999)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "centimeters"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.30.2 XML REPRESENTATION

```
<xs:simpleType name="Link-shoulder-width">
  <xs:restriction base="xs:unsignedShort">
    <xs:maxInclusive value="999"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.31 link-speed-average

3.4.14.31.1 ASN.1 REPRESENTATION

```
link-speed-average ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-speed-average:rt"
  ASN-NAME "Link-speed-average"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 172 }
  DEFINITION "The current average speed of the vehicles on the link or route."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-speed-average ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "kilometers per hours"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.31.2 XML REPRESENTATION

```
<xs:simpleType name="Link-speed-average">
  <xs:restriction base="xs:unsignedByte"/>
</xs:simpleType>
```

3.4.14.32 link-speed-limit

3.4.14.32.1 ASN.1 REPRESENTATION

```
link-speed-limit ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-speed-limit:rt"  
  ASN-NAME "Link-speed-limit"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 173 }  
  DEFINITION "The advised, posted, legal, or averaged speed limit on the link or  
    route. The units are in kilometers per hour, unless otherwise indicated in link-  
    speed-limit-units data element."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Link-speed-limit ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.32.2 XML REPRESENTATION

```
<xs:simpleType name="Link-speed-limit">  
  <xs:restriction base="xs:unsignedByte"/>  
</xs:simpleType>
```

3.4.14.33 link-speed-limit-units

3.4.14.33.1 ASN.1 REPRESENTATION

```
link-speed-limit-units ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Link.Link-speed-limit-units:cd"  
  ASN-NAME "Link-speed-limit-units"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 174 }  
  DEFINITION "A data element indicating if the units for link-speed-limit are in  
    kilometers per hour or miles per hour. If this data element is not included in the  
    message, the default unit for link-speed-limit shall be in kilometers per hour."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Link-speed-limit-units ::= ENUMERATED {  
    kilometers-per-hour (1),  
    miles-per-hour (2) }"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.33.2 XML REPRESENTATION

```
<xs:simpleType name="Link-speed-limit-units">  
  <xs:union>  
    <xs:simpleType>  
      <xs:restriction base="xs:unsignedInt">  
        <xs:minInclusive value="1"/>  
        <xs:maxInclusive value="2"/>  
      </xs:restriction>  
    </xs:simpleType>  
    <xs:simpleType>  
      <xs:restriction base="xs:string">  
        <xs:enumeration value="kilometers per hour"/>  
        <xs:enumeration value="miles per hour"/>  
      </xs:restriction>  
    </xs:simpleType>  
  </xs:union>  
</xs:simpleType>
```

```
</xs:union>
</xs:simpleType>
```

3.4.14.34 link-status

3.4.14.34.1 ASN.1 REPRESENTATION

```
link-status ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-status:cd"
  ASN-NAME "Link-status"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 175 }
  DEFINITION          "The current status that provides an indication of standard or non-
  standard link or route operations."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-status ::= ENUMERATED {
    no-determination (1),
    open (2),
    restricted (3),
    closed (4),
    other (5) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.34.2 XML REPRESENTATION

```
<xs:simpleType name="Link-status">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="5"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="no determination"/>
        <xs:enumeration value="open"/>
        <xs:enumeration value="restricted"/>
        <xs:enumeration value="closed"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.14.35 link-stops

3.4.14.35.1 ASN.1 REPRESENTATION

```
link-stops ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-stops:rt"
  ASN-NAME "Link-stops"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 176 }
  DEFINITION          "The number of stopped vehicles (in vehicles per hour) along a
  particular link."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-stops ::= INTEGER (0..100000)"
  FORMAT "ASN.1 encoding"
```

UNIT-OF-MEASURE "vehicles per hour"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.14.35.2 XML REPRESENTATION

```
<xs:simpleType name="Link-stops">
  <xs:restriction base="xs:unsignedInt">
    <xs:maxInclusive value="100000"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.14.36 link-surface-condition

3.4.14.36.1 ASN.1 REPRESENTATION

```
link-surface-condition ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-surface-condition:cd"
  ASN-NAME "Link-surface-condition"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 177 }
  DEFINITION "The pavement surface conditions currently found on the link or route
  (e.g., dry, wet, ice, snow, rocks, etc.)."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Link-surface-condition ::= ENUMERATED {
    dry (1),
    wet (2),
    snow-or-slush (3),
    ice (4),
    oil (5),
    debris (6),
    rocks (7),
    salted (8),
    broken-pavement (9),
    power-lines-down (10),
    material-spill (11),
    chemical-spill (12),
    none (13) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.14.36.2 XML REPRESENTATION

```
<xs:simpleType name="Link-surface-condition">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:int">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="13"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="dry"/>
        <xs:enumeration value="wet"/>
        <xs:enumeration value="snow or slush"/>
        <xs:enumeration value="ice"/>
        <xs:enumeration value="oil"/>
        <xs:enumeration value="debris"/>
        <xs:enumeration value="rocks"/>
        <xs:enumeration value="salted"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        <xs:enumeration value="broken pavement"/>
        <xs:enumeration value="power lines down"/>
        <xs:enumeration value="material spill"/>
        <xs:enumeration value="chemical spill"/>
        <xs:enumeration value="none"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.14.37 link-travel-time

3.4.14.37.1 ASN.1 REPRESENTATION

```

link-travel-time ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-travel-time:qty"
    ASN-NAME "Link-travel-time"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 178 }
    DEFINITION "The current average travel time of the vehicles using the link or
    route. Remarks: Travel time can be determined using the link-speed-average and link-
    length data elements."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-travel-time ::= INTEGER (0..65535)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "seconds"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.37.2 XML REPRESENTATION

```

<xs:simpleType name="Link-travel-time">
    <xs:restriction base="xs:unsignedShort"/>
</xs:simpleType>

```

3.4.14.38 link-travel-time-increase

3.4.14.38.1 ASN.1 REPRESENTATION

```

link-travel-time-increase ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-travel-time-increase:pct"
    ASN-NAME "Link-travel-time-increase"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 179 }
    DEFINITION "The percentage increase in travel times along the link or route
    relative to normal conditions."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-travel-time-increase ::= INTEGER (0..100)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "percent"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.38.2 XML REPRESENTATION

```

<xs:simpleType name="Link-travel-time-increase">
    <xs:restriction base="xs:unsignedByte">
        <xs:maxInclusive value="100"/>
    </xs:restriction>
</xs:simpleType>

```


3.4.14.39 link-type

3.4.14.39.1 ASN.1 REPRESENTATION

```
link-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Link.Link-type:cd"
  ASN-NAME "Link-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 180 }
  DEFINITION "The designation of the link type (Freeway, Arterial, Surface, Rail,
  Ferry, other modes)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}

DATA-CONCEPT-TYPE data-element

STANDARD "TMDD"

DATA-TYPE "Link-type ::= ENUMERATED {

```
    freeway (1),
    arterial (2),
    collector (3),
    local (4),
    service-road (5),
    tunnel (6),
    detour (7),
    dedicated-link (8),
    military-road (9),
    railroad-link (10),
    air-link (11),
    ferry (12),
    on-ramp (13),
    off-ramp (14),
    dedicated-hov-link (15),
    toll-road (16),
    unknown (17),
    other (18) }"
```

FORMAT "ASN.1 encoding"

UNIT-OF-MEASURE ""

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.14.39.2 XML REPRESENTATION

```
<xs:simpleType name="Link-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:int">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="18"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="freeway"/>
        <xs:enumeration value="arterial"/>
        <xs:enumeration value="collector"/>
        <xs:enumeration value="local"/>
        <xs:enumeration value="service road"/>
        <xs:enumeration value="tunnel"/>
        <xs:enumeration value="detour"/>
        <xs:enumeration value="dedicated link"/>
        <xs:enumeration value="military road"/>
        <xs:enumeration value="railroad link"/>
        <xs:enumeration value="air link"/>
        <xs:enumeration value="ferry"/>
        <xs:enumeration value="on-ramp"/>
        <xs:enumeration value="off-ramp"/>
        <xs:enumeration value="dedicated-hov-link"/>
        <xs:enumeration value="toll-road"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

                <xs:enumeration value="unknown"/>
                <xs:enumeration value="other"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>

```

3.4.14.40 link-volume

3.4.14.40.1 ASN.1 REPRESENTATION

```

link-volume ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Link.Link-volume:rt"
    ASN-NAME "Link-volume"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 181 }
    DEFINITION          "Current volume for the link or route expressed in vehicles per
    hour."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Link-volume ::= INTEGER (0..100000)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "vehicles per hour"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.14.40.2 XML REPRESENTATION

```

<xs:simpleType name="Link-volume">
    <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="100000"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.15 Node Class Data Elements

3.4.15.1 node-links-number

3.4.15.1.1 ASN.1 REPRESENTATION

```

node-links-number ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Node.Node-links-number:qty"
    ASN-NAME "Node-links-number"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 182 }
    DEFINITION          "This is the number of links beginning or ending at the node."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Node-links-number ::= INTEGER (0..999)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE "links"
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.15.1.2 XML REPRESENTATION

```

<xs:simpleType name="Node-links-number">
    <xs:restriction base="xs:unsignedShort">
        <xs:maxInclusive value="999"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.15.2 node-status

3.4.15.2.1 ASN.1 REPRESENTATION

```
node-status ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Node.Node-status:cd"  
  ASN-NAME "Node-status"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 183 }  
  DEFINITION "Node current traffic status or condition that provides an indication  
of standard or non-standard node operations."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Node-status ::= ENUMERATED {  
    no-determination (1),  
    open (2),  
    restricted (3),  
    closed (4),  
    other (5) }"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }  
}
```

3.4.15.2.2 XML REPRESENTATION

```
<xs:simpleType name="Node-status">  
  <xs:union>  
    <xs:simpleType>  
      <xs:restriction base="xs:unsignedInt">  
        <xs:minInclusive value="1"/>  
        <xs:maxInclusive value="5"/>  
      </xs:restriction>  
    </xs:simpleType>  
    <xs:simpleType>  
      <xs:restriction base="xs:string">  
        <xs:enumeration value="no determination"/>  
        <xs:enumeration value="open"/>  
        <xs:enumeration value="restricted"/>  
        <xs:enumeration value="closed"/>  
        <xs:enumeration value="other"/>  
      </xs:restriction>  
    </xs:simpleType>  
  </xs:union>  
</xs:simpleType>
```

3.4.15.3 node-type

3.4.15.3.1 ASN.1 REPRESENTATION

```
node-type ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Node.Node-type:cd"  
  ASN-NAME "Node-type"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 184 }  
  DEFINITION "The designation of the node type (Freeway, Arterial, Etc.)."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Node-type ::= ENUMERATED {  
    freeway-interchange (1),  
    arterial-with-secondary-cross-street (2),  
    arterial-with-crossing-arterial (3),  
    frontage-road-with-arterial (4),  
    railroad-crossing (5),  
  }  
}
```

```

        transit-crossing (6),
        bus-route-node (7),
        train-route-node (8),
        wharf-ferry-node (9),
        transfer-point (10),
        pedestrian-crossing (11) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.15.3.2 XML REPRESENTATION

```

<xs:simpleType name="Node-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:int">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="11"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="freeway interchange"/>
        <xs:enumeration value="arterial with secondary cross
street"/>
        <xs:enumeration value="arterial with crossing
arterial"/>
        <xs:enumeration value="frontage road with
        <xs:enumeration value="railroad crossing"/>
        <xs:enumeration value="transit crossing"/>
        <xs:enumeration value="bus route node"/>
        <xs:enumeration value="train route node"/>
        <xs:enumeration value="wharf ferry node"/>
        <xs:enumeration value="transfer point"/>
        <xs:enumeration value="pedestrian crossing"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.16 Organization Class Data Elements

3.4.16.1 center-type

3.4.16.1.1 ASN.1 REPRESENTATION

```

center-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Center-type:cd"
  ASN-NAME "Center-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 185 }
  DEFINITION "A code representing the type of center."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Center-type ::= ENUMERATED {
    fixed (1),
    mobile (2) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.16.1.2 XML REPRESENTATION

```
<xs:simpleType name="Center-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="2"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="fixed"/>
        <xs:enumeration value="mobile"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.16.2 contact-mailing-address-entry

3.4.16.2.1 ASN.1 REPRESENTATION

```
contact-mailing-address-entry ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Contact-mailing-address-entry:txt"
  ASN-NAME "Contact-mailing-address-entry"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 186 }
  DEFINITION "The address line, zip code, or country portion of the mailing
address of a person at an organization to contact."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Contact-mailing-address-entry ::= IA5String (SIZE(1..32))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.16.2.2 XML REPRESENTATION

```
<xs:simpleType name="Contact-mailing-address-entry">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="32"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.16.3 contact-mailing-address-state

3.4.16.3.1 ASN.1 REPRESENTATION

```
contact-mailing-address-state ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Contact-mailing-address-state:txt"
  ASN-NAME "Contact-mailing-address-state"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 187 }
  DEFINITION "The state abbreviation portion of the mailing address of a person at
an organization to contact."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Contact-mailing-address-state ::= IA5String (SIZE(1..2))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.16.3.2 XML REPRESENTATION

```
<xs:simpleType name="Contact-mailing-address-state">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="2"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.16.4 organization-function

3.4.16.4.1 ASN.1 REPRESENTATION

```
organization-function ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Organization-function:txt"
  ASN-NAME "Organization-function"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 188 }
  DEFINITION "A textual description of the function of an organization
  (transportation, emergency management, public safety, etc.) or an organization's
  operating center within a region."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Organization-function ::= IA5String (SIZE(1..128))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.16.4.2 XML REPRESENTATION

```
<xs:simpleType name="Organization-function">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="128"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.16.5 organization-information-forwarding-restrictions

3.4.16.5.1 ASN.1 REPRESENTATION

```
organization-information-forwarding-restrictions ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Organization-information-forwarding-restrictions:cd"
  ASN-NAME "Organization-information-forwarding-restrictions"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 189 }
  DEFINITION "Code representing forwarding restriction on information received
  from another center, whether owner center or external center."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Organization-information-forwarding-restrictions ::= ENUMERATED {
    unrestricted (1),
    recipient-organization-only (2),
    law-enforcement-only (3),
    not-to-public (4),
    other (5) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.16.5.2 XML REPRESENTATION

```
<xs:simpleType name="Organization-information-forwarding-restrictions">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="5"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="unrestricted"/>
        <xs:enumeration value="recipient organization
only"/>
        <xs:enumeration value="law enforcement only"/>
        <xs:enumeration value="not to public"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.16.6 organization-information-type

3.4.16.6.1 ASN.1 REPRESENTATION

```
organization-information-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Organization-information-type:cd"
  ASN-NAME "Organization-information-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 190 }
  DEFINITION "A code representing the type of organization information being
  requested. If the code is set to organization-information, then only
  organization contact information is expected (contactDetails data
  frame). If the code is set to center-information, then center contact
  information is expected (organizationCenterDetails data frame)."
```

DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "Organization-information-type ::= ENUMERATED {
 organization-information (1),
 center-information (2),
 other (3) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.4.16.6.2 XML REPRESENTATION

```
<xs:simpleType name="Organization-information-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="organization information"/>
        <xs:enumeration value="center information"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
```

</xs:simpleType>

3.4.16.7 organization-location-fips

3.4.16.7.1 ASN.1 REPRESENTATION

```
organization-location-fips ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Organization-location-fips:txt"
  ASN-NAME "Organization-location-fips"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 191 }
  DEFINITION          "A 10 character organization location code.  Format is SSSCCPPPPPP,
  where SS is State FIPS (01 to 99), CCC is County FIPS (001 to 999), and PPPPP is Place
  FIPS (00001 to 99999), as defined in Federal Information Processing Standard (FIPS)
  Publication 5-2, FIPS 6-4, and FIPS 55-3.  Note that these standards have been
  superseded by International Committee for Information Technology Standards (INCITS)
  31:2009."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Organization-location-fips ::= IA5String (SIZE(10))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.16.7.2 XML REPRESENTATION

```
<xs:simpleType name="Organization-location-fips">
  <xs:restriction base="xs:string">
    <xs:length value="10"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.16.8 organization-resource-identifier

3.4.16.8.1 ASN.1 REPRESENTATION

```
organization-resource-identifier ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Organization.Organization-resource-identifier:id"
  ASN-NAME "Organization-resource-identifier"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 192 }
  DEFINITION          "A unique identifier within an organization for a resource
  (organization, center, event, person, vehicle, device, etc).  Also used to identify
  the attributes and details of that resource."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Organization-resource-identifier ::= IA5String (SIZE(1..32))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.16.8.2 XML REPRESENTATION

```
<xs:simpleType name="Organization-resource-identifier">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="32"/>
  </xs:restriction>
</xs:simpleType>
```


3.4.16.9 organization-resource-name

3.4.16.9.1 ASN.1 REPRESENTATION

```
organization-resource-name ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Organization.Organization-resource-name:txt"  
  ASN-NAME "Organization-resource-name"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 193 }  
  DEFINITION "A name used to identify an organization center resource  
  (organization, center, event, person, vehicle, device, etc). Also used to identify  
  the attributes and details of that resource."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Organization-resource-name ::= IA5String (SIZE(1..128))"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.16.9.2 XML REPRESENTATION

```
<xs:simpleType name="Organization-resource-name">  
  <xs:restriction base="xs:string">  
    <xs:minLength value="1"/>  
    <xs:maxLength value="128"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.17 RampMeter Class Data Elements

3.4.17.1 meter-greens-per-cycle

3.4.17.1.1 ASN.1 REPRESENTATION

```
meter-greens-per-cycle ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.Meter-greens-per-cycle:rt"  
  ASN-NAME "Meter-greens-per-cycle"  
  ASN-OBJECT-IDENTIFIER { tmddDataElements 194 }  
  DEFINITION "Number of green intervals that occurred during a specific time  
  period."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "TMDD"  
  DATA-TYPE "Meter-greens-per-cycle ::= INTEGER (0..10)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "greens per cycle"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.17.1.2 XML REPRESENTATION

```
<xs:simpleType name="Meter-greens-per-cycle">  
  <xs:restriction base="xs:unsignedInt">  
    <xs:minInclusive value="0"/>  
    <xs:maxInclusive value="10"/>  
  </xs:restriction>  
</xs:simpleType>
```

3.4.17.2 meter-operational-mode

3.4.17.2.1 ASN.1 REPRESENTATION

```
meter-operational-mode ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RampMeter.Meter-operational-mode:cd"
  ASN-NAME "Meter-operational-mode"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 195 }
  DEFINITION "Operational mode of the ramp meter device."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Meter-operational-mode ::= ENUMERATED {
    dark (1),
    rest-in-green (2),
    fixed-rate (3),
    traffic-responsive (4),
    emergency-green (5),
    hold-meter (6),
    hold-non-meter (7),
    hold-rest-in-green (8),
    other (9) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.17.2.2 XML REPRESENTATION

```
<xs:simpleType name="Meter-operational-mode">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="9"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="dark"/>
        <xs:enumeration value="rest in green"/>
        <xs:enumeration value="fixed rate"/>
        <xs:enumeration value="traffic responsive"/>
        <xs:enumeration value="emergency green"/>
        <xs:enumeration value="hold meter"/>
        <xs:enumeration value="hold non meter"/>
        <xs:enumeration value="hold rest in green"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.17.3 ramp-lane-type

3.4.17.3.1 ASN.1 REPRESENTATION

```
ramp-lane-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RampMeter.Ramp-lane-type:cd"
  ASN-NAME "Ramp-lane-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 197 }
  DEFINITION "The type of the ramp meter lane."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Ramp-lane-type ::= ENUMERATED {
    general-traffic (1),
    hov-lane (2),
```

```

        bus-lane (3),
        right-turn-bypass (4),
        other (5) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.17.3.2 XML REPRESENTATION

```

<xs:simpleType name="Ramp-lane-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="5"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="general traffic"/>
        <xs:enumeration value="hov lane"/>
        <xs:enumeration value="bus lane"/>
        <xs:enumeration value="right turn bypass"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>

```

3.4.18 Route Class Data Elements

3.4.18.1 route-type

3.4.18.1.1 ASN.1 REPRESENTATION

```

route-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Route.Route-type:cd"
  ASN-NAME "Route-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 198 }
  DEFINITION "A code representing the type of route."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Route-type ::= ENUMERATED {
    travel (1),
    transit (2),
    detour (3),
    alternate (4),
    evacuation (5),
    snow (6),
    emergency-vehicles (7),
    managed-lanes (8),
    flood (9),
    scenic (10),
    hazmat (11),
    truck (12),
    bicycle (13),
    walking (14),
    other (15) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.18.1.2 XML REPRESENTATION

```
<xs:simpleType name="Route-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="15"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="travel"/>
        <xs:enumeration value="transit"/>
        <xs:enumeration value="detour"/>
        <xs:enumeration value="alternate"/>
        <xs:enumeration value="evacuation"/>
        <xs:enumeration value="snow"/>
        <xs:enumeration value="emergency vehicles"/>
        <xs:enumeration value="managed lanes"/>
        <xs:enumeration value="flood"/>
        <xs:enumeration value="scenic"/>
        <xs:enumeration value="hazmat"/>
        <xs:enumeration value="truck"/>
        <xs:enumeration value="bicycle"/>
        <xs:enumeration value="walking"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.19 Section Class Data Elements

3.4.19.1 section-signal-control-mode

3.4.19.1.1 ASN.1 REPRESENTATION

```
section-signal-control-mode ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Section.Section-signal-control-mode:cd"
  ASN-NAME "Section-signal-control-mode"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 199 }
  DEFINITION "Current traffic control mode of the section."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Section-signal-control-mode ::= ENUMERATED {
    free (1),
    fixed-time (2),
    time-base-coordination (3),
    actuated (4),
    semi-actuated (5),
    critical-intersection-control (6),
    traffic-responsive (7),
    adaptive (8),
    unknown (9),
    flash-programmed (10),
    other (11) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.19.1.2 XML REPRESENTATION

```
<xs:simpleType name="Section-signal-control-mode">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="11"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="free"/>
        <xs:enumeration value="fixed time"/>
        <xs:enumeration value="time base coordination"/>
        <xs:enumeration value="actuated"/>
        <xs:enumeration value="semi actuated"/>
        <xs:enumeration value="critical intersection
control"/>
        <xs:enumeration value="traffic responsive"/>
        <xs:enumeration value="adaptive"/>
        <xs:enumeration value="unknown"/>
        <xs:enumeration value="flash-programmed"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.19.2 section-request-command

3.4.19.2.1 ASN.1 REPRESENTATION

```
section-request-command ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Section.Section-request-command:cd"
  ASN-NAME "Section-request-command"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 200 }
  DEFINITION "A request command from one TMC to another for a section."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Section-request-command ::= ENUMERATED {
    change-signal-timing-mode (1),
    change-signal-timing-pattern (2),
    make-offset-adjustment (3),
    other (4) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.19.2.2 XML REPRESENTATION

```
<xs:simpleType name="Section-request-command">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="change signal timing mode"/>
        <xs:enumeration value="change signal timing
pattern"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

```

        <xs:enumeration value="make offset adjustment"/>
        <xs:enumeration value="other"/>
    </xs:restriction>
</xs:simpleType>
</xs:union>
</xs:simpleType>

```

3.4.20 TransportationNetwork Class Data Elements

3.4.20.1 transportation-network-identifier

3.4.20.1.1 ASN.1 REPRESENTATION

```

transportation-network-identifier ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "TransportationNetwork.Transportation-network-identifier:id"
    ASN-NAME "Transportation-network-identifier"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 201 }
    DEFINITION "Unique identifier for a roadway or transit network, route, link, or
    node."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Transportation-network-identifier ::= IA5String (SIZE(1..32))"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.20.1.2 XML REPRESENTATION

```

<xs:simpleType name="Transportation-network-identifier">
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="32"/>
    </xs:restriction>
</xs:simpleType>

```

3.4.20.2 transportation-network-information-type

3.4.20.2.1 ASN.1 REPRESENTATION

```

transportation-network-information-type ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "TransportationNetwork.Transportation-network-information-type:cd"
    ASN-NAME "Transportation-network-information-type"
    ASN-OBJECT-IDENTIFIER { tmddDataElements 202 }
    DEFINITION "Code representing the type of network information being requested."
    DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
    DATA-CONCEPT-TYPE data-element
    STANDARD "TMDD"
    DATA-TYPE "Transportation-network-information-type ::= ENUMERATED {
        node-inventory (1),
        node-status (2),
        link-inventory (3),
        link-status (4),
        route-inventory (5),
        route-status (6),
        network-inventory (7),
        other (8) }"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.4.20.2.2 XML REPRESENTATION

```
<xs:simpleType name="Transportation-network-information-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="8"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="node inventory"/>
        <xs:enumeration value="node status"/>
        <xs:enumeration value="link inventory"/>
        <xs:enumeration value="link status"/>
        <xs:enumeration value="route inventory"/>
        <xs:enumeration value="route status"/>
        <xs:enumeration value="network inventory"/>
        <xs:enumeration value="other"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.4.21 RoadwayNetwork Class Data Elements

3.4.21.1 transportation-network-name

3.4.21.1.1 ASN.1 REPRESENTATION

```
transportation-network-name ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RoadwayNetwork.Transportation-network-name:txt"
  ASN-NAME "Transportation-network-name"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 203 }
  DEFINITION "The user-defined name for a roadway, roadway reference, roadway
network, route, link, node or intersection name. Also applies to transit elements."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "Transportation-network-name ::= IA5String (SIZE(1..256))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.21.1.2 XML REPRESENTATION

```
<xs:simpleType name="Transportation-network-name">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.22 VideoSwitch Class Data Elements

3.4.22.1 vS-channel-count

3.4.22.1.1 ASN.1 REPRESENTATION

```
vS-channel-count ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "VideoSwitch.VS-channel-count:qty"
  ASN-NAME "VS-channel-count"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 204 }
  DEFINITION "A number used to represent the number of channels for a video
switch."
```

```
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE data-element
STANDARD "TMDD"
DATA-TYPE "VS-channel-count ::= INTEGER (0..4294967295)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "channels"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.22.1.2 XML REPRESENTATION

```
<xs:simpleType name="VS-channel-count">
  <xs:restriction base="xs:unsignedInt">
    <xs:minInclusive value="0"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.22.2 vS-frames-per-second

3.4.22.2.1 ASN.1 REPRESENTATION

```
vS-frames-per-second ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "VideoSwitch.VS-frames-per-second:rt"
  ASN-NAME "VS-frames-per-second"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 205 }
  DEFINITION "Number of image frames per second."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "VS-frames-per-second ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "frames per second"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.22.2.2 XML REPRESENTATION

```
<xs:simpleType name="VS-frames-per-second">
  <xs:restriction base="xs:unsignedByte">
    <xs:maxInclusive value="255"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.22.3 vS-pixel-count

3.4.22.3.1 ASN.1 REPRESENTATION

```
vS-pixel-count ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "VideoSwitch.VS-pixel-count:qty"
  ASN-NAME "VS-pixel-count"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 206 }
  DEFINITION "Image frame height or width in pixels."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "VS-pixel-count ::= INTEGER (0..65535)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "pixels"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.22.3.2 XML REPRESENTATION


```
<xs:simpleType name="VS-pixel-count">
  <xs:restriction base="xs:unsignedShort">
    <xs:maxInclusive value="65535"/>
  </xs:restriction>
</xs:simpleType>
```

3.4.22.4 vS-request-supported-type

3.4.22.4.1 ASN.1 REPRESENTATION

```
vS-request-supported-type ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "VideoSwitch.VS-request-supported-type:cd"
  ASN-NAME "VS-request-supported-type"
  ASN-OBJECT-IDENTIFIER { tmddDataElements 207 }
  DEFINITION "A code representing the type of switching supported."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-element
  STANDARD "TMDD"
  DATA-TYPE "VS-request-supported-type ::= ENUMERATED {
    switch-one-input-to-one-output (1) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.4.22.4.2 XML REPRESENTATION

```
<xs:simpleType name="VS-request-supported-type">
  <xs:union>
    <xs:simpleType>
      <xs:restriction base="xs:unsignedInt">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="1"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="switch-one-input-to-one-
output"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:union>
</xs:simpleType>
```

3.5 Object Classes

3.5.1 archivedData

```
archivedData ITS-OBJECT-CLASS ::= {
  DESCRIPTIVE-NAME "ArchivedData"
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 1 }
  DEFINITION "An object class representing center system interface dialogs and message
content for traffic data archived information management."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE object-class
  STANDARD "TMDD"
  ABSTRACT TRUE }
```

3.5.2 cCTV

```
cCTV ITS-OBJECT-CLASS ::= {
  DESCRIPTIVE-NAME "CCTV"
```

```
ASN-OBJECT-IDENTIFIER { tmddObjectClasses 2 }  
DEFINITION "An object class representing center system interface dialogs and message  
content for CCTV device management."  
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
DATA-CONCEPT-TYPE object-class  
STANDARD "TMDD"  
ABSTRACT TRUE }
```

3.5.3 connectionManagement

```
connectionManagement ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "ConnectionManagement"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 3 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for connection management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }
```

3.5.4 detector

```
detector ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "Detector"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 4 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for detector device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }
```

3.5.5 device

```
device ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "Device"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 5 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }
```

3.5.6 dMS

```
dMS ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "DMS"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 6 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for DMS device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }
```

3.5.7 eSS

```
eSS ITS-OBJECT-CLASS ::= {
```

```
DESCRIPTIVE-NAME "ESS"
ASN-OBJECT-IDENTIFIER { tmddObjectClasses 7 }
DEFINITION "An object class representing center system interface dialogs and message
content for ESS device and weather observation management."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE object-class
STANDARD "TMDD"
ABSTRACT TRUE }
```

3.5.8 event

```
event ITS-OBJECT-CLASS ::= {
DESCRIPTIVE-NAME "Event"
ASN-OBJECT-IDENTIFIER { tmddObjectClasses 8 }
DEFINITION "An object class representing center system interface dialogs and message
content for current, planned, and forecast events."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE object-class
STANDARD "TMDD"
ABSTRACT TRUE }
```

3.5.9 externalCenter

```
externalCenter ITS-OBJECT-CLASS ::= {
DESCRIPTIVE-NAME "ExternalCenter"
ASN-OBJECT-IDENTIFIER { tmddObjectClasses 9 }
DEFINITION "An object class representing center system interface dialogs and message
content for the center requesting or subscribing for information."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE object-class
STANDARD "TMDD"
ABSTRACT TRUE }
```

3.5.10 gate

```
gate ITS-OBJECT-CLASS ::= {
DESCRIPTIVE-NAME "Gate"
ASN-OBJECT-IDENTIFIER { tmddObjectClasses 10 }
DEFINITION "An object class representing center system interface dialogs and message
content for gate device management."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE object-class
STANDARD "TMDD"
ABSTRACT TRUE }
```

3.5.11 global

```
global ITS-OBJECT-CLASS ::= {
DESCRIPTIVE-NAME "Global"
ASN-OBJECT-IDENTIFIER { tmddObjectClasses 11 }
DEFINITION "An object class representing center system interface global data content
management."
DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
DATA-CONCEPT-TYPE object-class
STANDARD "TMDD"
ABSTRACT TRUE }
```

3.5.12 hAR

```
hAR ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "HAR"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 12 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for lane highway advisory radio device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.13 intersectionSignal

```
intersectionSignal ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 13 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for intersection signal device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.14 ICS

```
lCS ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "LCS"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 14 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for lane control signal device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.15 link

```
link ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "Link"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 15 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for transportation network link information management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.16 node

```
node ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "Node"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 16 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for transportation network node management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.17 organization

```
organization ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "Organization"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 17 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for organization and center information."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.18 ownerCenter

```
ownerCenter ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "OwnerCenter"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 18 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for the center providing or publishing information."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.19 rampMeter

```
rampMeter ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "RampMeter"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 19 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for ramp meter device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.20 route

```
route ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "Route"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 20 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for transportation network route information management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.21 section

```
section ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "Section"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 21 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for section management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.22 transportationNetwork

```
transportationNetwork ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "TransportationNetwork"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 22 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for transportation network information management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.5.23 videoSwitch

```
videoSwitch ITS-OBJECT-CLASS ::= {  
  DESCRIPTIVE-NAME "VideoSwitch"  
  ASN-OBJECT-IDENTIFIER { tmddObjectClasses 23 }  
  DEFINITION "An object class representing center system interface dialogs and message  
  content for video switch device management."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE object-class  
  STANDARD "TMDD"  
  ABSTRACT TRUE }  
}
```

3.6 External Data Entries

This section defines the structure of the external data concepts reused by this standard. The data concepts in this standard are divided into messages, data frames, and data elements. Messages are made up of content further defined in this document (i.e., made up of entries that are either atomic or complex but which are also defined in this document) and content defined externally to this document. Such external content is reused from other functional areas and standards developed by other groups and SDOs. The contents of this standard (both at the complete message level and its component parts) may be reused by other efforts elsewhere.

All text in this clause is considered normative. Definitions for this message set are presented in the following subclauses. If the definitions in the following subclauses conflict in any way with the definition in the external standard, the definition in the external standard shall take precedence.

The productions of ASN.1 which follow shall be considered normative in nature. While the majority of the normative content is reflected in the actual syntax of the ASN.1, some entries also have additional statements in the ASN.1 comments which shall be considered normative as well. In addition, the textual commentary provided with each entry (in sections marked "use" and "remarks") may also provide additional normative restrictions on the proper use of the entry being described. Users of this standard seeking to be in conformance with it shall follow the normative text outlined here.

3.6.1 CCTV Class Data Elements

3.6.1.1 rangePanLeftLimit

3.6.1.1.1 ASN.1 REPRESENTATION

```
rangePanLeftLimit ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "CCTV.RangePanLeftLimit:qty"  
  ASN-NAME "RangePanLeftLimit"  
  ASN-OBJECT-IDENTIFIER { cctvRange 2 }  
  DEFINITION "Specifies the panning left range limit in 1/100th degree units in a  
  clockwise direction from the Home Position. If the rangePanLeftLimit and the  
  rangePanRightLimit are both zero (0), then the device does not support panning  
}
```

movement. If the rangePanLeftLimit and the rangePanRightLimit are both 65535, then the device does not support the concept of right and left limits."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "RangePanLeftLimit ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "hundredths of a degree"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.2 rangePanRightLimit

3.6.1.2.1 ASN.1 REPRESENTATION

```
rangePanRightLimit ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "CCTV.RangePanRightLimit:qty"
ASN-NAME "RangePanRightLimit"
ASN-OBJECT-IDENTIFIER { cctvRange 3 }
DEFINITION "Specifies the panning right range limit in 1/100th degree units in a
clockwise direction from the Home Position. If the rangePanLeftLimit and the
rangePanRightLimit are both zero (0), then the device does not support panning
movement. If the rangePanLeftLimit and the rangePanRightLimit are both 65535, then the
device does not support the concept of right and left limits."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "RangePanRightLimit ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "hundredths of a degree"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.3 rangeTiltUpLimit

3.6.1.3.1 ASN.1 REPRESENTATION

```
rangeTiltUpLimit ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "CCTV.RangeTiltUpLimit:qty"
ASN-NAME "RangeTiltUpLimit"
ASN-OBJECT-IDENTIFIER { cctvRange 6 }
DEFINITION "Specifies the tilting up range limit in 1/100th degree units. The
zero point for measurement is the horizon line. Tilting upward indicates a positive
direction. If the rangeTiltUpLimit and the rangeTiltDownLimit are both zero (0), then
the device does not support tilting movement. If the rangeTiltUpLimit and the
rangeTiltDownLimit are both 65535, then the device does not support the concept of up
and down limits."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "RangeTiltUpLimit ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "hundredths of a degree"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.4 rangeTiltDownLimit

3.6.1.4.1 ASN.1 REPRESENTATION

```
rangeTiltDownLimit ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "CCTV.RangeTiltDownLimit:qty"
ASN-NAME "RangeTiltDownLimit"
```

```
ASN-OBJECT-IDENTIFIER { cctvRange 7 }
DEFINITION      "Specifies the tilting down range limit in 1/100th degree units. The
zero point for measurement is the horizon line. Tilting upward indicates a positive
direction. If the rangeTiltUpLimit and the rangeTiltDownLimit are both zero (0), then
the device does not support tilting movement. If the rangeTiltUpLimit and the
rangeTiltDownLimit are both 65535, then the device does not support the concept of up
and down limits."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "RangeTiltDownLimit ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "hundredths of a degree"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.5 rangeZoomLimit

3.6.1.5.1 ASN.1 REPRESENTATION

```
rangeZoomLimit ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "CCTV.RangeZoomLimit:qty"
ASN-NAME "RangeZoomLimit"
ASN-OBJECT-IDENTIFIER { cctvRange 8 }
DEFINITION      "Specifies the zoom range in arbitrary units. Used for absolute or
offset control. Zero (0) identifies that zoom limits are not supported. This number
represents the scalar zoom positioning beginning with zero (0) for wide and ending
with 65535 for telephoto."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "RangeZoomLimit ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.6 rangeFocusLimit

3.6.1.6.1 ASN.1 REPRESENTATION

```
rangeFocusLimit ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "CCTV.RangeFocusLimit:qty"
ASN-NAME "RangeFocusLimit"
ASN-OBJECT-IDENTIFIER { cctvRange 9 }
DEFINITION      "Specifies the focus range in arbitrary units. Used for absolute or
offset control. Zero (0) identifies that focus limits are not supported. This number
represents the scalar focus positioning beginning with zero (0) for near and ending
with 65535 for far."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "RangeFocusLimit ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.7 rangeIrisLimit

3.6.1.7.1 ASN.1 REPRESENTATION

```
rangeIrisLimit ITS-DATA-ELEMENT ::= {
```



```
DESCRIPTIVE-NAME "CCTV.RangeIrisLimit:qty"
ASN-NAME "RangeIrisLimit"
ASN-OBJECT-IDENTIFIER { cctvRange 10 }
DEFINITION          "Specifies the iris range in arbitrary units. Used for absolute or
offset control. Zero (0) identifies that iris limits are not supported. This number
represents the scalar zoom positioning beginning with zero (0) for open and ending
with 65535 for closed."
REMARKS             ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "RangeIrisLimit ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.8 presetGotoPosition

3.6.1.8.1 ASN.1 REPRESENTATION

```
presetGotoPosition ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "CCTV.PresetGotoPosition:nbr"
ASN-NAME "PresetGotoPosition"
ASN-OBJECT-IDENTIFIER { cctvPreset 1 }
DEFINITION          "Writing to this object commands the device to move to a preset if
that preset exists. Reading returns the last value written. This value is reset to
zero (0) upon the issuance of a pan, tilt, or zoom command."
REMARKS             ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "PresetGotoPosition ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.9 positionFocusLens

3.6.1.9.1 ASN.1 REPRESENTATION

```
positionFocusLens ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "CCTV.PositionFocusLens:cd"
ASN-NAME "PositionFocusLens"
ASN-OBJECT-IDENTIFIER { cctvPosition 4 }
DEFINITION          "Object is 4 bytes in length:
Byte 1 is the mode of operation defined as stop movement, delta, absolute, or
continuous movement,
Byte 2 is speed defined as a scalar unit with positive (+) being far and negative (-)
being near,
Bytes 3 and 4 specify a position or offset measurement in scalar units with a maximum
value of the specified limit."
REMARKS             ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "PositionFocusLens ::= OCTETString (SIZE(4))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.10 positionIrisLens

3.6.1.10.1 ASN.1 REPRESENTATION

```
positionIrisLens ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.PositionIrisLens:cd"
  ASN-NAME "PositionIrisLens"
  ASN-OBJECT-IDENTIFIER { cctvPosition 5 }
  DEFINITION          "Object is 4 bytes in length:
  Byte 1 is the mode of operation defined as stop movement, delta, absolute, or
  continuous movement,
  Byte 2 is speed defined as a scalar unit with positive (+) being closed and negative
  (-) being opened,
  Bytes 3 and 4 specify a position or offset measurement in scalar units with a maximum
  value of the specified limit."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1205"
  DATA-TYPE "PositionIrisLens ::= OCTETString (SIZE(4))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.11 positionTilt

3.6.1.11.1 ASN.1 REPRESENTATION

```
positionTilt ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.PositionTilt:cd"
  ASN-NAME "PositionTilt"
  ASN-OBJECT-IDENTIFIER { cctvPosition 2 }
  DEFINITION          "Object is 4 bytes in length:
  Byte 1 is the mode of operation defined as stop movement, delta, absolute, or
  continuous movement,
  Byte 2 is speed defined as a scalar unit with positive (+) being up and negative (-)
  being down,
  Bytes 3 and 4 specify a position or offset measurement in 1/100th degrees.
  The minimum amount of movement shall be one step as defined by the
  rangeMinimumTiltStepAngle."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1205"
  DATA-TYPE "PositionTilt ::= OCTETString (SIZE(4))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.12 positionPan

3.6.1.12.1 ASN.1 REPRESENTATION

```
positionPan ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.PositionPan:cd"
  ASN-NAME "PositionPan"
  ASN-OBJECT-IDENTIFIER { cctvPosition 1 }
  DEFINITION          "Object is 4 bytes in length:
  Byte 1 is the mode of operation defined as stop movement, delta, absolute, or
  continuous movement,
  Byte 2 is speed defined as a scalar unit with positive (+) being clockwise and
  negative (-) being counterclockwise,
  Bytes 3 and 4 specify a position or offset measurement in 1/100th degrees.
  The minimum amount of movement shall be one step as defined by the
  rangeMinimumPanStepAngle."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
```

```
STANDARD "NTCIP 1205"
DATA-TYPE "PositionPan ::= OCTETString (SIZE(4))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.13 positionZoomLens

3.6.1.13.1 ASN.1 REPRESENTATION

```
positionZoomLens ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.PositionZoomLens:cd"
  ASN-NAME "PositionZoomLens"
  ASN-OBJECT-IDENTIFIER { cctvPosition 3 }
  DEFINITION "Object is 4 bytes in length:
  Byte 1 is the mode of operation defined as stop movement, delta, absolute, or
  continuous movement,
  Byte 2 is speed defined as a scalar unit with positive (+) being telephoto and
  negative (-) being wide,
  Bytes 3 and 4 specify a position or offset measurement in scalar units with a maximum
  value of the specified limit."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1205"
  DATA-TYPE "PositionZoomLens ::= OCTETString (SIZE(4))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.14 systemCameraEquipped

3.6.1.14.1 ASN.1 REPRESENTATION

```
systemCameraEquipped ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.systemCameraEquipped:bin"
  ASN-NAME "SystemCameraEquipped"
  ASN-OBJECT-IDENTIFIER { cctvSystem 3 }
  DEFINITION "A bit mapped value as defined below:
    Bit7 0 = NO, 1 = YES denotes the availability of Camera Power (MSB),
    Bit6 0 = NO, 1 = YES denotes the availability of Heater Power,
    Bit5 0 = NO, 1 = YES denotes the availability of a Wiper,
    Bit4 0 = NO, 1 = YES denotes the availability of a Washer,
    Bit3 0 = NO, 1 = YES denotes the availability of a Blower,
    Bits2..0 Reserved (Bit0 = LSB).
  When read, this object returns last value written."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1205"
  DATA-TYPE "SystemCameraEquipped ::= OCTETString (SIZE(1))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.1.15 systemCameraFeatureControl

3.6.1.15.1 ASN.1 REPRESENTATION

```
systemCameraFeatureControl ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.systemCameraFeatureControl:bin"
  ASN-NAME "SystemCameraFeatureControl"
  ASN-OBJECT-IDENTIFIER { cctvSystem 1 }
```

```

DEFINITION      "A bit mapped value as defined below:
  Bytel
    Bit7 0 = OFF, 1 = ON for Camera Power (MSB),
    Bit6 0 = OFF, 1 = ON for Heater Power,
    Bit5 0 = OFF, 1 = ON for Wiper,
    Bit4 0 = OFF, 1 = ON for Washer,
    Bit3 0 = OFF, 1 = ON for Blower,
    Bits2..0 Reserved (Bit0 = LSB),
  Byte 2
    Bit7 0 = OFF, 1 = ON for activation and deactivation of the camera component
    (MSB),
    Bits6..0 Reserved (Bit0 = LSB)."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1205"
DATA-TYPE "SystemCameraFeatureControl ::= OCTETString (SIZE(2))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.6.1.16 systemCameraFeatureStatus

3.6.1.16.1 ASN.1 REPRESENTATION

```

systemCameraFeatureStatus ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "CCTV.systemCameraFeatureStatus:bin"
  ASN-NAME "SystemCameraFeatureStatus"
  ASN-OBJECT-IDENTIFIER { cctvSystem 2 }
  DEFINITION      " A bit mapped value as defined below:
    Bytel
      Bit7 0 = OFF, 1 = ON for status of Camera Power (MSB),
      Bit6 0 = OFF, 1 = ON for status of Heater Power,
      Bit5 0 = OFF, 1 = ON for status of Wiper,
      Bit4 0 = OFF, 1 = ON for status of Washer,
      Bit3 0 = OFF, 1 = ON for status of Blower,
      Bits2..0 Reserved (Bit0 = LSB)."
  REMARKS      ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1205"
  DATA-TYPE "SystemCameraFeatureStatus ::= OCTETString (SIZE(1))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.6.2 Detector Class Data Elements

3.6.2.1 sensorZoneOutputMode

3.6.2.1.1 ASN.1 REPRESENTATION

```

sensorZoneOutputMode ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Detector.sensorZoneOutputMode:cd"
  ASN-NAME "sensorZoneOutputMode"
  ASN-OBJECT-IDENTIFIER { outputConditioningEntry 1 }
  DEFINITION      " This object sets the length of the output during a detect
condition. These detect outputs are described as follows:
    other(1) - Other - an output mode other than that defined in this standard
    pulse(2) - Pulse - a pulse of 125ms (±25ms) is output when a vehicle is
        detected.
    presence(3) - Presence - the output lasts the duration of a detect condition
        or until the detector tunes out the detect signal.
    Invalid(255) - Invalid data - Something has invalid data."

```

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1209"
DATA-TYPE "sensorZoneOutputMode ::= INTEGER (1..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3 DMS Class Data Elements

3.6.3.1 defaultFont

3.6.3.1.1 ASN.1 REPRESENTATION

```
defaultFont ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.DefaultFont:nbr"
  ASN-NAME "DefaultFont"
  ASN-OBJECT-IDENTIFIER { multiCfg 5 }
  DEFINITION "Indicates the default font number (fontNumber-object) for a message.
  This object may be sub-ranged by an implementation"
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "DefaultFont ::= INTEGER (1..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.2 fontNumber

3.6.3.2.1 ASN.1 REPRESENTATION

```
fontNumber ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.FontNumber:id"
  ASN-NAME "FontNumber"
  ASN-OBJECT-IDENTIFIER { fontEntry 1 }
  DEFINITION "A unique, user-specified number for a particular font which can be
  different from the value of the fontIndex-object. This is the number referenced by
  MULTI when specifying a particular font. A device shall return a badValue error if
  this value is not unique."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "FontNumber ::= INTEGER (1..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.3 fontHeight

3.6.3.3.1 ASN.1 REPRESENTATION

```
fontHeight ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.FontHeight:qty"
  ASN-NAME "FontHeight"
  ASN-OBJECT-IDENTIFIER { fontEntry 4 }
  DEFINITION "Indicates the height of the font in pixels. Changing the value of
  this object invalidates this fontTable row, sets all corresponding characterWidth
  objects to zero (0), and sets all corresponding characterBitmap
  objects to zero length. Character Matrix and Line Matrix VMS shall subrange this
  object either to a value of zero (0) or the value of vmsCharacterHeightPixels; a Full
```

Matrix VMS shall subrange this object to the range of zero (0) to the value of vmsSignHeightPixels or 255, whichever is less."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "FontHeight ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "pixel"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.4 fontCharSpacing

3.6.3.4.1 ASN.1 REPRESENTATION

```
fontCharSpacing ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.FontCharSpacing:qty"
ASN-NAME "FontCharSpacing"
ASN-OBJECT-IDENTIFIER { fontEntry 5 }
DEFINITION "Indicates the default horizontal spacing (in pixels) between each of
the characters within the font. If the font changes on a line, then the average
character spacing of the two fonts, rounded up to the nearest whole pixel, shall be
used between the two characters where the font changes. Character Matrix VMS shall
ignore the value of this object; Line Matrix and Full Matrix VMS shall subrange this
object to the range of zero (0) to the smaller of 255 or the value of
vmsSignWidthPixels. See also the MULTI tag 'spacing character [sc]'."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "FontCharSpacing ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "pixel"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.5 fontLineSpacing

3.6.3.5.1 ASN.1 REPRESENTATION

```
fontLineSpacing ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.FontLineSpacing:qty"
ASN-NAME "FontLineSpacing"
ASN-OBJECT-IDENTIFIER { fontEntry 6 }
DEFINITION "Indicates the default vertical spacing (in pixels) between each of
the lines within the font for Full Matrix VMS. The line spacing for a line is the
largest font line spacing of all fonts used on that line. The number of
pixels between adjacent lines is the average of the 2 line spacings of each line,
rounded up to the nearest whole pixel. Character Matrix VMS and Line Matrix VMS shall
ignore the value of this object; Full Matrix VMS shall subrange this object to the
range of zero (0) to the smaller of 255 or the value of vmsSignHeightPixels. See also
the MULTI tag 'new line [nl]'."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "FontLineSpacing ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "pixel"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.6 fontVersionID

3.6.3.6.1 ASN.1 REPRESENTATION

```
fontVersionID ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.FontVersionID:id"
  ASN-NAME "FontVersionID"
  ASN-OBJECT-IDENTIFIER { fontEntry 7 }
  DEFINITION      "Each font that has been downloaded to a sign shall have a relatively
  unique ID. This ID shall be calculated using the CRC-16 algorithm defined in ISO 3309
  and the associated OER-encoded (as defined in NTCIP 1102)
  FontVersionByteStream.
  The sign shall respond with the version ID value that is valid at the time.
  FontVersionByteStream consists of the main font characteristics followed by n rows of
  CharacterInfoList, as shown by the following ASN.1 construct:
  FontVersionByteStream ::= SEQUENCE {
    fontInformation FontInformation,
    characterInfoList CharacterInfoList }
  FontInformation describes the characteristics of the font which are common to each
  character and defines the order in which this information appears when constructing
  the byte stream which is used to calculate the CRC. There is only one row of data for
  this SEQUENCE for a specific font, as defined by the following ASN.1 construct:
  FontInformation ::= SEQUENCE {
    fontNumber INTEGER (1..255),
    fontHeight INTEGER (0..255),
    fontCharSpacing INTEGER (0..255),
    fontLineSpacing INTEGER (0..255) }
  CharacterInfoList describes the characteristics of each defined character (e.g., where
  characterWidth is greater than 0) for the fontNumber indicated within the
  fontInformation field. The CharacterInformation is ordered by the characterNumber in
  an increasing format per the following ASN.1 construct:
  CharacterInfoList ::= SEQUENCE OF CharacterInformation
  CharacterInformation describes the characteristics of a single character and defines
  the objects and order of the objects within one row of CharacterInfoList, per the
  following ASN.1 construct:
  CharacterInformation SEQUENCE {
    characterNumber INTEGER (1..65535),
    characterWidth INTEGER (0..255),
    characterBitmap OCTET STRING }
  Complete definitions for these referenced objects are contained elsewhere in
  this document.
  The following is an example of developing the FontVersionByteStream value. Assume the
  following values for this example, where we only have 2 characters defined:
  fontNumber = 2,
  fontHeight = 7,
  fontCharSpacing = 1,
  fontLineSpacing = 3,
  characterWidth.52 = 7,
  characterBitmap.52 = 1C 59 34 6F E1 83 00,
  characterWidth.65 = 6,
  characterBitmap.65 = 7B 3C FF CF 3C C0
  The resulting string in hex would be:
  FontVersionByteStream = 02 07 01 03 01 02 00 34 07 07 1C 59 34 6F E1 83 00 00 41 06 06
  7B 3C FF CF 3C C0
  CRC = 0x52ED
  fontVersionID = 0xED52
  Clarifications:
  a) characterNumber is a two-byte unsigned integer.
  b) characterBitmap is defined as OCTET STRING without a size constraint. (the length
  octets shall be present)
  c) CharacterInfoList is defined as SEQUENCE-OF that requires a quantity field
  (unconstrained unsigned integer) 'with a value equal to the number of times the
  componentType is repeated within the value field'.
  The resulting graphic depictions of those 2 defined characters are:
  0001110
  0010110
  0100110
  1000110
  1111111
```

```
0000110
0000110
and
011110
110011
110011
111111
110011
110011
110011
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "FontVersionID ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.7 fontStatus

3.6.3.7.1 ASN.1 REPRESENTATION

```
fontStatus ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.FontStatus:cd"
  ASN-NAME "FontStatus"
  ASN-OBJECT-IDENTIFIER { fontEntry 8 }
  DEFINITION
    "This object defines a state machine allowing to manage fonts stored
    within a DMS. The definitions of the possible values are:
    notUsed (1) - a state indicating that this row in this table is currently not used.
    modifying (2) - a state indicating that the objects defined in this row can be
    modified.
    calculatingID (3) - a state indicating that the fontVersionID for this row is
    currently being calculated.
    readyForUse (4) - a state indicating that the font defined in this row can be used for
    message display.
    inUse (5) - a state indicating that the font defined in this row is currently being
    used for the displayed message.
    permanent (6) - a state indicating that the font defined in this row is a permanent
    font that cannot be modified. This font is provided by the sign vendor and can be used
    for message display.
    modifyReq (7) - command sent to request the transition to the modifying state..
    readyForUseReq (8) - command sent to request the transition to the readyForUse state.
    notUsedReq (9) - command sent to request the transition to the notUsed state.
    unmanagedReq (10) - command sent to request the transition to the unmanaged state.
    unmanaged (11) - a state indicating that the font defined in this row is a font that
    is not managed using the fontStatus object. This state can be use to manage the font
    as in NTCIP 1203 v1. Note: attempts to modify permanent fonts while in this state
    shall generate SNMP GenErr."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "FontStatus ::= ENUMERATED {
    notused (1),
    modifying (2),
    calculatingid (3),
    readyforuse (4),
    inuse (5),
    permanent (6),
    modifyreq (7),
    req (8),
    notusedreq (9),
    unmanagedreq (10),
    unmanaged (11),
```



```

        insert-extension-values-here (12),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.3.8 characterNumber

3.6.3.8.1 ASN.1 REPRESENTATION

```

characterNumber ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.CharacterNumber:id"
  ASN-NAME "CharacterNumber"
  ASN-OBJECT-IDENTIFIER { characterEntry 1 }
  DEFINITION
    "Indicates the binary value associated with this character of this
    font. For example, if the font set followed the ASCII numbering scheme, the character
    giving the bitmap of 'A' would be characterNumber 65 (41 hex).\"
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "CharacterNumber ::= INTEGER (1..65535)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.3.9 characterWidth

3.6.3.9.1 ASN.1 REPRESENTATION

```

characterWidth ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.CharacterWidth:qty"
  ASN-NAME "CharacterWidth"
  ASN-OBJECT-IDENTIFIER { characterEntry 2 }
  DEFINITION
    "Indicates the width of this character in pixels. A width of zero (0)
    indicates this row is invalid. A Character Matrix VMS shall subrange this object
    either to a value of zero (0) or the value of the vmsCharacterWidthPixels object; a
    Line Matrix or Full Matrix VMS shall subrange this object to a range of zero (0) to
    vmsSignWidthPixels.\"
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "CharacterWidth ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "pixel"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.3.10 characterBitmap

3.6.3.10.1 ASN.1 REPRESENTATION

```

characterBitmap ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.CharacterBitmap:cd"
  ASN-NAME "CharacterBitmap"
  ASN-OBJECT-IDENTIFIER { characterEntry 3 }
  DEFINITION
    "A bitmap that defines each pixel within a rectangular region as
    being either displayed in the foreground color (bit=1) or transparent (bit=0). If the
    pixel is transparent, it remains whatever color existed in the message before drawing
    the character. This might be the background color, a color rectangle (see MULTI tag)
    or a graphic. The result of this bitmap is how the character appears on the sign.
    The octet string is treated as a binary bit string. The most significant bit defines
    the state of the pixel in the upper left corner of the rectangular region. The

```

rectangular region is processed by rows, left to right, then top to bottom. The size of the rectangular region is defined by the `fontHeight` and `characterWidth` objects; any remaining bits shall be ignored, except for use in the calculation of the CRC. This object shall be subranged by the device to the maximum number of bytes as indicated by `fontMaxCharacterSize`.

NOTE: Version 1 Compatibility: Version 1 of this standard defined the bits as ON (foreground color) or OFF (background color)."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "CharacterBitmap ::= OCTETString"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.11 dmsMaxNumberPages

3.6.3.11.1 ASN.1 REPRESENTATION

```
dmsMaxNumberPages ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMaxNumberPages:qty"
ASN-NAME "DmsMaxNumberPages"
ASN-OBJECT-IDENTIFIER { multiCfg 15 }
DEFINITION "Indicates the maximum number of pages allowed in the
dmsMessageMultiString."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMaxNumberPages ::= INTEGER (1..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "page"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.12 dmsMaxMultiStringLength

3.6.3.12.1 ASN.1 REPRESENTATION

```
dmsMaxMultiStringLength ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMaxMultiStringLength:qty"
ASN-NAME "DmsMaxMultiStringLength"
ASN-OBJECT-IDENTIFIER { multiCfg 16 }
DEFINITION "Indicates the maximum number of bytes allowed within the
dmsMessageMultiString."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMaxMultiStringLength ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "byte"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.13 dmsColorScheme

3.6.3.13.1 ASN.1 REPRESENTATION

```
dmsColorScheme ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsColorScheme:cd"
ASN-NAME "DmsColorScheme"
ASN-OBJECT-IDENTIFIER { multiCfg 11 }
```

DEFINITION "Indicates the color scheme supported by the DMS. The values are defined as:

monochrome1bit (1): - Only two states are available for each pixel: on (1) and off (0). A value of 'on(1)' shall indicate that the default foreground color is used and value of 'off(0)' shall indicate that the default background color is used.

monochrome8bit (2): - this color palette supports 256 shades ranging from 0 (off) to 255 (full intensity). Values between zero and 255 are scaled to the nearest intensity level supported by the VMS. Therefore, it is not required that a VMS have true 8-bit (256 shade) capabilities.

colorClassic (3): - as defined in Version 1 of NTCIP 1203, the following values are available:

black (0),
red (1),
yellow (2),
green(3),
cyan (4),
blue (5),
magenta (6),
white (7),
orange (8),
amber (9).

color24bit (4): - Each pixel is defined by three bytes, one each for red, green, and blue. Each color value ranges from 0 (off) to 255 (full intensity). The combination of the red, green, and blue colors equals the 16,777,216 number of colors.

Each DMS must support the monochrome1bit scheme. The DMS may also optionally support one, but no more than one, of the other possible schemes. If the DMS supports only the monochrome1bit scheme, then that scheme is indicated. Otherwise, the other scheme is indicated."

REMARKS ""

DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsColorScheme ::= ENUMERATED {
 monochrome1bit (1),
 monochrome8bit (2),
 colorclassic (3),
 color24bit (4),
 insert-extension-values-here (5),
 ...}"

FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.3.14 dmsMsgSourceMode

3.6.3.14.1 ASN.1 REPRESENTATION

dmsMsgSourceMode ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMsgSourceMode:cd"
ASN-NAME "DmsMsgSourceMode"
ASN-OBJECT-IDENTIFIER { signControl 7 }
DEFINITION "Indicates the source that initiated the currently displayed message. The enumerations are defined as:
other (1) - the currently displayed message was activated based on a condition other than the ones defined below. This would include any auxiliary devices.
local (2) - the currently displayed message was activated at the sign controller using either an onboard terminal or a local interface.
external (3) - the currently displayed message was activated from a locally connected device using serial (or other type of) connection to the sign controller such as a laptop or a PDA. This mode shall only be used, if the sign controller is capable of distinguishing between a local input (see definition of 'local (2)') and a serial connection.
central (8) - the currently displayed message was activated from the central computer.
timebasedScheduler (9) - the currently displayed message was activated from the timebased scheduler as configured within the sign controller.

```

powerRecovery (10) - the currently displayed message was activated based on the
settings within the dmsLongPowerRecoveryMessage, dmsShortPowerRecoveryMessage, and the
dmsShortPowerLossTime objects.
reset (11) - the currently displayed message was activated based on the settings
within the dmsResetMessage object.
commLoss (12) - the currently displayed message was activated based on the settings
within the dmsCommunicationsLossMessage object.
powerLoss (13) - the currently displayed message was activated based on the settings
within the dmsPowerLossMessage object. Note: it may not be possible to point to this
message depending on the technology, e.g. it may not be possible to display a message
on pure LED or fiber-optic signs DURING power loss.
endDuration (14) - the currently displayed message was activated based on the settings
within the dmsEndDurationMessage object."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMsgSourceMode ::= ENUMERATED {
    other (1),
    local (2),
    external (3),
    othercom1-(retired) (4),
    othercom2-(retired) (5),
    othercom3-(retired) (6),
    othercom4-(retired) (7),
    central (8),
    timebasedscheduler (9),
    powerrecovery (10),
    reset (11),
    commloss (12),
    powerloss (13),
    endduration (14),
    insert-extension-values-here (15),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.3.15 dmsSupportedMultiTags

3.6.3.15.1 ASN.1 REPRESENTATION

```

dmsSupportedMultiTags ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "DMS.DmsSupportedMultiTags:cd"
    ASN-NAME "DmsSupportedMultiTags"
    ASN-OBJECT-IDENTIFIER { multiCfg 14 }
    DEFINITION "An indication of the MULTI Tags supported by the device. This object
    is a bitmap representation of tag support. When a bit is set (=1), the device supports
    the corresponding tag. When a bit is cleared (=0), the device does not support the
    corresponding tag.
    Bit 0 : color background[cbx] / [cbr,g,b]
    Bit 1 : color foreground[cfx] / [cfr,g,b]
    Bit 2 : flashing[fltxoy] / [floytx]
    Bit 3 : font[fox] / [fox,cccc]
    Bit 4 : graphic [gn] / [gn,x,y] / [gn,x,y,cccc]
    Bit 5 : hexadecimal character[hcx]
    Bit 6 : justification line[jlx]
    Bit 7 : justification page[jpx]
    Bit 8 : manufacturer specific[msx,y]
    Bit 9 : moving text[mvtdw,s,r,text]
    Bit 10 : new line[nlx]
    Bit 11 : new page[np]
    Bit 12 : page time[ptxoy]
    Bit 13 : spacing character[scx]
    Bit 14 : field local time 12 hour[f1]

```

```

Bit 15 : field local time 24 hour[f2]
Bit 16 : ambient temperature Celsius[f3]
Bit 17 : ambient temperature Fahrenheit[f4]
Bit 18 : speed km/h[f5]
Bit 19 : speed m/h[f6]
Bit 20 : day of week[f7]
Bit 21 : date of month[f8]
Bit 22 : month of year[f9]
Bit 23 : year 2 digits[f10]
Bit 24 : year 4 digits[f11]
Bit 25 : local time 12 hour AM/PM[f12]
Bit 26 : local time 12 hour am/pm[f13]
Bit 27 : text rectangle [trx,y,w,h]
Bit 28 : color rectangle [crx,y,w,h,z] / [crx,y,w,h,r,g,b]
Bit 29 : Page background [pbz] / [pbr,g,b]"
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsSupportedMultiTags ::= OCTETString (SIZE(4))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.16 dmsMessageMultiString

3.6.3.16.1 ASN.1 REPRESENTATION

```

dmsMessageMultiString ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMessageMultiString:txt"
ASN-NAME "DmsMessageMultiString"
ASN-OBJECT-IDENTIFIER { dmsMessageEntry 3 }
DEFINITION "Contains the message written in MULTI-language as defined in Section
6 and as subranged by the restrictions defined by dmsMaxMultiStringLength and
dmsSupportedMultiTags. When the primary index is 'schedule', 'blank', 'currentBuffer'
or 'permanent', this object shall return a genErr to any SET-request. When the primary
index is 'schedule', the object shall return the MULTI string of the currently
scheduled message in response to a GET-request (regardless whether this message is
actually being displayed). The value of the MULTI string is not allowed to have any
null character."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMessageMultiString ::= OCTETString"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.17 dmsMessageBeacon

3.6.3.17.1 ASN.1 REPRESENTATION

```

dmsMessageBeacon ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMessageBeacon:cd"
ASN-NAME "DmsMessageBeacon"
ASN-OBJECT-IDENTIFIER { dmsMessageEntry 6 }
DEFINITION "Indicates if connected beacon(s) are to be activated when the
associated message is displayed. Zero (0) = Beacon(s) are Disabled ; one (1) =
Beacon(s) are Enabled. When the primary index is 'schedule', 'blank', 'currentBuffer',
or 'permanent', this object shall return a genErr to any SETrequest.
When the primary index is 'schedule', the object shall return the dmsMessageBeacon
setting of the currently scheduled message in response to a GET-request (regardless
whether this message is actually being displayed). When the dmsMessageMemoryType is
```

'permanent', the object shall return the dmsMessageBeacon setting of the factory-preset value in response to a GETrequest."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMessageBeacon ::= INTEGER (0..1)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.18 dmsMsgTableSource

3.6.3.18.1 ASN.1 REPRESENTATION

```
dmsMsgTableSource ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMsgTableSource:id"
ASN-NAME "DmsMsgTableSource"
ASN-OBJECT-IDENTIFIER { signControl 5 }
DEFINITION "Identifies the message number used to generate the currently
displayed message. This object is written to by the device when the new message is
loaded into the currentBuffer of the dmsMessageTable. The value of this object
contains the message ID code of the message that was copied into the 'currentBuffer'.
Note: MessageIDCode ::= OCTET STRING (SIZE(5)). The MessageIDCode consists of those
parameters required to define a message within a dmsMessageTable. It is defined as an
OCTET STRING containing the OER-encoding of the following ASN.1 structure
```

```
MessageIDCodeStructure ::= SEQUENCE {
    dmsMessageMemoryType INTEGER (0..255),
    dmsMessageNumber INTEGER (0..65535),
    dmsMessageCRC OCTET STRING (SIZE (2)) }
```

This value can only be of message type 'permanent', 'volatile', 'changeable', or 'blank'."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMsgTableSource ::= OCTETString"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.19 dmsMessageStatus

3.6.3.19.1 ASN.1 REPRESENTATION

```
dmsMessageStatus ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMessageStatus:cd"
ASN-NAME "DmsMessageStatus"
ASN-OBJECT-IDENTIFIER { dmsMessageEntry 9 }
DEFINITION "Indicates the current state of the message. This state-machine
allows for defining a message, validating a message, and deleting a message."
```

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMessageStatus ::= ENUMERATED {
    notused (1),
    modifying (2),
    validating (3),
    valid (4),
    error (5),
    modifyreq (6),
    validatereq (7),
    notusedreq (8),
```

```

        insert-extension-values-here (9),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.3.20 dmsMessageMemoryType

3.6.3.20.1 ASN.1 REPRESENTATION

```

dmsMessageMemoryType ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.DmsMessageMemoryType:cd"
  ASN-NAME "DmsMessageMemoryType"
  ASN-OBJECT-IDENTIFIER { dmsMessageEntry 1 }
  DEFINITION
    "Indicates the memory-type used to store a message. Also provides
    access to current message (currentBuffer) and currently scheduled message (schedule).
    The rows associated with the 'currentBuffer', 'schedule', and 'blank' message types
    cannot be written into, because these are either filled in by the controller
    (currentBuffer and schedule) or pre-defined and not modifiable (blank).
    The definitions of the enumerated values are:
    other - any other type of memory type that is not listed within one of the values
    below, refer to device manual;
    permanent - non-volatile and non-changeable;
    changeable - non-volatile and changeable;
    volatile - volatile and changeable;
    currentBuffer - contains the information regarding the currently displayed message
    (basically a copy of the message table row contents of the message that was
    successfully activated). Only one entry in the table can have the value of
    currentBuffer and the value of the dmsMessageNumber object shall be one (1). The
    content of the dmsMessageMultiString object shall be the currently displayed message
    (including a scheduled message), not the content of a failed message activation
    attempt;
    schedule - this entry contains information regarding the currently scheduled message
    as determined by the time-base scheduler (if present). Only one entry in the table can
    have the value of 'schedule' and the value of dmsMessageNumber for this entry shall be
    1. Displaying a message through this table row shall set the dmsMsgSourceMode object
    value to 'timebasedScheduler'. When no message is currently active based upon the
    schedule or if the schedule currently does not point to any message within the message
    table, the schedule entry shall contain a copy of dmsMessageMemoryType 7 (blank) with
    a dmsMessageNumber value of 1.
    blank - there shall be 255 (message numbers 1 through 255) pre-defined, static rows
    with this message type. These rows are defined so that message codes (e.g., objects
    with SYNTAX of either MessageIDCode or MessageActivationCode) can blank the sign at a
    stated run-time priority. The run-time priority of the blank message is equal to the
    message number (e.g., blank message number 1 has a run time priority of 1 and so on).
    The dmsMessageCRC for all messages of this type shall be 0x0000 and the
    dmsMessageMultiString shall be an OCTET STRING with a length of zero (0). The
    activation priority shall be determined from the activation priority of the
    MessageActivationCode."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "DmsMessageMemoryType ::= ENUMERATED {
    other-(retired) (1),
    permanent (2),
    changeable (3),
    volatile (4),
    currentbuffer (5),
    schedule (6),
    blank (7),
    insert-extension-values-here (8),
    ...}"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""

```

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.3.21 dmsSignTechnology

3.6.3.21.1 ASN.1 REPRESENTATION

```
dmsSignTechnology ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.DmsSignTechnology:cd"  
  ASN-NAME "DmsSignTechnology"  
  ASN-OBJECT-IDENTIFIER { dmsSignCfg 9 }  
  DEFINITION      "Indicates the utilized technology in a bitmap format (Hybrids have  
to set the bits for all technologies that the sign utilizes).  
  Bit 0- Other,  
  Bit 1- LED,  
  Bit 2- Flip Disk,  
  Bit 3- Fiber Optics,  
  Bit 4- Shuttered,  
  Bit 5- Bulb,  
  Bit 6- Drum  
  If a bit is set to one (1), then the associated feature exists; if the bit is set to  
zero (0), then the associated feature does not exist."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1203"  
  DATA-TYPE "DmsSignTechnology ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.22 dmsBeaconType

3.6.3.22.1 ASN.1 REPRESENTATION

```
dmsBeaconType ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.DmsBeaconType:cd"  
  ASN-NAME "DmsBeaconType"  
  ASN-OBJECT-IDENTIFIER { dmsSignCfg 8 }  
  DEFINITION      "Indicates the configuration of the type, numbers and flashing  
patterns of beacons on a sign. The definitions are:  
other: other types, numbers and patterns of beacons attached to the sign display.  
none: no beacons attached to the sign display  
oneBeacon: one flashing beacon  
twoBeaconSyncFlash: two beacons, synchronized flashing  
twoBeaconsOppFlash: two beacons, opposing flashing  
fourBeaconSyncFlash: four beacons, synchronized flashing  
fourBeaconAltRowFlash: four beacons, alternate row flashing  
fourBeaconAltColumnFlash: four beacons, alternate column flashing  
fourBeaconAltDiagonalFlash: four beacons, alternate diagonal flashing  
fourBeaconNoSyncFlash: four beacons, no synchronized flashing  
oneBeaconStrobe: one beacon, strobe light  
twoBeaconStrobe: two beacons, strobe light  
fourBeaconStrobe: four beacons, strobe light"  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1203"  
  DATA-TYPE "DmsBeaconType ::= ENUMERATED {  
    other (1),  
    none (2),  
    onebeacon (3),  
    twobeaconsyncflash (4),  
    twobeaconsoppflash (5),  
    fourbeaconsyncflash (6),
```



```

    fourbeaconaltrowflash (7),
    fourbeaconaltcolumnflash (8),
    fourbeaconaltdiagonalflash (9),
    fourbeaconnosyncflash (10),
    onebeaconstrobe (11),
    twobeaconstrobe (12),
    fourbeaconstrobe (13),
    insert-extension-values-here (14),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.3.23 dmsMessageRunTimePriority

3.6.3.23.1 ASN.1 REPRESENTATION

```

dmsMessageRunTimePriority ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.DmsMessageRunTimePriority:nbr"
  ASN-NAME "DmsMessageRunTimePriority"
  ASN-OBJECT-IDENTIFIER { dmsMessageEntry 8 }
  DEFINITION      "Indicates the run time priority assigned to a particular message.
The value of 1 indicates the lowest level, the value of 255 indicates the highest
level. When the dmsMessageMemoryType is 'schedule,' the value set in this object (e.g.
dmsMessageRunTimePriority.6.1) shall override the runtime priority of the scheduled
message. When the dmsMessageMemoryType is 'blank', the value returned shall be equal
to the dmsMessageNumber of that particular message.
When the dmsMessageMemoryType is 'permanent', the object shall return the
dmsMessageRunTimePriority setting of the factory-preset value in response to a GET-
request."
  REMARKS      ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "DmsMessageRunTimePriority ::= INTEGER (1..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.3.24 dmsMessageTimeRemaining

3.6.3.24.1 ASN.1 REPRESENTATION

```

dmsMessageTimeRemaining ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.DmsMessageTimeRemaining:qty"
  ASN-NAME "DmsMessageTimeRemaining"
  ASN-OBJECT-IDENTIFIER { signControl 4 }
  DEFINITION      "Indicates the amount of remaining time in minutes that the current
message shall be active. The time shall be accurate to the nearest second and rounded
up to the next full minute. For example, a value of 2 shall indicate that the time
remaining is between 1 minute and 0.1 seconds and 2 minutes.
When a new message is activated with a minute-based duration, or this object is
directly SET, the minute-based duration value shall be multiplied by 60 to determine
the number of seconds that the message shall be active. Thus, if a message activation
is for 2 minutes, the DMS displays the message for 120 seconds.
The value 65535 indicates an infinite duration. A value of zero (0) shall indicate
that the current message display duration has expired.
A SET operation on this object shall allow a Central Computer to extend or shorten the
duration of the message. Setting this object to zero (0) shall result in the immediate
display of the dmsEndDurationMessage."
  REMARKS      ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"

```

```
DATA-TYPE "DmsMessageTimeRemaining ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "minute"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.25 vmsSignHeightPixels

3.6.3.25.1 ASN.1 REPRESENTATION

```
vmsSignHeightPixels ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.VmsSignHeightPixels:qty"
  ASN-NAME "VmsSignHeightPixels"
  ASN-OBJECT-IDENTIFIER { vmsCfg 3 }
  DEFINITION "Indicates the number of rows of pixels for the entire sign."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "VmsSignHeightPixels ::= INTEGER (0..65535)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "pixel"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.26 vmsSignWidthPixels

3.6.3.26.1 ASN.1 REPRESENTATION

```
vmsSignWidthPixels ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.VmsSignWidthPixels:qty"
  ASN-NAME "VmsSignWidthPixels"
  ASN-OBJECT-IDENTIFIER { vmsCfg 4 }
  DEFINITION "Indicates the number of columns of pixels for the entire sign."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "VmsSignWidthPixels ::= INTEGER (0..65535)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "pixel"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.27 dmsSignHeight

3.6.3.27.1 ASN.1 REPRESENTATION

```
dmsSignHeight ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "DMS.DmsSignHeight:qty"
  ASN-NAME "DmsSignHeight"
  ASN-OBJECT-IDENTIFIER { dmsSignCfg 3 }
  DEFINITION "Indicates the sign height in millimeters including the border (dmsVerticalBorder)."
```

REMARKS ""

```
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1203"
  DATA-TYPE "DmsSignHeight ::= INTEGER (0..65535)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "millimeter"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.28 dmsSignWidth

3.6.3.28.1 ASN.1 REPRESENTATION

```
dmsSignWidth ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.DmsSignWidth:qty"  
  ASN-NAME "DmsSignWidth"  
  ASN-OBJECT-IDENTIFIER { dmsSignCfg 4 }  
  DEFINITION      "Indicates the sign width in millimeters including the border  
  (dmsHorizontalBorder)."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1203"  
  DATA-TYPE "DmsSignWidth ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "millimeter"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.29 vmsCharacterHeightPixels

3.6.3.29.1 ASN.1 REPRESENTATION

```
vmsCharacterHeightPixels ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.VmsCharacterHeightPixels:qty"  
  ASN-NAME "VmsCharacterHeightPixels"  
  ASN-OBJECT-IDENTIFIER { vmsCfg 1 }  
  DEFINITION      "Indicates the height of a single character in Pixels. The value zero  
  (0) indicates a variable character height, which implies a full-matrix sign."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1203"  
  DATA-TYPE "VmsCharacterHeightPixels ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "pixel"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.30 vmsCharacterWidthPixels

3.6.3.30.1 ASN.1 REPRESENTATION

```
vmsCharacterWidthPixels ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.VmsCharacterWidthPixels:qty"  
  ASN-NAME "VmsCharacterWidthPixels"  
  ASN-OBJECT-IDENTIFIER { vmsCfg 2 }  
  DEFINITION      "Indicates the width of a single character in Pixels. The value zero  
  (0) indicates a variable character width, which implies either a fullmatrix or line-  
  matrix sign."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1203"  
  DATA-TYPE "VmsCharacterWidthPixels ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "pixel"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.31 dmsVerticalBorder

3.6.3.31.1 ASN.1 REPRESENTATION

```
dmsVerticalBorder ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.DmsVerticalBorder:qty"  
  ASN-NAME "DmsVerticalBorder"  
  ASN-OBJECT-IDENTIFIER { dmsSignCfg 6 }
```

DEFINITION "Indicates the minimum border distance, in millimeters, that exists on the top and bottom of the sign."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsVerticalBorder ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "millimeter"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.3.32 dmsHorizontalBorder

3.6.3.32.1 ASN.1 REPRESENTATION

```
dmsHorizontalBorder ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.DmsHorizontalBorder:qty"  
  ASN-NAME "DmsHorizontalBorder"  
  ASN-OBJECT-IDENTIFIER { dmsSignCfg 5 }  
  DEFINITION "Indicates the minimum border distance, in millimeters, that exists  
on the left and right sides of the sign."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1203"  
  DATA-TYPE "DmsHorizontalBorder ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "millimeter"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.33 vmsHorizontalPitch

3.6.3.33.1 ASN.1 REPRESENTATION

```
vmsHorizontalPitch ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.VmsHorizontalPitch:qty"  
  ASN-NAME "VmsHorizontalPitch"  
  ASN-OBJECT-IDENTIFIER { vmsCfg 5 }  
  DEFINITION "Indicates the horizontal distance from the center of one pixel to  
the center of the neighboring pixel in millimeters. The horizontal pitch on a line  
matrix DMS does not apply to the spacing between lines but does apply to the distance  
between pixels within a line. The horizontal pitch on a character matrix DMS does not  
apply to the spacing between characters but does apply to the distance between pixels  
within a character."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1203"  
  DATA-TYPE "VmsHorizontalPitch ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "millimeter"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.34 vmsVerticalPitch

3.6.3.34.1 ASN.1 REPRESENTATION

```
vmsVerticalPitch ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "DMS.VmsVerticalPitch:qty"  
  ASN-NAME "VmsVerticalPitch"  
  ASN-OBJECT-IDENTIFIER { vmsCfg 6 }  
  DEFINITION "Indicates the vertical distance from the center of one pixel to the  
center of the neighboring pixel in millimeters. The vertical pitch on a character
```

matrix DMS does not apply to the spacing between characters but does apply to the distance between pixels within a character."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "VmsVerticalPitch ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "millimeter"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.35 dmsSignType

3.6.3.35.1 ASN.1 REPRESENTATION

```
dmsSignType ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsSignType:cd"
ASN-NAME "DmsSignType"
ASN-OBJECT-IDENTIFIER { dmsSignCfg 1 }
DEFINITION "Indicates the type of sign. The descriptions are:
    other: Device not specified through any other definition, refer to device manual,
    bos: Device is a Blank-Out Sign,
    cms : Device is a Changeable Message Sign,
    vmsChar : Device is a Variable Message Sign with character matrix setup,
    vmsLine : Device is a Variable Message Sign with line matrix setup,
    vmsFull: Device is a Variable Message Sign with full matrix setup.
Same is true for all portable signs."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsSignTechnology ::= ENUMERATED {
    other (1),
    bos (2),
    cms (3),
    vmsChar (4),
    vmsLine (5),
    vmsFull (6),
    portableOther (129),
    portableBOS (130),
    portableCMS (131),
    portableVMSChar (132),
    portableVMSLine (133),
    portableVMSFull (134)} "
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.36 dmsMessageCRC

3.6.3.36.1 ASN.1 REPRESENTATION

```
dmsMessageCRC ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMessageCRC:cd"
ASN-NAME "DmsMessageCRC"
ASN-OBJECT-IDENTIFIER { dmsMessageEntry 5 }
DEFINITION "Indicates the CRC-16 (polynomial defined in ISO/IEC 3309) value
created using the values of the dmsMessageMultiString (MULTI-Message), the
dmsMessageBeacon, and the dmsMessagePixelService objects in the order listed, not
including the OER type or length fields. Note that the calculation shall assume a
value of zero (0) for the dmsMessageBeacon object and/or for the
dmsMessagePixelService object if they are not supported. For messages of the 'blank'
message type, the above algorithm shall be ignored and the dmsMessageCRC value shall
always be zero (0). For messages of the 'schedule' message type, the CRC value of the
```

currently scheduled message shall always be returned (regardless whether this message is actually being displayed)."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMessageCRC ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.3.37 dmsMessageNumber

3.6.3.37.1 ASN.1 REPRESENTATION

```
dmsMessageNumber ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "DMS.DmsMessageNumber:id"
ASN-NAME "DmsMessageNumber"
ASN-OBJECT-IDENTIFIER { dmsMessageEntry 2 }
DEFINITION "Enumerated listing of row entries within the value of the primary
index to this table (dmsMessageMemoryType -object). When the primary index is
'currentBuffer' or 'schedule', then this value must be one (1). When the primary index
is 'blank', this value shall be from 1 through 255 and all compliant devices must
support all 255 of these 'blank' rows."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1203"
DATA-TYPE "DmsMessageNumber ::= INTEGER (1..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4 ESS Class Data Elements

3.6.4.1 essNtcipCategory

3.6.4.1.1 ASN.1 REPRESENTATION

```
essNtcipCategory ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssNtcipCategory:cd"
ASN-NAME "EssNtcipCategory"
ASN-OBJECT-IDENTIFIER { essNtcipIdentification 1 }
DEFINITION "Indicates the category of station as it relates to mobility"
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssNtcipCategory ::= ENUMERATED {
    other (1),
    permanent (2),
    transportable (3),
    mobile (4),
    insert-extension-values-here (5),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.2 essTypeofStation

3.6.4.2.1 ASN.1 REPRESENTATION

```
essTypeofStation ITS-DATA-ELEMENT ::= {
```

```
DESCRIPTIVE-NAME "ESS.EssTypeofStation:cd"
ASN-NAME "EssTypeofStation"
ASN-OBJECT-IDENTIFIER { essBufrInstrumentation 1 }
DEFINITION      "Integer value that indicates the type of station. If the station is
a hybrid station, it shall be defined as two stations, one staffed and one automatic.
0 - automatic the data is collected electronically/mechanically
1 - staffed the data is collected by humans
3 - missingValue the type of station is unknown. "
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssTypeofStation ::= INTEGER (0..3)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.3 essDoorStatus

3.6.4.3.1 ASN.1 REPRESENTATION

```
essDoorStatus ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssDoorStatus:cd"
ASN-NAME "EssDoorStatus"
ASN-OBJECT-IDENTIFIER { essNtcipInstrumentation 1 }
DEFINITION      "Indicates whether any of the doors attached to the station are open.
If the value is one (1), at least one door is open; if the value is zero (0), all
doors associated with the ESS are closed."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssDoorStatus ::= INTEGER (0..1)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.4 essBatteryStatus

3.6.4.4.1 ASN.1 REPRESENTATION

```
essBatteryStatus ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssBatteryStatus:pct"
ASN-NAME "EssBatteryStatus"
ASN-OBJECT-IDENTIFIER { essNtcipInstrumentation 2 }
DEFINITION      "Indicates the current charge stored in the battery. Values 0 to 100
indicate percent of full charge. The value 101 indicates an error in determining the
percent of charge."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssBatteryStatus ::= INTEGER (0..101)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "Percent"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.5 essLineVolts

3.6.4.5.1 ASN.1 REPRESENTATION

```
essLineVolts ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssLineVolts:qty"
```

```
ASN-NAME "EssLineVolts"
ASN-OBJECT-IDENTIFIER { essNtcipInstrumentation 3 }
DEFINITION "Indicates the voltage measured on the incoming power line for the
controller. The value reported will indicate one-half of the actual voltage; thus,
this object will indicate a value of 55 when the voltage is 110 Vrms. This object
shall only be used to indicate A/C power conditions. If the line power is DC, this
object shall not apply (i.e., will either not be supported or have a value of 255) and
the essBatteryStatus object shall indicate the status of the batteries.
Values 0 through 254 shall indicate valid values. The value 254 shall mean a voltage
of 508 Vrms or greater. The value of 255 shall indicate an error condition or missing
value."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssLineVolts ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "2 volts root mean squared (Vrms)"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.6 essWeatherBlock

3.6.4.6.1 ASN.1 REPRESENTATION

```
essWeatherBlock ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssWeatherBlock:cd"
ASN-NAME "EssWeatherBlock"
ASN-OBJECT-IDENTIFIER { essNtcipInstrumentation 5 }
DEFINITION "An OER encoded string of the EssWeatherData structure as defined in
Section 4. This object is used for uploading current weather data from the ESS in a
bandwidth efficient manner. The OPTIONAL fields shall be present if the data is
supported by the implementation and is valid. The OPTIONAL fields shall be omitted for
any data that is invalid or not supported by the implementation."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssWeatherBlock ::= OCTETString"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.7 essReferenceHeight

3.6.4.7.1 ASN.1 REPRESENTATION

```
essReferenceHeight ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssReferenceHeight:qty"
ASN-NAME "EssReferenceHeight"
ASN-OBJECT-IDENTIFIER { essNtcipHeight 1 }
DEFINITION "The reference elevation of the ESS in meters above mean sea level.
For a permanent station, this height shall be measured to the base of the structure;
for transportable stations, this height shall be measured to the ground surface upon
which the station resides; and for mobile, this height shall be measured to the
surface under the vehicle."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssReferenceHeight ::= INTEGER (-400..8001)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "meters"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```


3.6.4.8 essAtmosphericPressure

3.6.4.8.1 ASN.1 REPRESENTATION

```
essAtmosphericPressure ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.EssAtmosphericPressure:qty"  
  ASN-NAME "EssAtmosphericPressure"  
  ASN-OBJECT-IDENTIFIER { essBufrLocationVertical 4 }  
  DEFINITION      "The force per unit area exerted by the atmosphere in 1/10ths of  
  millibars, a.k.a. tenths of hectoPascals."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1204"  
  DATA-TYPE "EssAtmosphericPressure ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "Decapascal"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.9 essAvgWindDirection

3.6.4.9.1 ASN.1 REPRESENTATION

```
essAvgWindDirection ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.EssAvgWindDirection:qty"  
  ASN-NAME "EssAvgWindDirection"  
  ASN-OBJECT-IDENTIFIER { essBufrWind 1 }  
  DEFINITION      "A two minute average of the direction from which the wind is blowing  
  measured clockwise in degrees from true North and measured at a height as indicated by  
  essWindSensorHeight. A value of 361 shall indicate an error condition or missing  
  value."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1204"  
  DATA-TYPE "EssAvgWindDirection ::= INTEGER (0..361)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "degrees"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.10 essAvgWindSpeed

3.6.4.10.1 ASN.1 REPRESENTATION

```
essAvgWindSpeed ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.EssAvgWindSpeed:rt"  
  ASN-NAME "EssAvgWindSpeed"  
  ASN-OBJECT-IDENTIFIER { essBufrWind 2 }  
  DEFINITION      "A two minute average of the wind speed in tenths of meters per  
  second as measured by the primary wind sensor."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1204"  
  DATA-TYPE "EssAvgWindSpeed ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "tenths of meters per second"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.11 essAirTemperature

3.6.4.11.1 ASN.1 REPRESENTATION

```
essAirTemperature ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssAirTemperature:qty"
  ASN-NAME "EssAirTemperature"
  ASN-OBJECT-IDENTIFIER { essTemperatureSensorEntry 3 }
  DEFINITION          "The dry-bulb temperature in tenths of degrees Celsius. The
  temperature is an instantaneous reading at the height specified by
  essTemperatureSensorHeight."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1204"
  DATA-TYPE "EssAirTemperature ::= INTEGER (-1000..1001)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "tenths of degrees Celsius"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.12 essDewpointTemp

3.6.4.12.1 ASN.1 REPRESENTATION

```
essDewpointTemp ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssDewpointTemp:qty"
  ASN-NAME "EssDewpointTemp"
  ASN-OBJECT-IDENTIFIER { essNtcipTemperature 4 }
  DEFINITION          "The dewpoint temperature in tenths of degrees Celsius. The
  temperature is an instantaneous reading at the height specified by the
  essTemperatureSensorHeight as specified in the first row of the essTemperatureTable."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1204"
  DATA-TYPE "EssDewpointTemp ::= INTEGER (-1000..1001)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "tenths of degrees Celsius"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.13 essMaxTemp

3.6.4.13.1 ASN.1 REPRESENTATION

```
essMaxTemp ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssMaxTemp:qty"
  ASN-NAME "EssMaxTemp"
  ASN-OBJECT-IDENTIFIER { essNtcipTemperature 5 }
  DEFINITION          "The maximum temperature in tenths of degrees Celsius recorded during
  the 24 hours preceding the observation at the height specified by the
  essTemperatureSensorHeight as specified in the first row of the essTemperatureTable."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1204"
  DATA-TYPE "EssMaxTemp ::= INTEGER (-1000..1001)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "tenths of degrees Celsius"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.14 essMinTemp

3.6.4.14.1 ASN.1 REPRESENTATION

```
essMinTemp ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssMinTemp:qty"
  ASN-NAME "EssMinTemp"
```

```
ASN-OBJECT-IDENTIFIER { essNtcipTemperature 6 }
DEFINITION      "Definition>The minimum temperature in tenths of degrees Celsius
recorded during the 24 hours preceding the observation at the height specified by the
essTemperatureSensorHeight as specified in the first row of the essTemperatureTable."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssMinTemp ::= INTEGER (-1000..1001)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "tenths of degrees Celsius"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.15 essRelativeHumidity

3.6.4.15.1 ASN.1 REPRESENTATION

```
essRelativeHumidity ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssRelativeHumidity:pct"
ASN-NAME "EssRelativeHumidity"
ASN-OBJECT-IDENTIFIER { essBufrPrecip 3 }
DEFINITION      "The relative humidity in percent."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssRelativeHumidity ::= INTEGER (0..101)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "percent humidity"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.16 essWaterDepth

3.6.4.16.1 ASN.1 REPRESENTATION

```
essWaterDepth ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssWaterDepth:qty"
ASN-NAME "EssWaterDepth"
ASN-OBJECT-IDENTIFIER { essNtcipPrecip 1 }
DEFINITION      "Definition>Indicates the depth of the water from a user defined
point in centimeters. The value of 65535 shall indicate an error condition or missing
value. This may be used for stream depth, depth of water over a roadway, reservoir
depth, or other such uses."
REMARKS      ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssWaterDepth ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "centimeters"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.17 essAdjacentSnowDepth

3.6.4.17.1 ASN.1 REPRESENTATION

```
essAdjacentSnowDepth ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssAdjacentSnowDepth:qty"
ASN-NAME "EssAdjacentSnowDepth"
ASN-OBJECT-IDENTIFIER { essNtcipPrecip 2 }
DEFINITION      "The depth of snow in centimeters on representative areas other than
the highway pavement, avoiding drifts and plowed areas."
REMARKS      ""
```

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssAdjacentSnowDepth ::= INTEGER (0..3001)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "centimeters"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.18 essRoadwaySnowDepth

3.6.4.18.1 ASN.1 REPRESENTATION

```
essRoadwaySnowDepth ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssRoadwaySnowDepth:qty"
ASN-NAME "EssRoadwaySnowDepth"
ASN-OBJECT-IDENTIFIER { essNtcipPrecip 3 }
DEFINITION      "The current depth of unpacked snow in centimeters on the driving
surface."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssRoadwaySnowDepth ::= INTEGER (0..3001)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "centimeters"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.19 essRoadwaySnowPackDepth

3.6.4.19.1 ASN.1 REPRESENTATION

```
essRoadwaySnowPackDepth ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssRoadwaySnowPackDepth:qty"
ASN-NAME "EssRoadwaySnowPackDepth"
ASN-OBJECT-IDENTIFIER { essNtcipPrecip 4 }
DEFINITION      "The current depth of packed snow in centimeters on the roadway
surface."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssRoadwaySnowPackDepth ::= INTEGER (0..3001)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "centimeters"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.20 essPrecipRate

3.6.4.20.1 ASN.1 REPRESENTATION

```
essPrecipRate ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssPrecipRate:rt"
ASN-NAME "EssPrecipRate"
ASN-OBJECT-IDENTIFIER { essBufrPrecip 14 }
DEFINITION      "The rainfall, or water equivalent of snow, rate in tenths of grams
per square meter per second (for rain, this is approximately to 0.36 mm/hr)."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssPrecipRate ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "tenths of grams per square meter per second"
```

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.4.21 essSnowfallAccumRate

3.6.4.21.1 ASN.1 REPRESENTATION

```
essSnowfallAccumRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.EssSnowfallAccumRate:rt"  
  ASN-NAME "EssSnowfallAccumRate"  
  ASN-OBJECT-IDENTIFIER { essBufrPrecip 15 }  
  DEFINITION      "The snowfall accumulation rate in 10-7 meters per second (this is  
equivalent to 0.36 mm/hr)."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1204"  
  DATA-TYPE "EssSnowfallAccumRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "10-7 meters per second"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.22 essIceThickness

3.6.4.22.1 ASN.1 REPRESENTATION

```
essIceThickness ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.EssIceThickness:qty"  
  ASN-NAME "EssIceThickness"  
  ASN-OBJECT-IDENTIFIER { essNtcipPrecip 7 }  
  DEFINITION      "Indicates the thickness of the ice in millimeters."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1204"  
  DATA-TYPE "EssIceThickness ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "millimeters"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.23 essVisibility

3.6.4.23.1 ASN.1 REPRESENTATION

```
essVisibility ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "ESS.EssVisibility:qty"  
  ASN-NAME "EssVisibility"  
  ASN-OBJECT-IDENTIFIER { essNtcipVisibility 1 }  
  DEFINITION      "Surface visibility measured in one tenth of a meter."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1204"  
  DATA-TYPE "EssVisibility ::= INTEGER (0..1000001)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "one tenth of a meter"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.24 essSurfaceTemperature

3.6.4.24.1 ASN.1 REPRESENTATION

```
essSurfaceTemperature ITS-DATA-ELEMENT ::= {
```

```
DESCRIPTIVE-NAME "ESS.EssSurfaceTemperature:qty"
ASN-NAME "EssSurfaceTemperature"
ASN-OBJECT-IDENTIFIER { essPavementSensorEntry 8 }
DEFINITION       "The current pavement surface temperature in tenths of degrees Celsius."
REMARKS          ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssSurfaceTemperature ::= INTEGER (-1000..1001)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "tenths of degrees Celsius"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.25 essPavementTemperature

3.6.4.25.1 ASN.1 REPRESENTATION

```
essPavementTemperature ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssPavementTemperature:qty"
ASN-NAME "EssPavementTemperature"
ASN-OBJECT-IDENTIFIER { essPavementSensorEntry 9 }
DEFINITION       "The current pavement temperature 2-10 cm below the pavement surface in tenths of degrees Celsius. The specific depth at which the reading is taken is defined by pavementSensorTemperatureDepth."
REMARKS          ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssPavementTemperature ::= INTEGER (-1000..1001)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "tenths of degrees Celsius"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.26 essSurfaceWaterDepth

3.6.4.26.1 ASN.1 REPRESENTATION

```
essSurfaceWaterDepth ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssSurfaceWaterDepth:qty"
ASN-NAME "EssSurfaceWaterDepth"
ASN-OBJECT-IDENTIFIER { essPavementSensorEntry 10 }
DEFINITION       "The current depth of water on the surface of the roadway measured in millimeters. The value 255 shall indicate an error condition or missing value."
REMARKS          ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssSurfaceWaterDepth ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "millimeter"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.27 essSurfaceSalinity

3.6.4.27.1 ASN.1 REPRESENTATION

```
essSurfaceSalinity ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "ESS.EssSurfaceSalinity:qty"
ASN-NAME "EssSurfaceSalinity"
ASN-OBJECT-IDENTIFIER { essPavementSensorEntry 11 }
DEFINITION       "The pavement salinity in parts per one hundred thousand by weight (i.e., grams of solute per 100,000 grams of solution)."
```

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssSurfaceSalinity ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "parts per one hundred thousand by weight"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.28 essSurfaceFreezePoint

3.6.4.28.1 ASN.1 REPRESENTATION

```
essSurfaceFreezePoint ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssSurfaceFreezePoint:qty"
  ASN-NAME "EssSurfaceFreezePoint"
  ASN-OBJECT-IDENTIFIER { essPavementSensorEntry 13 }
  DEFINITION "The temperature in tenths of degrees Celsius at which the existing
  solution on the roadway will freeze."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1204"
  DATA-TYPE "EssSurfaceFreezePoint ::= INTEGER (-1000..1001)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "tenths of degrees Celsius"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.29 essPavementBlock

3.6.4.29.1 ASN.1 REPRESENTATION

```
essPavementBlock ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssPavementBlock:cd"
  ASN-NAME "EssPavementBlock"
  ASN-OBJECT-IDENTIFIER { essNtcipPavement 5 }
  DEFINITION "An OER encoded string of the EssPavementData structure as defined
  below. This object is used for uploading current pavement data from the ESS in a
  bandwidth efficient manner. The OPTIONAL fields shall be present if the data is
  supported by the implementation and is valid. The OPTIONAL fields shall be omitted for
  any data that is invalid or not supported by the implementation."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1204"
  DATA-TYPE "EssPavementBlock ::= OCTETString"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.30 essSubSurfaceData

3.6.4.30.1 ASN.1 REPRESENTATION

```
essSubSurfaceData ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssSubSurfaceData:cd"
  ASN-NAME "EssSubSurfaceData"
  ASN-OBJECT-IDENTIFIER { essNtcipPavement 6 }
  DEFINITION "An OER encoded string of the EssSubsurfaceData structure as defined
  below. This object is used for uploading current subsurface data from the ESS in a
  bandwidth efficient manner. The OPTIONAL fields shall be present if the data is
  supported by the implementation and is valid. The OPTIONAL fields shall be omitted for
  any data that is invalid or not supported by the implementation."
```

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1204"
DATA-TYPE "EssSubSurfaceData ::= OCTETString"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.4.31 essMobileFriction

3.6.4.31.1 ASN.1 REPRESENTATION

```
essMobileFriction ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "ESS.EssMobileFriction:pct"
  ASN-NAME "EssMobileFriction"
  ASN-OBJECT-IDENTIFIER { essNtcipMobile 1 }
  DEFINITION "Indicates measured coefficient of friction in percent."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1204"
  DATA-TYPE "EssMobileFriction ::= INTEGER (0..101)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "percent friction"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5 Events Class Data Elements

3.6.5.1 accidentsAndIncidents

3.6.5.1.1 ASN.1 REPRESENTATION

```
accidentsAndIncidents ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.AccidentsAndIncidents:cd"
  ASN-NAME "AccidentsAndIncidents"
  ASN-OBJECT-IDENTIFIER { itisDataElements accidentsAndIncidents(1) }
  DEFINITION "The ITIS enumeration list commonly referred to as "Accidents and Incidents," is assigned the upper byte value of [02] (which provides for value ranges from 512 to 767, inclusive). This list is formally called "AccidentsAndIncidents" in the ASN.1 and XML productions. The items in this enumeration list can be used as an event category classification. This list contains a total of 52 different phrases, divided into 6 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 75 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 640)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "AccidentsAndIncidents ::= ENUMERATED {
  accident (512),
  serious-accident (513),
  injury-accident (514),
  minor-accident (515),
  multi-vehicle-accident (516),
  numerous-accidents (517),
  accident-involving-a-bicycle (518),
  accident-involving-a-bus (519),
  accident-involving-a-motorcycle (520),
  accident-involving-a-pedestrian (521),
  accident-involving-a-train (522),
```



```

accident-involving-a-truck (523),
accident-involving-a-semi-trailer (524),
accident-involving-hazardous-materials (525),
earlier-accident (526),
medical-emergency (527),
secondary-accident (528),
rescue-and-recovery-work-removed (529),
accident-investigation-work (530),
incident (531),
stalled-vehicle (532),
abandoned-vehicle (533),
disabled-vehicle (534),
disabled-truck (535),
disabled-semi-trailer (536),
disabled-bus (537),
disabled-train (538),
vehicle-spun-out (539),
vehicle-on-fire (540),
vehicle-in-water (541),
vehicles-slowng-to-look-at-accident (542),
jackknifed-semi-trailer (543),
jackknifed-trailer-home (544),
jackknifed-trailer (545),
spillage-occurring-from-moving-vehicle (546),
acid-spill (547),
chemical-spill (548),
fuel-spill (549),
hazardous-materials-spill (550),
oil-spill (551),
spilled-load (552),
toxic-spill (553),
overturned-vehicle (554),
overturned-truck (555),
overturned-semi-trailer (556),
overturned-bus (557),
derailed-train (558),
stuck-vehicle (559),
truck-stuck-under-bridge (560),
bus-stuck-under-bridge (561),
accident-cleared (562),
incident-cleared (563),
...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.2 adviceInstructionsMandatory

3.6.5.2.1 ASN.1 REPRESENTATION

```

adviceInstructionsMandatory ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.AdviceInstructionsMandatory:cd"
  ASN-NAME "AdviceInstructionsMandatory"
  ASN-OBJECT-IDENTIFIER { itisDataElements adviceInstructionsMandatory(1) }
  DEFINITION
    "The ITIS enumeration list commonly referred to as "Instructions
    (Mandatory)," is assigned the upper byte value of [29] (which provides for value
    ranges from 7424 to 7679, inclusive). This list is formally called
    "AdviceInstructionsMandatory" in the ASN.1 and XML productions. The items in this
    enumeration list can be used as an event category classification. This list contains
    a total of 30 different phrases, divided into 2 further sub-categories (the division
    into these sub-categories is informational only and other groupings may also be used).
    The remaining 97 values up to the lower byte value of [127] are reserved for
    additional "national" phrases in this byte range. Local phrases may be added to the
    list starting with the lower byte value of 128 and proceeding upward from there (in

```

other words, the first value assigned for any local additions to this list would be given the value 7552)."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "AdviceInstructionsMandatory ::= ENUMERATED {
    keep-to-the-right (7424),
    keep-to-the-left (7425),
    use-right-lane (7426),
    use-left-lane (7427),
    stay-in-lane (7428),
    merge (7429),
    heavy-vehicles-use-right-lane (7430),
    heavy-vehicles-use-left-lane (7431),
    observe-signals (7432),
    observe-signs (7433),
    no-passing (7434),
    no-smoking (7435),
    no-open-flames (7436),
    use-shoulder-as-lane (7437),
    do-not-drive-on-the-shoulder (7438),
    allow-emergency-vehicles-to-pass (7439),
    clear-a-lane-for-emergency-vehicles (7440),
    pull-over-to-the-edge-of-the-roadway (7441),
    wait-for-escort-vehicle (7442),
    in-emergency-wait-for-police-patrol (7443),
    reduce-your-speed (7444),
    observe-speed-limits (7445),
    check-point (7446),
    entry-requirements (7447),
    insurance-requirements (7448),
    firearms-requirements (7449),
    pet-requirements (7450),
    slower-traffic-keep-right (7451),
    keep-off (7452),
    shoulder-travel-no-longer-allowed (7453),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.3 adviceInstructionsRecommendations

3.6.5.3.1 ASN.1 REPRESENTATION

```
adviceInstructionsRecommendations ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.AdviceInstructionsRecommendations:cd"
ASN-NAME "AdviceInstructionsRecommendations"
ASN-OBJECT-IDENTIFIER { itisDataElements adviceInstructionsRecommendations(1) }
DEFINITION
    "The ITIS enumeration list commonly referred to as "Instructions
    (Recommendations)," is assigned the upper byte value of [28] (which provides for value
    ranges from 7168 to 7423, inclusive). This list is formally called
    "AdviceInstructionsRecommendations" in the ASN.1 and XML productions. The items in
    this enumeration list can be used as an event category classification. This list
    contains a total of 35 different phrases, divided into 2 further sub-categories (the
    division into these sub-categories is informational only and other groupings may also
    be used). The remaining 92 values up to the lower byte value of [127] are reserved
    for additional "national" phrases in this byte range. Local phrases may be added to
    the list starting with the lower byte value of 128 and proceeding upward from there
    (in other words, the first value assigned for any local additions to this list would
    be given the value 7296)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
```

```
STANDARD "SAE J2540"
DATA-TYPE "AdviceInstructionsRecommendations ::= ENUMERATED {
    drive-carefully (7168),
    drive-with-extreme-caution (7169),
    approach-with-care (7170),
    keep-your-distance (7171),
    increase-normal-following-distance (7172),
    test-your-brakes (7173),
    cross-intersection-with-care (7174),
    pass-with-care (7175),
    pass (7176),
    use-low-beam-headlights (7177),
    use-fog-lights (7178),
    use-hazard-warning-lights (7179),
    do-not-leave-your-vehicle (7180),
    leave-your-vehicle-and-proceed-to-next-safe-place (7181),
    turn-off-engine (7182),
    close-all-windows-turn-off-heater-air-conditioner-and-vents (7183),
    turn-off-air-conditioner-to-prevent-engine-overheating (7184),
    turn-off-mobile-phones-and-two-way-radios (7185),
    prepare-to-stop (7186),
    be-prepared-to-stop (7187),
    stop-at-next-rest-area (7188),
    stop-at-next-safe-place (7189),
    only-travel-if-absolutely-necessary (7190),
    drive-to-another-service-area (7191),
    use-through-traffic-lanes (7192),
    use-local-traffic-lanes (7193),
    use-left-hand-parallel-roadway (7194),
    use-right-hand-parallel-roadway (7195),
    use-heavy-vehicle-lane (7196),
    observe-recommended-speed (7197),
    singals-sequenced-for-speed (7198),
    maintain-stop-safe-speed (7199),
    facing-traffic (7200),
    push-button (7201),
    to-cross-street (7202),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.4 alternateRoute

3.6.5.4.1 ASN.1 REPRESENTATION

```
alternateRoute ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.AlternateRoute:cd"
    ASN-NAME "AlternateRoute"
    ASN-OBJECT-IDENTIFIER { itisDataElements alternateRoute(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Alternate Route,"
is assigned the upper byte value of [33] (which provides for value ranges from 8448 to
8703, inclusive). This list is formally called "AlternateRoute" in the ASN.1 and XML
productions. The items in this enumeration list can be used as an event category
classification. This list contains a total of 23 different phrases, divided into 2
further sub-categories (the division into these sub-categories is informational only
and other groupings may also be used). The remaining 104 values up to the lower byte
value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 8576)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
```

```
DATA-TYPE "AlternateRoute ::= ENUMERATED {
    detour-where-possible (8448),
    no-detour-available (8449),
    follow-signs (8450),
    follow-detour-signs (8451),
    follow-special-detour-markers (8452),
    do-not-follow-detour-signs (8453),
    detour-in-operation (8454),
    follow-local-detour (8455),
    compulsory-detour-in-operation (8456),
    no-suitable-detour-available (8457),
    detour-is-no-longer-recommended (8458),
    local-drivers-are-recommended-to-avoid-the-area (8459),
    trucks-are-recommended-to-avoid-the-area (8460),
    consider-alternate-route (8461),
    consider-alternate-parking (8462),
    consider-alternate-destination (8463),
    consider-alternate-area (8464),
    snow-route (8465),
    emergency-snow-route (8466),
    evacuation-route (8467),
    truck-route (8468),
    hazardous-materials-route (8469),
    detour (8470),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.5 closures

3.6.5.5.1 ASN.1 REPRESENTATION

```
closures ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Closures:cd"
    ASN-NAME "Closures"
    ASN-OBJECT-IDENTIFIER { itisDataElements closures(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Closures (Road
and Lane)," is assigned the upper byte value of [03] (which provides for value ranges
from 768 to 1023, inclusive). This list is formally called "Closures" in the ASN.1
and XML productions. Items from this enumeration list can be used as an event
category classification. This list contains a total of 18 different phrases, divided
into 2 further sub-categories (the division into these sub-categories is informational
only and other groupings may also be used). The remaining 109 values up to the lower
byte value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 896)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "Closures ::= ENUMERATED {
    closed-to-traffic (768),
    closed (769),
    closed-ahead (770),
    closed-intermittently (771),
    closed-for-repairs (772),
    closed-for-the-season (773),
    blocked (774),
    blocked-ahead (775),
    reduced-to-one-lane (776),
    reduced-to-two-lanes (777),
    reduced-to-three-lanes (778),
    collapse (779),
```

```

        out (780),
        open-to-traffic (781),
        open (782),
        reopened-to-traffic (783),
        clearing (784),
        cleared-from-road (785),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.6 delayStatusCancellation

3.6.5.6.1 ASN.1 REPRESENTATION

```

delayStatusCancellation ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.DelayStatusCancellation:cd"
    ASN-NAME "DelayStatusCancellation"
    ASN-OBJECT-IDENTIFIER { itisDataElements delayStatusCancellation(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Delays, Status,
    And Cancellations," is assigned the upper byte value of [06] (which provides for value
    ranges from 1536 to 1791, inclusive). This list is formally called
    "DelayStatusCancellation" in the ASN.1 and XML productions. Items from this
    enumeration list can be used as an event category classification. This list contains
    a total of 36 different phrases, divided into 5 further sub-categories (the division
    into these sub-categories is informational only and other groupings may also be used).
    The remaining 91 values up to the lower byte value of [127] are reserved for
    additional "national" phrases in this byte range. Local phrases may be added to the
    list starting with the lower byte value of 128 and proceeding upward from there (in
    other words, the first value assigned for any local additions to this list would be
    given the value 1664)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "DelayStatusCancellation ::= ENUMERATED {
        delays (1536),
        short-delays (1537),
        long-delays (1538),
        very-long-delays (1539),
        delays-of-uncertain-duration (1540),
        delayed-until-further-notice (1541),
        busy (1542),
        very-busy (1543),
        crowded (1544),
        overcrowded (1545),
        cancellations (1546),
        route-cancelled-and-no-replacement (1547),
        service-cancelled (1548),
        service-suspended (1549),
        service-withdrawn (1550),
        service-fully-booked (1551),
        all-services-fully-booked (1552),
        next-departure (1553),
        next-arrival (1554),
        very-frequent-service (1555),
        frequent-service (1556),
        fairly-frequent-service (1557),
        regular-service (1558),
        irregular-service (1559),
        not-operating (1560),
        system-busy (1561),
        system-very-busy (1562),
        system-crowded (1563),
        system-overcrowded (1564),

```

```

        travel-time (1565),
        headway (1566),
        extra-services-in-operation (1567),
        delays-clearing (1568),
        delays-cleared (1569),
        normal-services-resumed (1570),
        operating (1571),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.7 deviceStatus

3.6.5.7.1 ASN.1 REPRESENTATION

```

deviceStatus ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.DeviceStatus:cd"
    ASN-NAME "DeviceStatus"
    ASN-OBJECT-IDENTIFIER { itisDataElements deviceStatus(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Device And
    Equipment Status," is assigned the upper byte value of [09] (which provides for value
    ranges from 2304 to 2559, inclusive). This list is formally called "DeviceStatus" in
    the ASN.1 and XML productions. Items from this enumeration list can be used as an
    event category classification. This list contains a total of 41 different phrases,
    divided into 2 further sub-categories (the division into these sub-categories is
    informational only and other groupings may also be used). The remaining 86 values up
    to the lower byte value of [127] are reserved for additional "national" phrases in
    this byte range. Local phrases may be added to the list starting with the lower byte
    value of 128 and proceeding upward from there (in other words, the first value
    assigned for any local additions to this list would be given the value 2432)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "DeviceStatus ::= ENUMERATED {
        lane-control-signs-not-working (2304),
        lane-control-signs-working-incorrectly (2305),
        lane-control-signs-operating (2306),
        variable-message-signs-not-working (2307),
        variable-message-signs-working-incorrectly (2308),
        variable-message-signs-operating (2309),
        emergency-telephones-not-working (2310),
        emergency-telephone-number-not-working (2311),
        traffic-lights-not-working (2312),
        traffic-lights-working-incorrectly (2313),
        ramp-control-signals-not-working (2314),
        ramp-control-signals-working-incorrectly (2315),
        temporary-traffic-lights-not-working (2316),
        temporary-traffic-lights-working-incorrectly (2317),
        traffic-signal-control-computer-not-working (2318),
        traffic-signal-timings-changed (2319),
        overheight-warning-system-triggered (2320),
        equipment-failure (2321),
        railroad-crossing-equipment-failure (2322),
        tunnel-ventilation-not-working (2323),
        power-failure (2324),
        widespread-power-outages (2325),
        technical-problems (2326),
        sign-down (2327),
        lines-in-road-faded (2328),
        damaged-light-standard (2329),
        traffic-signal-stuck-on-flash (2330),
        guide-rail (2331),
        fencing (2332),

```

```

light-standard-hanging-by-wires (2333),
call-box (2334),
signal-cabinet (2335),
detector (2336),
improper-use-of-state-vehicle-or-equipment (2337),
bulb-out (2338),
not-yet-operational (2339),
not-yet-installed (2340),
electronic-signs-repaired (2341),
emergency-call-facilities-restored (2342),
traffic-signals-repaired (2343),
railroad-crossing-equipment-now-working-normally (2344),
...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.8 disasters

3.6.5.8.1 ASN.1 REPRESENTATION

```

disasters ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Disasters:cd"
ASN-NAME "Disasters"
ASN-OBJECT-IDENTIFIER { itisDataElements disasters(1) }
DEFINITION          "The ITIS enumeration list commonly referred to as "Disasters," is
assigned the upper byte value of [12] (which provides for value ranges from 3072 to
3327, inclusive). This list is formally called "Disaster" in the ASN.1 and XML
productions. Items from this enumeration list can be used as an event category
classification. This list contains a total of 32 different phrases, divided into 4
further sub-categories (the division into these sub-categories is informational only
and other groupings may also be used). The remaining 95 values up to the lower byte
value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 3200)."
```

REMARKS ""

```

DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "Disasters ::= ENUMERATED {
    flash-flood (3072),
    major-flood (3073),
    reservoir-failure (3074),
    levee-failure (3075),
    tsunami (3076),
    tidal-wave (3077),
    volcanic-eruption (3078),
    ash-fall (3079),
    lava-flow (3080),
    serious-fire (3081),
    forest-fire (3082),
    wildfire (3083),
    building-fire (3084),
    brush-fire (3085),
    grass-fire (3086),
    fire-danger-extreme (3087),
    fire-danger-very-high (3088),
    fire-danger-high (3089),
    fire-danger-medium (3090),
    fire-danger-low (3091),
    earthquake-damage (3092),
    air-crash (3093),
    rail-crash (3094),
    toxic-release (3095),

```

```

    toxic-leak (3096),
    radioactive-release (3097),
    radiation-hazard (3098),
    reactor-leakage (3099),
    explosion (3100),
    major-hazardous-materials-fire (3101),
    major-hazardous-materials-release (3102),
    disaster-cleared (3103),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.9 disturbances

3.6.5.9.1 ASN.1 REPRESENTATION

```

disturbances ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Disturbances:cd"
ASN-NAME "Disturbances"
ASN-OBJECT-IDENTIFIER { itisDataElements disturbances(1) }
DEFINITION
    "The ITIS enumeration list commonly referred to as "Disturbances," is
assigned the upper byte value of [13] (which provides for value ranges from 3328 to
3583, inclusive). This list is formally called "Disaster" in the ASN.1 and XML
productions. Items from this enumeration list can be used as an event category
classification. This list contains a total of 37 different phrases, divided into 2
further sub-categories (the division into these sub-categories is informational only
and other groupings may also be used). The remaining 90 values up to the lower byte
value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 3456)."
```

REMARKS ""

```

DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "Disturbances ::= ENUMERATED {
    assault (3328),
    crime (3329),
    robbery (3330),
    fare-dispute (3331),
    shooting (3332),
    gunfire-on-roadway (3333),
    suicide (3334),
    fight (3335),
    gang-fight (3336),
    person-harassment (3337),
    person-injured (3338),
    sick-customer (3339),
    unruly-passenger (3340),
    person-intoxicated (3341),
    crowd-control-problem (3342),
    demonstration (3343),
    march (3344),
    public-disturbance (3345),
    riot (3346),
    civil-unrest (3347),
    civil-emergency (3348),
    strike (3349),
    public-transit-strike (3350),
    stampede (3351),
    teargas-used (3352),
    security-alert (3353),
    security-incident (3354),
    checkpoint (3355),

```



```

    bomb-alert (3356),
    terrorist-incident (3357),
    high-velocity-shell-fire (3358),
    explosives-in-use (3359),
    air-raid (3360),
    weapons-of-mass-destruction-threat (3361),
    military-operations (3362),
    security-problem-cleared (3363),
    traffic-disturbance-cleared (3364),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.10 genericLocations

3.6.5.10.1 ASN.1 REPRESENTATION

```

genericLocations ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.GenericLocations:cd"
  ASN-NAME "GenericLocations"
  ASN-OBJECT-IDENTIFIER { itisDataElements genericLocations(1) }
  DEFINITION "The ITIS enumeration list commonly referred to as "Generic
Locations," is assigned the upper byte value of [31] (which provides for value ranges
from 7936 to 8191, inclusive). This list is formally called "GenericLocations" in the
ASN.1 and XML productions. Items from this enumeration list can be used as an event
category classification. This list contains a total of 96 different phrases, divided
into 5 further sub-categories (the division into these sub-categories is informational
only and other groupings may also be used). The remaining 31 values up to the lower
byte value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 8064)."
```

REMARKS ""

```

  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "SAE J2540"
  DATA-TYPE "GenericLocations ::= ENUMERATED {
    on-bridges (7936),
    in-tunnels (7937),
    entering-or-leaving-tunnels (7938),
    on-ramps (7939),
    in-road-construction-area (7940),
    around-a-curve (7941),
    on-curve (7942),
    on-tracks (7943),
    in-street (7944),
    shoulder (7945),
    on-minor-roads (7946),
    in-the-opposing-lanes (7947),
    adjacent-to-roadway (7948),
    across-tracks (7949),
    on-bend (7950),
    intersection (7951),
    entire-intersection (7952),
    in-the-median (7953),
    moved-to-side-of-road (7954),
    moved-to-shoulder (7955),
    on-the-roadway (7956),
    dip (7957),
    traffic-circle (7958),
    crossover (7959),
    cross-road (7960),
    side-road (7961),
    to (7962),

```

by (7963),
through (7964),
area-of (7965),
under (7966),
over (7967),
from (7968),
approaching (7969),
entering-at (7970),
exiting-at (7971),
in-shaded-areas (7972),
in-low-lying-areas (7973),
in-the-downtown-area (7974),
in-the-inner-city-area (7975),
in-parts (7976),
in-some-places (7977),
in-the-ditch (7978),
in-the-valley (7979),
on-hill-top (7980),
near-the-foothills (7981),
at-high-altitudes (7982),
near-the-lake (7983),
near-the-shore (7984),
nearby-basin (7985),
over-the-crest-of-a-hill (7986),
other-than-on-the-roadway (7987),
near-the-beach (7988),
near-beach-access-point (7989),
mountain-pass (7990),
lower-level (7991),
upper-level (7992),
airport (7993),
concourse (7994),
gate (7995),
baggage-claim (7996),
customs-point (7997),
reservation-center (7998),
station (7999),
platform (8000),
dock (8001),
depot (8002),
ev-charging-point (8003),
information-welcome-point (8004),
at-rest-area (8005),
at-service-area (8006),
at-weigh-station (8007),
roadside-park (8008),
picnic-areas (8009),
rest-area (8010),
service-stations (8011),
toilets (8012),
bus-stop (8013),
park-and-ride-lot (8014),
on-the-right (8015),
on-the-left (8016),
in-the-center (8017),
in-the-opposite-direction (8018),
cross-traffic (8019),
northbound-traffic (8020),
eastbound-traffic (8021),
southbound-traffic (8022),
westbound-traffic (8023),
north (8024),
south (8025),
east (8026),
west (8027),

```

        northeast (8028),
        northwest (8029),
        southeast (8030),
        southwest (8031),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.11 incidentResponseEquipment

3.6.5.11.1 ASN.1 REPRESENTATION

```

incidentResponseEquipment ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.IncidentResponseEquipment:cd"
    ASN-NAME "IncidentResponseEquipment"
    ASN-OBJECT-IDENTIFIER { itisDataElements incidentResponseEquipment(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Incident Response
    Equipment," is assigned the upper byte value of [39] (which provides for value ranges
    from 9984 to 10239, inclusive). This list is formally called
    "IncidentResponseEquipment" in the ASN.1 and XML productions. Items from this
    enumeration list can be used as an event category classification. This list contains
    a total of 73 different phrases. The remaining 54 values up to the lower byte value
    of [127] are reserved for additional "national" phrases in this byte range. Local
    phrases may be added to the list starting with the lower byte value of 128 and
    proceeding upward from there (in other words, the first value assigned for any local
    additions to this list would be given the value 10112)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "IncidentResponseEquipment ::= ENUMERATED {
        ground-fire-suppression (9984),
        heavy-ground-equipment (9985),
        aircraft (9986),
        marine-equipment (9987),
        support-equipment (9988),
        medical-rescue-unit (9989),
        other (9990),
        ground-fire-suppression-other (9991),
        engine (9992),
        truck-or-aerial (9993),
        quint (9994),
        tanker-pumper-combination (9995),
        brush-truck (9996),
        aircraft-rescue-firefighting (9997),
        heavy-ground-equipment-other (9998),
        dozer-or-plow (9999),
        tractor (10000),
        tanker-or-tender (10001),
        aircraft-other (10002),
        aircraft-fixed-wing-tanker (10003),
        helitanker (10004),
        helicopter (10005),
        marine-equipment-other (10006),
        fire-boat-with-pump (10007),
        boat-no-pump (10008),
        support-apparatus-other (10009),
        breathing-apparatus-support (10010),
        light-and-air-unit (10011),
        medical-rescue-unit-other (10012),
        rescue-unit (10013),
        urban-search-rescue-unit (10014),
        high-angle-rescue (10015),
        crash-fire-rescue (10016),

```

```

    bls-unit (10017),
    als-unit (10018),
    mobile-command-post (10019),
    chief-officer-car (10020),
    hazmat-unit (10021),
    type-i-hand-crew (10022),
    type-ii-hand-crew (10023),
    privately-owned-vehicle (10024),
    other-apparatus-resource (10025),
    ambulance (10026),
    bomb-squad-van (10027),
    combine-harvester (10028),
    construction-vehicle (10029),
    farm-tractor (10030),
    grass-cutting-machines (10031),
    hazmat-containment-tow (10032),
    heavy-tow (10033),
    light-tow (10034),
    flatbed-tow (10035),
    hedge-cutting-machines (10036),
    mobile-crane (10037),
    refuse-collection-vehicle (10038),
    resurfacing-vehicle (10039),
    road-sweeper (10040),
    survey-crews (10041),
    roadside-litter-collection-crews (10042),
    salvage-vehicle (10043),
    sand-truck (10044),
    snowplow (10045),
    steam-roller (10046),
    swat-team-van (10047),
    track-laying-vehicle (10048),
    unknown-vehicle (10049),
    white-lining-vehicle (10050),
    dump-truck (10051),
    supervisor-vehicle (10052),
    snow-blower (10053),
    rotary-snow-blower (10054),
    road-grader (10055),
    steam-truck (10056),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.12 incidentResponseStatus

3.6.5.12.1 ASN.1 REPRESENTATION

```

incidentResponseStatus ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.IncidentResponseStatus:cd"
    ASN-NAME "IncidentResponseStatus"
    ASN-OBJECT-IDENTIFIER { itisDataElements incidentResponseStatus(1) }
    DEFINITION
        "The ITIS enumeration list commonly referred to as "Incident Response
        Status," is assigned the upper byte value of [11] (which provides for value ranges
        from 2816 to 3071, inclusive). This list is formally called "IncidentResponseStatus"
        in the ASN.1 and XML productions. Items from this enumeration list can be used as an
        event category classification. This list contains a total of 17 different phrases.
        The remaining 110 values up to the lower byte value of [127] are reserved for
        additional "national" phrases in this byte range. Local phrases may be added to the
        list starting with the lower byte value of 128 and proceeding upward from there (in
        other words, the first value assigned for any local additions to this list would be
        given the value 2944)."
```

REMARKS ""

```

DESCRIPTIVE-NAME-CONTEXT {""}

```

```
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "IncidentResponseStatus ::= ENUMERATED {
    unconfirmed-report (2816),
    initial-response-en-route (2817),
    follow-up-response-en-route (2818),
    initial-response-on-scene (2819),
    follow-up-response-on-scene (2820),
    confirmed-report (2821),
    scene-is-unsecured-at-this-time (2822),
    response-scene-secured (2823),
    rescue-and-recovery-work-in-progress (2824),
    extraction-in-progress (2825),
    clearance-work-in-progress (2826),
    body-removal-operations (2827),
    fire-containment-contained (2828),
    fire-containment-not-contained (2829),
    event-cleared (2830),
    traffic-clearing (2831),
    incident-closed (2832),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.13 laneRoadway

3.6.5.13.1 ASN.1 REPRESENTATION

```
laneRoadway ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.LaneRoadway:cd"
    ASN-NAME "LaneRoadway"
    ASN-OBJECT-IDENTIFIER { itisDataElements laneRoadway(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Lane / Roadway
    Descriptions," is assigned the upper byte value of [32] (which provides for value
    ranges from 8192 to 8447, inclusive). This list is formally called "LaneRoadway" in
    the ASN.1 and XML productions. Items from this enumeration list are not allowed to be
    used as an event category classification. This list contains a total of 61 different
    phrases, divided into 6 further sub-categories (the division into these sub-categories
    is informational only and other groupings may also be used). The remaining 66 values
    up to the lower byte value of [127] are reserved for additional "national" phrases in
    this byte range. Local phrases may be added to the list starting with the lower byte
    value of 128 and proceeding upward from there (in other words, the first value
    assigned for any local additions to this list would be given the value 8320)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "LaneRoadway ::= ENUMERATED {
    all-roadways (8192),
    through-lanes (8193),
    left-lane (8194),
    right-lane (8195),
    center-lane (8196),
    middle-lanes (8197),
    middle-two-lanes (8198),
    right-turning-lanes (8199),
    left-turning-lanes (8200),
    upper-deck-lanes (8201),
    lower-deck-lanes (8202),
    reversible-lanes (8203),
    right-exit-lanes (8204),
    left-exit-lanes (8205),
    right-merging-lanes (8206),
    left-merging-lanes (8207),
```

```

    right-exit-ramp (8208),
    right-second-exit-ramp (8209),
    right-entrance-ramp (8210),
    right-second-entrance-ramp (8211),
    left-exit-ramp (8212),
    left-second-exit-ramp (8213),
    left-entrance-ramp (8214),
    left-second-entrance-ramp (8215),
    escape-ramp (8216),
    hard-shoulder (8217),
    soft-shoulder (8218),
    right-shoulder (8219),
    left-shoulder (8220),
    median (8221),
    sidewalk (8222),
    highways (8223),
    right-hand-parallel-lanes (8224),
    left-hand-parallel-lanes (8225),
    connecting-lanes (8226),
    express-lanes (8227),
    local-lanes (8228),
    toll-lanes (8229),
    electronic-toll-lanes (8230),
    toll-plaza (8231),
    inspection-lane (8232),
    hov-lanes (8233),
    bus-lanes (8234),
    carpool-lanes (8235),
    truck-lanes (8236),
    emergency-lanes (8237),
    passing-lanes (8238),
    climbing-lanes (8239),
    slow-lane (8240),
    service-road (8241),
    cycle-lane (8242),
    tracks (8243),
    bridge (8244),
    overpass (8245),
    elevated-lanes (8246),
    underpass (8247),
    tunnel (8248),
    all-exit-lanes (8249),
    all-entry-lanes (8250),
    either-shoulder (8251),
    shoulder-work (8252),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.14 mobileSituation

3.6.5.14.1 ASN.1 REPRESENTATION

```

mobileSituation ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.MobileSituation:cd"
    ASN-NAME "MobileSituation"
    ASN-OBJECT-IDENTIFIER { itisDataElements mobileSituation(1) }
    DEFINITION
        "The ITIS enumeration list commonly referred to as "Mobile
        Situation," is assigned the upper byte value of [08] (which provides for value ranges
        from 2048 to 2303, inclusive). This list is formally called "MobileSituation" in the
        ASN.1 and XML productions. Items from this enumeration list can be used as an event
        category classification. This list contains a total of 22 different phrases, divided
        into 2 further sub-categories (the division into these sub-categories is informational
        only and other groupings may also be used). The remaining 105 values up to the lower

```

byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 2176)."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "MobileSituation ::= ENUMERATED {
    abnormal-load (2048),
    wide-load (2049),
    long-load (2050),
    slow-vehicle (2051),
    farm-equipment (2052),
    horse-drawn-vehicles (2053),
    overheight-load (2054),
    overweight-load (2055),
    tracked-vehicle (2056),
    vehicle-carrying-hazardous-materials (2057),
    slow-moving-maintenance-vehicle (2058),
    convoy (2059),
    military-convoy (2060),
    refugee-convoy (2061),
    motorcade (2062),
    mobile-situation-repositioning (2063),
    winter-maintenance-vehicles (2064),
    snowplows (2065),
    slow-moving-maintenance-vehicle-warning-cleared (2066),
    exceptional-load-warning-cleared (2067),
    hazardous-load-warning-cleared (2068),
    convoy-cleared (2069),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.15 obstruction

3.6.5.15.1 ASN.1 REPRESENTATION

obstruction ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Obstruction:cd"
ASN-NAME "Obstruction"
ASN-OBJECT-IDENTIFIER { itisDataElements obstruction(1) }
DEFINITION "The ITIS enumeration list commonly referred to as "Obstructions," is assigned the upper byte value of [05] (which provides for value ranges from 1280 to 1535, inclusive). This list is formally called "Obstruction" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 40 different phrases, divided into 5 further sub-categories (the division into these sub-categories is informational only and other groupings may also be used). The remaining 87 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 1408)."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "Obstruction ::= ENUMERATED {
    obstruction-on-roadway (1280),
    object-on-roadway (1281),
    objects-falling-from-moving-vehicle (1282),
    debris-on-roadway (1283),
    storm-damage (1284),
```

```

    people-on-roadway (1285),
    bicyclists-on-roadway (1286),
    sightseers-obstructing-access (1287),
    large-numbers-of-visitors (1288),
    animal-on-roadway (1289),
    large-animal-on-roadway (1290),
    herd-of-animals-on-roadway (1291),
    animal-struck (1292),
    advertising-signs (1293),
    fallen-trees (1294),
    over-turned-trees (1295),
    tree-limbs (1296),
    utility-pole-down (1297),
    downed-power-lines (1298),
    downed-cables (1299),
    subsidence (1300),
    road-surface-collapse (1301),
    frost-jacking (1302),
    frost-heave (1303),
    pavement-buckled (1304),
    pothole (1305),
    flooding (1306),
    broken-water-main (1307),
    collapsed-sewer (1308),
    wash-out (1309),
    washboard (1310),
    sewer-overflow (1311),
    gas-leak (1312),
    snowmelt (1313),
    mudslide (1314),
    avalanche (1315),
    rockfall (1316),
    landslide (1317),
    clearance-work (1318),
    obstruction-cleared (1319),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.16 parkingInformation

3.6.5.16.1 ASN.1 REPRESENTATION

```

parkingInformation ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.ParkingInformation:cd"
    ASN-NAME "ParkingInformation"
    ASN-OBJECT-IDENTIFIER { itisDataElements parkingInformation(1) }
    DEFINITION          "The ITIS enumeration list commonly referred to as "Parking
Information," is assigned the upper byte value of [16] (which provides for value
ranges from 4096 to 4351, inclusive). This list is formally called
"ParkingInformation" in the ASN.1 and XML productions. Items from this enumeration
list can be used as an event category classification. This list contains a total of
34 different phrases, divided into 2 further sub-categories (the division into these
sub-categories is informational only and other groupings may also be used). The
remaining 93 values up to the lower byte value of [127] are reserved for additional
"national" phrases in this byte range. Local phrases may be added to the list
starting with the lower byte value of 128 and proceeding upward from there (in other
words, the first value assigned for any local additions to this list would be given
the value 4224)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "ParkingInformation ::= ENUMERATED {

```



```

normal-parking-restrictions-lifted (4096),
parking-meter-restrictions-lifted (4097),
special-parking-restrictions-in-force (4098),
full-parking-lot (4099),
full-parking-garage (4100),
all-parking-lots-full (4101),
no-parking-spaces-available (4102),
only-a-few-spaces-available (4103),
spaces-available (4104),
no-parking (4105),
parking-on-one-side-of-street-only (4106),
parking-on-both-sides-of-street (4107),
parallel-parking-only (4108),
parking-meters-not-available (4109),
use-of-parking-meters-restricted (4110),
event-parking (4111),
handicapped-parking (4112),
long-term-parking (4113),
overnight-parking (4114),
short-term-parking (4115),
parking-by-permit-only (4116),
emergency-parking-only (4117),
emergency-stopping-only (4118),
parking (4119),
stopping (4120),
standing (4121),
tow-away-zone (4122),
school-zone (4123),
speed-zone (4124),
loading-zone (4125),
state-law (4126),
van-accessible (4127),
special-parking-restrictions-lifted (4128),
no-parking-information-available (4129),
...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.17 pavementConditions

3.6.5.17.1 ASN.1 REPRESENTATION

```

pavementConditions ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.PavementConditions:cd"
  ASN-NAME "PavementConditions"
  ASN-OBJECT-IDENTIFIER { itisDataElements pavementConditions(1) }
  DEFINITION
    "The ITIS enumeration list commonly referred to as "Pavement
    Conditions," is assigned the upper byte value of [23] (which provides for value ranges
    from 5888 to 6143, inclusive). This list is formally called "PavementConditions" in
    the ASN.1 and XML productions. Items from this enumeration list can be used as an
    event category classification. This list contains a total of 55 different phrases,
    divided into 5 further sub-categories (the division into these sub-categories is
    informational only and other groupings may also be used). The remaining 72 values up
    to the lower byte value of [127] are reserved for additional "national" phrases in
    this byte range. Local phrases may be added to the list starting with the lower byte
    value of 128 and proceeding upward from there (in other words, the first value
    assigned for any local additions to this list would be given the value 6016)."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "SAE J2540"
  DATA-TYPE "PavementConditions ::= ENUMERATED {
    impassable (5888),
    almost-impassable (5889),

```

```

    passable-with-care (5890),
    passable (5891),
    surface-water-hazard (5892),
    danger-of-hydroplaning (5893),
    wet-pavement (5894),
    treated-pavement (5895),
    slippery (5896),
    low-ground-clearance (5897),
    at-grade-level-crossing (5898),
    mud-on-roadway (5899),
    leaves-on-roadway (5900),
    loose-sand-on-roadway (5901),
    loose-gravel (5902),
    fuel-on-roadway (5903),
    oil-on-roadway (5904),
    road-surface-in-poor-condition (5905),
    melting-tar (5906),
    uneven-lanes (5907),
    rough-road (5908),
    rough-crossing (5909),
    ice (5910),
    icy-patches (5911),
    black-ice (5912),
    ice-pellets-on-roadway (5913),
    ice-build-up (5914),
    freezing-rain (5915),
    wet-and-icy-roads (5916),
    melting-snow (5917),
    slush (5918),
    frozen-slush (5919),
    snow-on-roadway (5920),
    packed-snow (5921),
    packed-snow-patches (5922),
    plowed-snow (5923),
    wet-snow (5924),
    fresh-snow (5925),
    powder-snow (5926),
    granular-snow (5927),
    frozen-snow (5928),
    crusted-snow (5929),
    deep-snow (5930),
    snow-drifts (5931),
    drifting-snow (5932),
    expected-snow-accumulation (5933),
    current-snow-accumulation (5934),
    sand (5935),
    gravel (5936),
    paved (5937),
    dry-pavement (5938),
    snow-cleared (5939),
    pavement-conditions-improved (5940),
    skid-hazard-reduced (5941),
    pavement-conditions-cleared (5942),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.18 precipitation

3.6.5.18.1 ASN.1 REPRESENTATION

```

precipitation ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Precipitation:cd"
    ASN-NAME "Precipitation"
}

```

```
ASN-OBJECT-IDENTIFIER { itisDataElements precipitation(1) }
DEFINITION "The ITIS enumeration list commonly referred to as "Precipitation,"
is assigned the upper byte value of [19] (which provides for value ranges from 4864 to
5119, inclusive). This list is formally called "Precipitation" in the ASN.1 and XML
productions. Items from this enumeration list can be used as an event category
classification. This list contains a total of 26 different phrases, divided into 2
further sub-categories (the division into these sub-categories is informational only
and other groupings may also be used). The remaining 101 values up to the lower byte
value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 3992)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "Precipitation ::= ENUMERATED {
    severe-weather (4864),
    blizzard (4865),
    heavy-snow (4866),
    snow (4867),
    light-snow (4868),
    snow-showers (4869),
    winter-storm (4870),
    ice-glaze (4871),
    heavy-frost (4872),
    frost (4873),
    ice-storm (4874),
    sleet (4875),
    rain-and-snow-mixed (4876),
    rain-changing-to-snow (4877),
    damaging-hail (4878),
    hail (4879),
    thunderstorms (4880),
    thundershowers (4881),
    extremely-heavy-downpour (4882),
    heavy-rain (4883),
    rain (4884),
    light-rain (4885),
    drizzle (4886),
    showers (4887),
    dew (4888),
    precipitation-cleared (4889),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.19 qualifiers

3.6.5.19.1 ASN.1 REPRESENTATION

```
qualifiers ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Qualifiers:cd"
ASN-NAME "Qualifiers"
ASN-OBJECT-IDENTIFIER { itisDataElements qualifiers(1) },
DEFINITION "The ITIS enumeration list commonly referred to as "Qualifiers," is
assigned the upper byte value of [30] (which provides for value ranges from 7680 to
7935, inclusive). This list is formally called "Qualifiers" in the ASN.1 and XML
productions. Items from this enumeration list are not allowed to be used as an event
category classification. This list contains a total of 83 different phrases, divided
into 6 further sub-categories (the division into these sub-categories is informational
only and other groupings may also be used). The remaining 44 values up to the lower
byte value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
```

proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 7808)."

REMARKS ""

DESCRIPTIVE-NAME-CONTEXT {""}

DATA-CONCEPT-TYPE data-element

STANDARD "SAE J2540"

DATA-TYPE "Qualifiers ::= ENUMERATED {

above (7680),
below (7681),
in (7682),
around (7683),
after (7684),
before (7685),
at (7686),
on (7687),
near (7688),
from-the (7689),
terminal (7690),
falling-slowly (7691),
falling (7692),
falling-quickly (7693),
rising-slowly (7694),
rising (7695),
rising-quickly (7696),
steady (7697),
likely (7698),
changing-to (7699),
mostly (7700),
partly (7701),
minus (7702),
weather-ended (7703),
expected (7704),
low (7705),
mid (7706),
high (7707),
upper (7708),
unseasonably (7709),
reported (7710),
advice (7711),
due-to (7712),
proceed-to (7713),
transferred-to (7714),
use (7715),
affecting (7716),
blocking (7717),
connecting (7718),
finished (7719),
for (7720),
or (7721),
and (7722),
later (7723),
level (7724),
shortly (7725),
soon (7726),
service (7727),
graffiti (7728),
damaged (7729),
out-of-order (7730),
on-state-right-of-way (7731),
found-property (7732),
vandalism (7733),
begin-time (7734),
added (7735),
end-time (7736),
no (7737),

```

do-not (7738),
block (7739),
except (7740),
day (7741),
night (7742),
any-time (7743),
has (7744),
must (7745),
may-have (7746),
may-excced (7747),
only (7748),
lifted (7749),
empty (7750),
turning (7751),
u-turn (7752),
wait-for (7753),
when-flashing (7754),
duration (7755),
cross (7756),
when-wet (7757),
oncoming (7758),
to-request (7759),
exempt (7760),
skewed (7761),
when-children-are-present (7762),
...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.20 responderGroupAffected

3.6.5.20.1 ASN.1 REPRESENTATION

```

responderGroupAffected ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.ResponderGroupAffected:cd"
ASN-NAME "ResponderGroupAffected"
ASN-OBJECT-IDENTIFIER { itisDataElements responderGroupAffected(1) }
DEFINITION
    "The ITIS enumeration list commonly referred to as "Responder Group
    Affected," is assigned the upper byte value of [38] (which provides for value ranges
    from 9728 to 9983, inclusive). This list is formally called "ResponderGroupAffected"
    in the ASN.1 and XML productions. Items from this enumeration list can be used as an
    event category classification. This list contains a total of 15 different phrases.
    The remaining 112 values up to the lower byte value of [127] are reserved for
    additional "national" phrases in this byte range. Local phrases may be added to the
    list starting with the lower byte value of 128 and proceeding upward from there (in
    other words, the first value assigned for any local additions to this list would be
    given the value 9856)."
```

REMARKS ""

```

DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "ResponderGroupAffected ::= ENUMERATED {
    emergency-vehicle-units (9728),
    federal-law-enforcement-units (9729),
    state-police-units (9730),
    county-police-units (9731),
    local-police-units (9732),
    ambulance-units (9733),
    rescue-units (9734),
    fire-units (9735),
    hazmat-units (9736),
    light-tow-unit (9737),
    heavy-tow-unit (9738),
    private-tow-units (9739),

```

```

        freeway-service-patrols (9740),
        transportation-response-units (9741),
        private-contractor-response-units (9742),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.21 restrictionClass

3.6.5.21.1 ASN.1 REPRESENTATION

```

restrictionClass ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.RestrictionClass:cd"
    ASN-NAME "RestrictionClass"
    ASN-OBJECT-IDENTIFIER { itisDataElements restrictionClass(1) }
    DEFINITION
        "The ITIS enumeration list commonly referred to as "Restrictions," is
        assigned the upper byte value of [10] (which provides for value ranges from 2560 to
        2815, inclusive). This list is formally called "RestrictionClass" in the ASN.1 and
        XML productions. Items from this enumeration list can be used as an event category
        classification. This list contains a total of 41 different phrases, divided into 2
        further sub-categories (the division into these sub-categories is informational only
        and other groupings may also be used). The remaining 86 values up to the lower byte
        value of [127] are reserved for additional "national" phrases in this byte range.
        Local phrases may be added to the list starting with the lower byte value of 128 and
        proceeding upward from there (in other words, the first value assigned for any local
        additions to this list would be given the value 2688)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "RestrictionClass ::= ENUMERATED {
        restrictions (2560),
        ramp-restrictions (2561),
        truck-restriction (2562),
        speed-restriction (2563),
        noise-restriction (2564),
        traffic-regulations-have-been-changed (2565),
        local-access-only (2566),
        no-trailers (2567),
        no-high-profile-vehicles (2568),
        hazardous-materials-truck-restriction (2569),
        no-through-traffic (2570),
        no-motor-vehicles (2571),
        width-limit (2572),
        height-limit (2573),
        length-limit (2574),
        axle-load-limit (2575),
        gross-weight-limit (2576),
        axle-count-limit (2577),
        carpool-lane-available (2578),
        carpool-restrictions-changed (2579),
        hov-2-no-single-occupant-vehicles (2580),
        hov-3-no-vehicles-with-less-than-three-occupants (2581),
        bus-lane-available-for-all-vehicles (2582),
        truck-lane-available-for-all-vehicles (2583),
        permits-call-in-basis (2584),
        permits-temporarily-closed (2585),
        permits-closed (2586),
        road-use-permits-required (2587),
        permits-open (2588),
        restrictions-for-high-profile-vehicles-lifted (2589),
        width-limit-lifted (2590),
        height-limit-lifted (2591),
        length-limit-lifted (2592),

```

```

        axle-load-limit-lifted (2593),
        weight-limit-lifted (2594),
        axle-count-limit-lifted (2595),
        carpool-restrictions-lifted (2596),
        lane-restrictions-lifted (2597),
        ramp-restrictions-lifted (2598),
        motor-vehicle-restrictions-lifted (2599),
        restrictions-lifted (2600),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.6.5.22 roadwork

3.6.5.22.1 ASN.1 REPRESENTATION

```

roadwork ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Roadwork:cd"
    ASN-NAME "Roadwork"
    ASN-OBJECT-IDENTIFIER { itisDataElements roadwork(1) },
    DEFINITION
        "The ITIS enumeration list commonly referred to as "Roadwork," is
        assigned the upper byte value of [04] (which provides for value ranges from 1024 to
        1279, inclusive). This list is formally called "Roadwork" in the ASN.1 and XML
        productions. Items from this enumeration list can be used as an event category
        classification. This list contains a total of 44 different phrases, divided into 4
        further sub-categories (the division into these sub-categories is informational only
        and other groupings may also be used). The remaining 83 values up to the lower byte
        value of [127] are reserved for additional "national" phrases in this byte range.
        Local phrases may be added to the list starting with the lower byte value of 128 and
        proceeding upward from there (in other words, the first value assigned for any local
        additions to this list would be given the value 1152)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "Roadwork ::= ENUMERATED {
        road-construction (1024),
        major-road-construction (1025),
        long-term-road-construction (1026),
        construction-work (1027),
        paving-operations (1028),
        work-in-the-median (1029),
        road-reconstruction (1030),
        opposing-traffic (1031),
        narrow-lanes (1032),
        construction-traffic-merging (1033),
        single-line-traffic-alternating-directions (1034),
        road-maintenance-operations (1035),
        road-marking-operations (1036),
        road-widening (1037),
        cracks (1038),
        crack-remove (1039),
        bumps (1040),
        drop-off (1041),
        storm-drain (1042),
        bridge-maintenance-operations (1043),
        bridge-construction (1044),
        bridge-demolition-work (1045),
        seismic-retrofit (1046),
        overgrown-grass (1047),
        overgrown-brushshrubs (1048),
        overgrown-trees (1049),
        blasting (1050),
        avalanche-control-activities (1051),

```

```

    water-main-work (1052),
    gas-main-work (1053),
    work-on-underground-cables (1054),
    work-on-underground-services (1055),
    new-road-construction-layout (1056),
    new-road-layout (1057),
    temporary-lane-markings (1058),
    temporary-traffic-lights (1059),
    emergency-maintenance (1060),
    utility-work (1061),
    road-maintenance-cleared (1062),
    normal-road-layout-restored (1063),
    road-work-clearance-in-progress (1064),
    road-construction-cleared (1065),
    normal-traffic-lanes-restored (1066),
    road-work-cleared (1067),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.23 specialEvents

3.6.5.23.1 *ASN.1 REPRESENTATION*

```

specialEvents ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.SpecialEvents:cd"
    ASN-NAME "SpecialEvents"
    ASN-OBJECT-IDENTIFIER { itisDataElements specialEvents(1) }
    DEFINITION      "The ITIS enumeration list commonly referred to as "Special Events,"
    is assigned the upper byte value of [15] (which provides for value ranges from 3840 to
    4095, inclusive). This list is formally called "SpecialEvents" in the ASN.1 and XML
    productions. Items from this enumeration list can be used as an event category
    classification. This list contains a total of 23 different phrases, divided into 2
    further sub-categories (the division into these sub-categories is informational only
    and other groupings may also be used). The remaining 104 values up to the lower byte
    value of [127] are reserved for additional "national" phrases in this byte range.
    Local phrases may be added to the list starting with the lower byte value of 128 and
    proceeding upward from there (in other words, the first value assigned for any local
    additions to this list would be given the value 3968)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "SpecialEvents ::= ENUMERATED {
        major-event (3840),
        airshow (3841),
        hot-air-ballooning (3842),
        concert (3843),
        state-occasion (3844),
        vip-visit (3845),
        show (3846),
        festival (3847),
        exhibition (3848),
        performing-arts (3849),
        outdoor-market (3850),
        fair (3851),
        carnival (3852),
        fireworks-display (3853),
        trade-expo (3854),
        movie-filming (3855),
        presidential-visit (3856),
        parade (3857),
        procession (3858),
        funeral-procession (3859),

```



```

        crowd (3860),
        holiday-traffic-crowds (3861),
        event-ended (3862),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.24 sportingEvents

3.6.5.24.1 *ASN.1 REPRESENTATION*

```

sportingEvents ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.SportingEvents:cd"
ASN-NAME "SportingEvents"
ASN-OBJECT-IDENTIFIER { itisDataElements sportingEvents(1) },
DEFINITION
    "The ITIS enumeration list commonly referred to as "Sporting Events,"
    is assigned the upper byte value of [14] (which provides for value ranges from 3584 to
    3839, inclusive). This list is formally called "SportingEvents" in the ASN.1 and XML
    productions. Items from this enumeration list can be used as an event category
    classification. This list contains a total of 25 different phrases, divided into 2
    further sub-categories (the division into these sub-categories is informational only
    and other groupings may also be used). The remaining 102 values up to the lower byte
    value of [127] are reserved for additional "national" phrases in this byte range.
    Local phrases may be added to the list starting with the lower byte value of 128 and
    proceeding upward from there (in other words, the first value assigned for any local
    additions to this list would be given the value 3712)."
```

REMARKS ""

```

DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "SportingEvents ::= ENUMERATED {
    sports-event (3584),
    game (3585),
    tournament (3586),
    track-and-field-event (3587),
    baseball-game (3588),
    basketball-game (3589),
    boxing-match (3590),
    football-game (3591),
    soccer-game (3592),
    golf-tournament (3593),
    hockey-game (3594),
    tennis-tournament (3595),
    wrestling-match (3596),
    road-race (3597),
    automobile-race (3598),
    bicycle-race (3599),
    race-event (3600),
    marathon (3601),
    horse-show (3602),
    rodeo (3603),
    water-sports-event (3604),
    winter-sports-event (3605),
    skating-event (3606),
    dog-sled-race (3607),
    sporting-event-ended (3608),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.25 suggestionAdvice

3.6.5.25.1 *ASN.1 REPRESENTATION*

```
suggestionAdvice ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.SuggestionAdvice:cd"
  ASN-NAME "SuggestionAdvice"
  ASN-OBJECT-IDENTIFIER { itisDataElements suggestionAdvice(1) }
  DEFINITION      "The ITIS enumeration list commonly referred to as "Suggestion
Advice," is assigned the upper byte value of [26] (which provides for value ranges
from 6656 to 6911, inclusive). This list is formally called "SuggestionAdvice" in the
ASN.1 and XML productions. Items from this enumeration list can be used as an event
category classification. This list contains a total of 22 different phrases. The
remaining 105 values up to the lower byte value of [127] are reserved for additional
"national" phrases in this byte range. Local phrases may be added to the list
starting with the lower byte value of 128 and proceeding upward from there (in other
words, the first value assigned for any local additions to this list would be given
the value 6784)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "SuggestionAdvice ::= ENUMERATED {
  why-not-ride-share (6656),
  is-this-your-no-ride-day (6657),
  why-not-use-transit (6658),
  why-not-park-and-ride (6659),
  why-not-try-paratransit (6660),
  why-not-travel-by-rail (6661),
  why-not-use-the-subway (6662),
  why-not-try-rapid-transit (6663),
  why-not-travel-by-bus (6664),
  your-parking-ticket-covers-the-return-ride (6665),
  avoid-the-rush-hour (6666),
  do-not-allow-unnecessary-gaps (6667),
  follow-the-vehicle-in-front-smoothly (6668),
  do-not-slow-down-unnecessarily (6669),
  watch-for-muggers (6670),
  watch-for-pickpockets (6671),
  watch-for-thieves (6672),
  sorry-for-any-delay (6673),
  thank-you-for-your-understanding (6674),
  we-appreciate-your-patience (6675),
  we-are-grateful-for-your-cooperation (6676),
  share-the-road (6677),
  ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.26 **systemInformation**

3.6.5.26.1 *ASN.1 REPRESENTATION*

```
systemInformation ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.SystemInformation:cd"
  ASN-NAME "SystemInformation"
  ASN-OBJECT-IDENTIFIER { itisDataElements systemInformation(1) }
  DEFINITION      "The ITIS enumeration list commonly referred to as "Information
System," is assigned the upper byte value of [17] (which provides for value ranges
from 4352 to 4607, inclusive). This list is formally called "SystemInformation" in
the ASN.1 and XML productions. Items from this enumeration list can be used as an
event category classification. This list contains a total of 16 different phrases,
divided into 2 further sub-categories (the division into these sub-categories is
informational only and other groupings may also be used). The remaining 111 values up
to the lower byte value of [127] are reserved for additional "national" phrases in
```

this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 4480)."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "SystemInformation ::= ENUMERATED {
    information-available-on-radio (4352),
    information-available-on-tv (4353),
    call-to-get-information (4354),
    information-available-via-internet (4355),
    test-message (4356),
    no-information-available (4357),
    null-description (4358),
    police-assistance (4359),
    police-monitor-cb (4360),
    emergency-notification (4361),
    in-emergency-dial-911 (4362),
    travel-info-call-511 (4363),
    car-pool-information (4364),
    information-service-resumed (4365),
    information-service-is-being-suspended (4366),
    message-canceled (4367),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.27 temperature

3.6.5.27.1 ASN.1 REPRESENTATION

```
temperature ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.Temperature:cd"
ASN-NAME "Temperature"
ASN-OBJECT-IDENTIFIER { itisDataElements temperature(1) }
DEFINITION "The ITIS enumeration list commonly referred to as "Temperature," is
assigned the upper byte value of [22] (which provides for value ranges from 5632 to
5887, inclusive). This list is formally called "Temperature" in the ASN.1 and XML
productions. Items from this enumeration list can be used as an event category
classification. This list contains a total of 23 different phrases, divided into 2
further sub-categories (the division into these sub-categories is informational only
and other groupings may also be used). The remaining 104 values up to the lower byte
value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 5760)."
```

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "Temperature ::= ENUMERATED {
    maximum-temperature (5632),
    temperature (5633),
    minimum-temperature (5634),
    current-temperature (5635),
    heat-index (5636),
    extreme-heat (5637),
    hot (5638),
    hotter (5639),
    heat (5640),
    warmer (5641),
    warm (5642),
    mild (5643),
```

```

        cool (5644),
        cooler (5645),
        cold (5646),
        colder (5647),
        very-cold (5648),
        extreme-cold (5649),
        wind-chill (5650),
        dewpoint (5651),
        relative-humidity (5652),
        temperatures-close-to-the-seasonal-norm (5653),
        less-extreme-temperatures (5654),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.6.5.28 trafficConditions

3.6.5.28.1 ASN.1 REPRESENTATION

```

trafficConditions ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.TrafficConditions:cd"
ASN-NAME "TrafficConditions"
ASN-OBJECT-IDENTIFIER { itisDataElements trafficConditions(1) }
DEFINITION          "The ITIS enumeration list commonly referred to as "Traffic
Conditions," is assigned the upper byte value of [01] (which provides for value ranges
from 256 to 511, inclusive). This list is formally called "TrafficConditions" in the
ASN.1 and XML productions. Items from this enumeration list can be used as an event
category classification. This list contains a total of 19 different phrases, divided
into 2 further sub-categories (the division into these sub-categories is informational
only and other groupings may also be used). The remaining 108 values up to the lower
byte value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 384)."
```

REMARKS ""

```

DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "TrafficConditions ::= ENUMERATED {
    stopped-traffic (256),
    stop-and-go-traffic (257),
    slow-traffic (258),
    heavy-traffic (259),
    traffic-building (260),
    long-queues (261),
    traffic-congestion (262),
    traffic-lighter-than-normal (263),
    traffic-heavier-than-normal (264),
    traffic-much-heavier-than-normal (265),
    current-speed (266),
    speed-limit (267),
    travel-time (268),
    merging-traffic (269),
    traffic-flowing-freely (270),
    traffic-easing (271),
    traffic-returned-to-normal (272),
    no-problems-to-report (273),
    traffic-congestion-cleared (274),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE"  }

```

3.6.5.29 transitMode

3.6.5.29.1 ASN.1 REPRESENTATION

```
transitMode ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.TransitMode:cd"
  ASN-NAME "TransitMode"
  ASN-OBJECT-IDENTIFIER { itisDataElements transitMode(1) }
  DEFINITION "The ITIS enumeration list commonly referred to as "Transit Mode," is
  assigned the upper byte value of [35] (which provides for value ranges from 8960 to
  9215, inclusive). This list is formally called "TransitMode" in the ASN.1 and XML
  productions. Items from this enumeration list can be used as an event category
  classification. This list contains a total of 26 different phrases. The remaining
  101 values up to the lower byte value of [127] are reserved for additional "national"
  phrases in this byte range. Local phrases may be added to the list starting with the
  lower byte value of 128 and proceeding upward from there (in other words, the first
  value assigned for any local additions to this list would be given the value 9088)."
```

REMARKS ""

```
  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "SAE J2540"
  DATA-TYPE "TransitMode ::= ENUMERATED {
    travel (8960),
    transit (8961),
    bus (8962),
    trolleybus (8963),
    rail (8964),
    commuter-rail (8965),
    subway (8966),
    rapid-transit (8967),
    light-rail (8968),
    streetcar (8969),
    dial-a-ride (8970),
    park-and-ride (8971),
    shuttle (8972),
    free-shuttle (8973),
    airport-shuttle (8974),
    taxies (8975),
    ferry (8976),
    passenger-ferry (8977),
    vehicle-ferry (8978),
    aerial-tramway (8979),
    automated-guideway (8980),
    cable-cars (8981),
    monorail (8982),
    air-travel (8983),
    hitch-hitching (8984),
    walk (8985),
    ...}"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.30 transitOperations

3.6.5.30.1 ASN.1 REPRESENTATION

```
transitOperations ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.TransitOperations:cd"
  ASN-NAME "TransitOperations"
  ASN-OBJECT-IDENTIFIER { itisDataElements transitOperations(1) }
  DEFINITION "The ITIS enumeration list commonly referred to as "Transit
  Operations," is assigned the upper byte value of [42] (which provides for value ranges
  from 10752 to 11007, inclusive). This list is formally called "TransitOperations" in
```

the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 53 different phrases. The remaining 74 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 10880)."

REMARKS ""

DESCRIPTIVE-NAME-CONTEXT {""}

DATA-CONCEPT-TYPE data-element

STANDARD "SAE J2540"

DATA-TYPE "TransitOperations ::= ENUMERATED {
 unknown-transit-problem (10752),
 sleeping-customer (10753),
 assault-on-passenger (10754),
 assault-on-employee (10755),
 broken-seat (10756),
 bus-alarm (10757),
 crime-or-drug-deal (10758),
 eating-on-board (10759),
 equipment-problem-with-air-conditioning (10760),
 equipment-problem-with-air-system (10761),
 equipment-problem-with-brakes (10762),
 equipment-problem-with-chassis-or-suspension (10763),
 equipment-problem-with-cooling-system (10764),
 equipment-problem-with-doors (10765),
 equipment-problem-with-electrical (10766),
 equipment-problem-with-engine (10767),
 equipment-problem-with-exterior-or-body (10768),
 equipment-problem-with-fare-collection (10769),
 equipment-problem-with-fuel-or-exhaust (10770),
 equipment-problem-with-horn (10771),
 equipment-problem-with-interior (10772),
 equipment-problem-with-liftkneeling (10773),
 equipment-problem-with-lights (10774),
 equipment-problem-with-lubrication (10775),
 equipment-problem-with-radio-or-communication (10776),
 equipment-problem-with-signs (10777),
 equipment-problem-with-steering (10778),
 equipment-problem-with-tires (10779),
 equipment-problem-with-transmission (10780),
 equipment-problem-with-unknown-alarm (10781),
 equipment-problem-with-wipers (10782),
 fare-dispute-expired-pass (10783),
 fare-dispute-expired-transfer (10784),
 fare-dispute-expired-upgrade (10785),
 fare-dispute-other (10786),
 fare-dispute-refuses-to-pay (10787),
 lift-passenger-cycle-completed (10788),
 lift-passenger-ready-to-alight (10789),
 lift-passenger-ready-to-board (10790),
 lost-article (10791),
 objects-thrown (10792),
 passenger-accident-alighting (10793),
 passenger-accident-boarding (10794),
 passenger-accident-fallen-on-board (10795),
 passenger-load (10796),
 passenger-accident-other (10797),
 passenger-sick-or-injured (10798),
 right-of-way (10799),
 theft (10800),
 theft-of-service (10801),
 waiting-to-get-relief-for-schedule-break (10802),
 waiting-to-get-relief-after-run-is-finished (10803),
 waiting-to-provide-relief (10804),

```
...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.31 travelerGroupAffected

3.6.5.31.1 ASN.1 REPRESENTATION

```
travelerGroupAffected ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.TravelerGroupAffected:cd"
  ASN-NAME "TravelerGroupAffected"
  ASN-OBJECT-IDENTIFIER { itisDataElements travelerGroupAffected(1) }
  DEFINITION
    "The ITIS enumeration list commonly referred to as "Traveler Group
    Affected," is assigned the upper byte value of [37] (which provides for value ranges
    from 9472 to 9727, inclusive). This list is formally called "TravelerGroupAffected"
    in the ASN.1 and XML productions. Items from this enumeration list can be used as an
    event category classification. This list contains a total of 15 different phrases.
    The remaining 112 values up to the lower byte value of [127] are reserved for
    additional "national" phrases in this byte range. Local phrases may be added to the
    list starting with the lower byte value of 128 and proceeding upward from there (in
    other words, the first value assigned for any local additions to this list would be
    given the value 9600)."
```

REMARKS	""
DESCRIPTIVE-NAME-CONTEXT	{""}
DATA-CONCEPT-TYPE	data-element
STANDARD	"SAE J2540"
DATA-TYPE	"TravelerGroupAffected ::= ENUMERATED {
	through-traffic (9472),
	holiday-traffic (9473),
	residents (9474),
	visitors (9475),
	long-distance-traffic (9476),
	local-traffic (9477),
	regional-traffic (9478),
	arrivals (9479),
	departures (9480),
	airline-travelers (9481),
	commuter-airline-travelers (9482),
	domestic-airline-travelers (9483),
	international-airline-travelers (9484),
	pedestrians (9485),
	bicyclists (9486),
	...}"
FORMAT	"ASN.1 encoding"
UNIT-OF-MEASURE	""
VALID-VALUE-RULE	"see the ASN.1 DATA-TYPE" }

3.6.5.32 unusualDriving

3.6.5.32.1 ASN.1 REPRESENTATION

```
unusualDriving ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.UnusualDriving:cd"
  ASN-NAME "UnusualDriving"
  ASN-OBJECT-IDENTIFIER { itisDataElements unusualDriving(1) }
  DEFINITION
    "The ITIS enumeration list commonly referred to as "Unusual Driving,"
    is assigned the upper byte value of [07] (which provides for value ranges from 1792 to
    2047, inclusive). This list is formally called "UnusualDriving" in the ASN.1 and XML
    productions. Items from this enumeration list can be used as an event category
    classification. This list contains a total of 8 different phrases, divided into 2
    further sub-categories (the division into these sub-categories is informational only
    and other groupings may also be used). The remaining 119 values up to the lower byte
    value of [127] are reserved for additional "national" phrases in this byte range.
```

Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 1920)."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "UnusualDriving ::= ENUMERATED {
    vehicle-traveling-wrong-way (1792),
    reckless-driver (1793),
    prohibited-vehicle-on-roadway (1794),
    emergency-vehicles-on-roadway (1795),
    high-speed-emergency-vehicles (1796),
    high-speed-chase (1797),
    dangerous-vehicle-warning-cleared (1798),
    emergency-vehicle-warning-cleared (1799),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.5.33 vehicleGroupAffected

3.6.5.33.1 ASN.1 REPRESENTATION

```
vehicleGroupAffected ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Event.VehicleGroupAffected:cd"
ASN-NAME "VehicleGroupAffected"
ASN-OBJECT-IDENTIFIER { itisDataElements vehicleGroupAffected(1) }
DEFINITION "The ITIS enumeration list commonly referred to as "Vehicle Groups Affected," is assigned the upper byte value of [36] (which provides for value ranges from 9216 to 9471, inclusive). This list is formally called "VehicleGroupAffected" in the ASN.1 and XML productions. Items from this enumeration list can be used as an event category classification. This list contains a total of 45 different phrases. The remaining 82 values up to the lower byte value of [127] are reserved for additional "national" phrases in this byte range. Local phrases may be added to the list starting with the lower byte value of 128 and proceeding upward from there (in other words, the first value assigned for any local additions to this list would be given the value 9344)."
```

REMARKS ""

```
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "VehicleGroupAffected ::= ENUMERATED {
    all-vehicles (9216),
    bicycles (9217),
    motorcycles (9218),
    cars (9219),
    light-vehicles (9220),
    cars-and-light-vehicles (9221),
    cars-with-trailers (9222),
    cars-with-recreational-trailers (9223),
    vehicles-with-trailers (9224),
    heavy-vehicles (9225),
    trucks (9226),
    buses (9227),
    articulated-buses (9228),
    school-buses (9229),
    vehicles-with-semi-trailers (9230),
    vehicles-with-double-trailers (9231),
    high-profile-vehicles (9232),
    wide-vehicles (9233),
    long-vehicles (9234),
    hazardous-loads (9235),
    exceptional-loads (9236),
```



```

    abnormal-loads (9237),
    convoys (9238),
    maintenance-vehicles (9239),
    delivery-vehicles (9240),
    vehicles-with-even-numbered-license-plates (9241),
    vehicles-with-odd-numbered-license-plates (9242),
    vehicles-with-parking-permits (9243),
    vehicles-with-catalytic-converters (9244),
    vehicles-without-catalytic-converters (9245),
    gas-powered-vehicles (9246),
    diesel-powered-vehicles (9247),
    lpg-vehicles (9248),
    military-convoys (9249),
    military-vehicles (9250),
    electric-powered-vehicles (9251),
    hybrid-powered-vehicles (9252),
    inherently-low-emission-vehicles (9253),
    commercial-vehicles (9254),
    runaway-vehicles (9255),
    vehicles-with-lugs (9256),
    motor-driven-cycles (9257),
    recreational-vehicles (9258),
    non-motorized-vehicles (9259),
    traffic (9260),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.34 visibilityAndAirQuality

3.6.5.34.1 ASN.1 REPRESENTATION

```

visibilityAndAirQuality ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.VisibilityAndAirQuality:cd"
    ASN-NAME "VisibilityAndAirQuality"
    ASN-OBJECT-IDENTIFIER { itisDataElements visibilityAndAirQuality(1) }
    DEFINITION
        "The ITIS enumeration list commonly referred to as "Visibility & Air
        Quality," is assigned the upper byte value of [21] (which provides for value ranges
        from 9216 to 9471, inclusive). This list is formally called "VisibilityAndAirQuality"
        in the ASN.1 and XML productions. Items from this enumeration list can be used as an
        event category classification. This list contains a total of 34 different phrases,
        divided into 3 further sub-categories (the division into these sub-categories is
        informational only and other groupings may also be used). The remaining 93 values up
        to the lower byte value of [127] are reserved for additional "national" phrases in
        this byte range. Local phrases may be added to the list starting with the lower byte
        value of 128 and proceeding upward from there (in other words, the first value
        assigned for any local additions to this list would be given the value 5504)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "VisibilityAndAirQuality ::= ENUMERATED {
        dense-fog (5376),
        fog (5377),
        patchy-fog (5378),
        freezing-fog (5379),
        ice-fog (5380),
        mist (5381),
        haze (5382),
        visibility-reduced (5383),
        visibility-blocked (5384),
        white-out (5385),
        blowing-snow (5386),
        smoke-hazard (5387),

```

```

    spray-hazard (5388),
    low-sun-glare (5389),
    snow-glare (5390),
    blowing-dust (5391),
    blowing-sand (5392),
    dust-storms (5393),
    sandstorms (5394),
    air-quality-good (5395),
    air-quality-fair (5396),
    air-quality-poor (5397),
    air-quality-very-poor (5398),
    severe-exhaust-pollution (5399),
    smog-alert (5400),
    pollen-count-high (5401),
    pollen-count-medium (5402),
    pollen-count-low (5403),
    swarms-of-insects (5404),
    fog-clearing (5405),
    visibility-improved (5406),
    fog-forecast-withdrawn (5407),
    pollution-alert-ended (5408),
    air-quality-improved (5409),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.35 warningAdvice

3.6.5.35.1 ASN.1 REPRESENTATION

```

warningAdvice ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.WarningAdvice:cd"
    ASN-NAME "WarningAdvice"
    ASN-OBJECT-IDENTIFIER { itisDataElements warningAdvice(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Warning Advice,"
is assigned the upper byte value of [27] (which provides for value ranges from 9216 to
9471, inclusive). This list is formally called "WarningAdvice" in the ASN.1 and XML
productions. Items from this enumeration list can be used as an event category
classification. This list contains a total of 47 different phrases, divided into 3
further sub-categories (the division into these sub-categories is informational only
and other groupings may also be used). The remaining 80 values up to the lower byte
value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 7040)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "WarningAdvice ::= ENUMERATED {
        risk (6912),
        watch (6913),
        warning (6914),
        alert (6915),
        danger (6916),
        danger-of-explosion (6917),
        danger-of-fire (6918),
        extra-police-patrols-in-operation (6919),
        look-out-for-vehicles-stopped-under-bridges (6920),
        increased-risk-of-accident (6921),
        rescue-and-recovery-work-in-progress-at-scene (6922),
        police-at-scene (6923),
        emergency-vehicles-at-scene (6924),
        traffic-being-directed-around-accident-area (6925),

```

```

    police-directing-traffic (6926),
    rescue-workers-directing-traffic (6927),
    repairs-in-progress (6928),
    pilot-car-in-operation (6929),
    look-out-for-flagger (6930),
    look-out-for-workers (6931),
    police-checks-in-operation (6932),
    truck-check-point (6933),
    lockdown (6934),
    security-check-point (6935),
    single-occupancy-vehicle-check-point (6936),
    mandatory-speed-limit-in-force (6937),
    speed-limit-in-force-for-heavy-vehicles (6938),
    behind-you (6939),
    ride-with-traffic (6940),
    look (6941),
    photo-enforced (6942),
    traffic-signs (6943),
    traffic-laws (6944),
    use-low-gear (6945),
    bridge-ices-before-road (6946),
    speed-checked-by-radar (6947),
    speed-checked-by-aircraft (6948),
    fines (6949),
    fines-higher (6950),
    fines-doubled (6951),
    fines-tripled (6952),
    warning-canceled (6953),
    watch-canceled (6954),
    alert-canceled (6955),
    ended (6956),
    cleared (6957),
    canceled (6958),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.36 weatherConditions

3.6.5.36.1 ASN.1 REPRESENTATION

```

weatherConditions ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.WeatherConditions:cd"
    ASN-NAME "WeatherConditions"
    ASN-OBJECT-IDENTIFIER { itisDataElements weatherConditions(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Weather
    Conditions," is assigned the upper byte value of [18] (which provides for value ranges
    from 4608 to 4863, inclusive). This list is formally called "WeatherConditions" in
    the ASN.1 and XML productions. Items from this enumeration list can be used as an
    event category classification. This list contains a total of 28 different phrases,
    divided into 3 further sub-categories (the division into these sub-categories is
    informational only and other groupings may also be used). The remaining 99 values up
    to the lower byte value of [127] are reserved for additional "national" phrases in
    this byte range. Local phrases may be added to the list starting with the lower byte
    value of 128 and proceeding upward from there (in other words, the first value
    assigned for any local additions to this list would be given the value 4736)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "WeatherConditions ::= ENUMERATED {
        overcast (4608),
        cloudy (4609),
        mostly-cloudy (4610),

```

```

    partly-cloudy (4611),
    partly-sunny (4612),
    mostly-sunny (4613),
    sunny (4614),
    fair-skies (4615),
    clear-skies (4616),
    mostly-clear (4617),
    mostly-dry (4618),
    dry (4619),
    uv-index-very-high (4620),
    uv-index-high (4621),
    uv-index-moderate (4622),
    uv-index-low (4623),
    uv-index-very-low (4624),
    barometric-pressure (4625),
    ozone-alert (4626),
    lighting-unknown (4627),
    artificial-exterior-light (4628),
    artificial-interior-light (4629),
    darkness (4630),
    dusk (4631),
    dawn (4632),
    moonlight (4633),
    daylight (4634),
    weather-forecast-withdrawn (4635),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.37 winds

3.6.5.37.1 ASN.1 REPRESENTATION

```

winds ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Event.Winds:cd"
    ASN-NAME "Winds"
    ASN-OBJECT-IDENTIFIER { itisDataElements winds(1) }
    DEFINITION "The ITIS enumeration list commonly referred to as "Winds," is
assigned the upper byte value of [20] (which provides for value ranges from 5120 to
5375, inclusive). This list is formally called "Winds" in the ASN.1 and XML
productions. Items from this enumeration list can be used as an event category
classification. This list contains a total of 15 different phrases, divided into 2
further sub-categories (the division into these sub-categories is informational only
and other groupings may also be used). The remaining 112 values up to the lower byte
value of [127] are reserved for additional "national" phrases in this byte range.
Local phrases may be added to the list starting with the lower byte value of 128 and
proceeding upward from there (in other words, the first value assigned for any local
additions to this list would be given the value 5248)."
```

REMARKS ""

```

    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "SAE J2540"
    DATA-TYPE "Winds ::= ENUMERATED {
        tornado (5120),
        hurricane (5121),
        hurricane-force-winds (5122),
        tropical-storm (5123),
        gale-force-winds (5124),
        storm-force-winds (5125),
        strong-winds (5126),
        moderate-winds (5127),
        light-winds (5128),
        calm (5129),
        gusty-winds (5130),

```

```

        crosswinds (5131),
        windy (5132),
        strong-winds-have-eased (5133),
        strong-wind-forecast-withdrawn (5134),
        ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.38 winterDrivingIndex

3.6.5.38.1 ASN.1 REPRESENTATION

```

winterDrivingIndex ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.WinterDrivingIndex:cd"
  ASN-NAME "WinterDrivingIndex"
  ASN-OBJECT-IDENTIFIER { itisDataElements winterDrivingIndex(1) }
  DEFINITION
    "The ITIS enumeration list commonly referred to as "Winter Driving
    Index," is assigned the upper byte value of [25] (which provides for value ranges from
    6400 to 6655, inclusive). This list is formally called "WinterDrivingIndex" in the
    ASN.1 and XML productions. Items from this enumeration list can be used as an event
    category classification. This list contains a total of 6 different phrases. The
    remaining 121 values up to the lower byte value of [127] are reserved for additional
    "national" phrases in this byte range. Local phrases may be added to the list
    starting with the lower byte value of 128 and proceeding upward from there (in other
    words, the first value assigned for any local additions to this list would be given
    the value 6528)."
```

REMARKS ""

```

  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "SAE J2540"
  DATA-TYPE "WinterDrivingIndex ::= ENUMERATED {
    driving-conditions-good (6400),
    driving-conditions-fair (6401),
    difficult-driving-conditions (6402),
    very-difficult-driving-conditions (6403),
    hazardous-driving-conditions (6404),
    extremely-hazardous-driving-conditions (6405),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.5.39 winterDrivingRestrictions

3.6.5.39.1 ASN.1 REPRESENTATION

```

winterDrivingRestrictions ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Event.WinterDrivingRestrictions:cd"
  ASN-NAME "WinterDrivingRestrictions"
  ASN-OBJECT-IDENTIFIER { itisDataElements winterDrivingRestrictions(1) }
  DEFINITION
    "The ITIS enumeration list commonly referred to as "Winter Driving
    Restrictions and Recommendations," is assigned the upper byte value of [24] (which
    provides for value ranges from 6144 to 6399, inclusive). This list is formally called
    "WinterDrivingRestrictions" in the ASN.1 and XML productions. Items from this
    enumeration list can be used as an event category classification. This list contains
    a total of 13 different phrases, divided into 2 further sub-categories (the division
    into these sub-categories is informational only and other groupings may also be used).
    The remaining 114 values up to the lower byte value of [127] are reserved for
    additional "national" phrases in this byte range. Local phrases may be added to the
    list starting with the lower byte value of 128 and proceeding upward from there (in
    other words, the first value assigned for any local additions to this list would be
    given the value 6272)."
```

REMARKS ""

```

DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2540"
DATA-TYPE "WinterDrivingRestrictions ::= ENUMERATED {
    winter-equipment-recommended (6144),
    winter-equipment-required (6145),
    snow-chains-recommended (6146),
    snow-chains-required (6147),
    snow-chains-prohibited (6148),
    studded-tires-prohibited (6149),
    snow-tires-recommended (6150),
    snow-tires-required (6151),
    four-wheel-drive-recommended (6152),
    four-wheel-drive-required (6153),
    snow-tires-or-chains-recommended (6154),
    snow-tires-or-chains-required (6155),
    winter-driving-requirements-lifted (6156),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.6 Global Class Data Elements

3.6.6.1 timeBaseScheduleNumber

3.6.6.1.1 ASN.1 REPRESENTATION

```

timeBaseScheduleNumber ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Global.TimeBaseScheduleNumber:nbr"
    ASN-NAME "TimeBaseScheduleNumber"
    ASN-OBJECT-IDENTIFIER { timeBaseScheduleEntry 1 }
    DEFINITION "The time base schedule number for objects in this row. The value of
this object shall not exceed the value of the maxTimeBaseScheduleEntries object. The
activation of a scheduled entry shall occur whenever allowed by all other objects
within this table."
    REMARKS ""
    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "NTCIP 1201"
    DATA-TYPE "TimeBaseScheduleNumber ::= INTEGER (1..65535)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.6.2 timeBaseScheduleMonth

3.6.6.2.1 ASN.1 REPRESENTATION

```

timeBaseScheduleMonth ITS-DATA-ELEMENT ::= {
    DESCRIPTIVE-NAME "Global.TimeBaseScheduleMonth:nbr"
    ASN-NAME "TimeBaseScheduleMonth"
    ASN-OBJECT-IDENTIFIER { timeBaseScheduleEntry 2 }
    DEFINITION "The Month(s) Of the Year that the schedule entry shall be allowed.
Each bit represents a specific month. If the bit is set to one (1), then the scheduled
entry shall be allowed during the associated month. If the bit is zero (0), "
    REMARKS ""
    DESCRIPTIVE-NAME-CONTEXT {""}
    DATA-CONCEPT-TYPE data-element
    STANDARD "NTCIP 1201"
    DATA-TYPE "TimeBaseScheduleMonth ::= INTEGER (0..65535)"
    FORMAT "ASN.1 encoding"
    UNIT-OF-MEASURE ""
    VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.6.3 timeBaseScheduleDay

3.6.6.3.1 ASN.1 REPRESENTATION

```
timeBaseScheduleDay ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.TimeBaseScheduleDay:nbr"  
  ASN-NAME "TimeBaseScheduleDay"  
  ASN-OBJECT-IDENTIFIER { timeBaseScheduleEntry 3 }  
  DEFINITION      "The Day(s) Of Week that the schedule entry shall be allowed. Each  
    bit represents a specific day of the week. If the bit is set to one (1), then the  
    scheduled entry shall be allowed during the associated DOW. If the bit is set to zero  
    (0), "  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1201"  
  DATA-TYPE "TimeBaseScheduleDay ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.4 timeBaseScheduleDate

3.6.6.4.1 ASN.1 REPRESENTATION

```
timeBaseScheduleDate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.TimeBaseScheduleDate:nbr"  
  ASN-NAME "TimeBaseScheduleDate"  
  ASN-OBJECT-IDENTIFIER { timeBaseScheduleEntry 4 }  
  DEFINITION      "The Day(s) Of a Month that the schedule entry shall be allowed. Each  
    bit represents a specific date of the month. If the bit is set to one (1), then the  
    scheduled entry shall be allowed during the associated date. If the bit is set to zero  
    (0), "  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1201"  
  DATA-TYPE "TimeBaseScheduleDate ::= INTEGER (0..4294967295)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.5 timeBaseScheduleDayPlan

3.6.6.5.1 ASN.1 REPRESENTATION

```
timeBaseScheduleDayPlan ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.TimeBaseScheduleDayPlan:nbr"  
  ASN-NAME "TimeBaseScheduleDayPlan"  
  ASN-OBJECT-IDENTIFIER { timeBaseScheduleEntry 5 }  
  DEFINITION      "This object specifies what Plan number shall be associated with this  
    timeBaseScheduleDayPlan -object. A value of zero (0) shall indicate that this row has  
    been disabled."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1201"  
  DATA-TYPE "TimeBaseScheduleDayPlan ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.6 dayPlanHour

3.6.6.6.1 ASN.1 REPRESENTATION

```
dayPlanHour ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.DayPlanHour:nbr"  
  ASN-NAME "DayPlanHour"  
  ASN-OBJECT-IDENTIFIER { timeBaseDayPlanEntry 3 }  
  DEFINITION      "The Hour of day, as measured by the controllerLocalTime object, that  
the associated event shall become active."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1201"  
  DATA-TYPE "DayPlanHour ::= INTEGER (0..23)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.7 dayPlanMinute

3.6.6.7.1 ASN.1 REPRESENTATION

```
dayPlanMinute ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.DayPlanMinute:nbr"  
  ASN-NAME "DayPlanMinute"  
  ASN-OBJECT-IDENTIFIER { timeBaseDayPlanEntry 4 }  
  DEFINITION      "The Minute of the hour (defined in the dayPlanHour), as measured by  
the controllerLocalTime object, that the associated event shall become active."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1201"  
  DATA-TYPE "DayPlanMinute ::= INTEGER (0..59)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.8 horizontalDatum

3.6.6.8.1 ASN.1 REPRESENTATION

```
horizontalDatum ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.HorizontalDatum:cd"  
  ASN-NAME "HorizontalDatum"  
  ASN-OBJECT-IDENTIFIER { lrmsDataElements horizontalDatum(1) }  
  DEFINITION      "The underlying horizontal geodetic datum for a geographic  
coordinate."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "SAE J2266"  
  DATA-TYPE "HorizontalDatum ::= ENUMERATED {  
    wgs-84 (0),  
    wgs-84egm-96 (1),  
    nad83 (2),  
    nad27 (3)  
  }"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```


3.6.6.9 latitude

3.6.6.9.1 ASN.1 REPRESENTATION

```
latitude ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.Latitude:lctn"  
  ASN-NAME "Latitude"  
  ASN-OBJECT-IDENTIFIER { lrmsDataElements latitude (1) }  
  DEFINITION          "The geographic latitude of a node expressed in integer microdegrees,  
  with reference to the horizontal datum specified by horizontalDatum."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "SAE J2266"  
  DATA-TYPE "Latitude ::= INTEGER (-9000000000..9000000001)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "tenth of a micro degree"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.10 longitude

3.6.6.10.1 ASN.1 REPRESENTATION

```
longitude ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.Longitude:lctn"  
  ASN-NAME "Longitude"  
  ASN-OBJECT-IDENTIFIER { lrmsDataElements longitude (1) }  
  DEFINITION          "The geographic longitude of a node, expressed in integer  
  microdegrees, with reference to the horizontal datum specified by horizontalDatum."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "SAE J2266"  
  DATA-TYPE "Longitude ::= INTEGER (-18000000000..18000000001)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "tenth of a micro degree"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.11 LRMethod

3.6.6.11.1 ASN.1 REPRESENTATION

```
LRMethod ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.LRMethod:cd"  
  ASN-NAME "LRMethod"  
  ASN-OBJECT-IDENTIFIER { lrmsDataElements LRMethod(1) }  
  DEFINITION          "Value Domain for the method of linear referencing used in a Linear  
  Referencing record."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "SAE J2266"  
  DATA-TYPE "LRMethod ::= ENUMERATED {  
    milepoint (0),  
    kilopoint (1),  
    percentage (2),  
    milepost (3),  
    referencePost (4),  
    countyMilepost (5),  
    stationing (6),  
    streetAddress (7),  
    crossStreet (8)  
  }"
```

```
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.12 verticalDatum

3.6.6.12.1 ASN.1 REPRESENTATION

```
verticalDatum ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.VerticalDatum:cd"
  ASN-NAME "VerticalDatum"
  ASN-OBJECT-IDENTIFIER { lrmsDataElements verticalDatum(1) }
  DEFINITION "The underlying vertical geodetic datum for a geographic coordinate."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "SAE J2266"
  DATA-TYPE "VerticalDatum ::= ENUMERATED {
    wgs-84 (0),
    navd (2)
  }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.13 verticalLevel

3.6.6.13.1 ASN.1 REPRESENTATION

```
verticalLevel ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.VerticalLevel:qty"
  ASN-NAME "VerticalLevel"
  ASN-OBJECT-IDENTIFIER { lrmsDataElements verticalLevel(1) }
  DEFINITION "Vertical level specified as an ordinal class expressed positive (above) or negative (below) the ground surface or ground level of a structure (VerticalLevel = 0). For highway intersections or other transportation features, the zero level is the ground surface level, whether or not traffic occurs on the ground surface through the intersection or tunnel. For example, for bridges, the lowest level of the bridge would be level +1 and, for tunnels, the highest level would be -1. For parking structures or buildings, the zero level is that level called "ground" or "main" or "lobby" or "first" floor, or otherwise most closely associated with the surrounding ground surface. Note that for a building, the VerticalLevel may not correspond to the official number of or label on a floor, but refers to the relative level with respect to the zero level. This concept is useable in countries with differing numbering conventions for building floors."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "SAE J2266"
  DATA-TYPE "VerticalLevel ::= INTEGER (-128..127)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.14 broadcastAlertsItem

3.6.6.14.1 ASN.1 REPRESENTATION

```
broadcastAlertsItem ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.BroadcastAlertsItem:cd"
  ASN-NAME "BroadcastAlertsItem"
  ASN-OBJECT-IDENTIFIER { c2cDataElements broadcastAlertsItem(1) }
  DEFINITION ""
```

```
REMARKS "See NTCIP 2306:7.2.1.3:BroadcastAlertsItem"
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 2306"
DATA-TYPE "BroadcastAlertsItem ::= ENUMERATED {
    reserved (0)
    broadcastAlertsAccepted (1)
    broadcastAlertsNotAccepted (2) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.15 returnAddress

3.6.6.15.1 ASN.1 REPRESENTATION

```
returnAddress ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Global.ReturnAddress:txt"
ASN-NAME "ReturnAddress"
ASN-OBJECT-IDENTIFIER { c2cDataElements returnAddress(1) }
DEFINITION "A URL indicating the subscriber callback message handler. Any set of
ASCII characters up to 128."
REMARKS "See NTCIP 2306:7.2.1.3:ReturnAddress"
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 2306"
DATA-TYPE "ReturnAddress ::= IA5STRING (SIZE(1..128))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.16 subscriptionActionItem

3.6.6.16.1 ASN.1 REPRESENTATION

```
subscriptionActionItem ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Global.SubscriptionActionItem:cd"
ASN-NAME "SubscriptionActionItem"
ASN-OBJECT-IDENTIFIER { c2cDataElements subscriptionActionItem(1) }
DEFINITION "Any set of ASCII characters up to 255"
REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionActionItem"
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 2306"
DATA-TYPE "SubscriptionActionItem ::= ENUMERATED {
    reserved (0)
    newSubscription (1)
    replaceSubscription (2)
    cancelSubscription (3)
    cancelAllPriorSubscriptions (4) }"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.17 subscriptionCount

3.6.6.17.1 ASN.1 REPRESENTATION

```
subscriptionCount ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Global.SubscriptionCount:qty"
ASN-NAME "SubscriptionCount"
ASN-OBJECT-IDENTIFIER { c2cDataElements subscriptionCount(1) }
```

DEFINITION "The nth time the publisher has sent content as part of a description to the subscriber."
REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionCount"
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 2306"
DATA-TYPE "SubscriptionCount ::= INTEGER (1..4294967295)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.6.18 subscriptionFrequency

3.6.6.18.1 ASN.1 REPRESENTATION

```
subscriptionFrequency ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.SubscriptionFrequency:qty"  
  ASN-NAME "SubscriptionFrequency"  
  ASN-OBJECT-IDENTIFIER { c2cDataElements subscriptionFrequency(1) }  
  DEFINITION "seconds"  
  REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionFrequency"  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 2306"  
  DATA-TYPE "SubscriptionFrequency ::= INTEGER (1..4294967295)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "seconds"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.19 subscriptionID

3.6.6.19.1 ASN.1 REPRESENTATION

```
subscriptionID ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.SubscriptionID:id"  
  ASN-NAME "SubscriptionID"  
  ASN-OBJECT-IDENTIFIER { c2cDataElements subscriptionID(1) }  
  DEFINITION "ID created by the subscription subscriber. Any set of alphanumeric characters up to 32"  
  REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionID"  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 2306"  
  DATA-TYPE "SubscriptionID ::= IA5STRING (SIZE(1..32))"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.20 subscriptionName

3.6.6.20.1 ASN.1 REPRESENTATION

```
subscriptionName ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "Global.SubscriptionName:txt"  
  ASN-NAME "SubscriptionName"  
  ASN-OBJECT-IDENTIFIER { c2cDataElements subscriptionName(1) }  
  DEFINITION "Name created by the subscriber for a subscription. Any set of ASCII characters up to 128."  
  REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionName"  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 2306"  
  DATA-TYPE "SubscriptionName ::= IA5STRING (SIZE(1..128))"
```

```
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.21 subscriptionTypeItem

3.6.6.21.1 ASN.1 REPRESENTATION

```
subscriptionTypeItem ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.SubscriptionTypeItem:cd"
  ASN-NAME "SubscriptionTypeItem"
  ASN-OBJECT-IDENTIFIER { c2cDataElements subscriptionTypeItem(1) }
  DEFINITION ""
  REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionTypeItem"
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 2306"
  DATA-TYPE "SubscriptionTypeItem ::= ENUMERATED {
    reserved (0)
    oneTime (1)
    periodic (2)
    onChange (3) }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.22 date

3.6.6.22.1 ASN.1 REPRESENTATION

```
date ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.Date:dt"
  ASN-NAME "Date"
  ASN-OBJECT-IDENTIFIER { atisDataElements date(1) }
  DEFINITION "Date for which a directory entry, or other use, is being requested
  by a Traveler or used in a returned message. The precise time at which this date
  starts may vary with the time zone of the service. For example: Saturday stay over
  rates for an airline begin at the point of departure.
  format as: YYYYMMDD where
  YYYY the year, in common era units
  MM the month, range 01 to 12
  DD the day, range 01 to 31
  use zero for MM and DD when not applicable"
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "SAE J2354"
  DATA-TYPE "Date ::= OCTETSTRING (SIZE(8))"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.6.23 time

3.6.6.23.1 ASN.1 REPRESENTATION

```
time ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "Global.Time:utc"
  ASN-NAME "Time"
  ASN-OBJECT-IDENTIFIER { atisDataElements time(1) }
  DEFINITION "Time for which a directory entry is being requested by a Traveler or
  used in a returned message.
  Format: HHMMSSssss
```

```

Valid times using 24 hour notation.
HH=00 through 23; MM=00 through 59;
SS=00 through 59; 00 if NA
ssss=0000 through 9999.
Use SS= 60 for leap seconds
HH represents hours, MM minutes, SS seconds, and ssss decimal seconds to
whatever number of significant digits is required (up to four)"
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2354"
DATA-TYPE "Time ::= OCTETSTRING (SIZE(6..10))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.6.24 timeOffset

3.6.6.24.1 ASN.1 REPRESENTATION

```

timeOffset ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "Global.TimeOffset:utc"
ASN-NAME "TimeOffset"
ASN-OBJECT-IDENTIFIER { atisDataElements timeOffset(1) }
DEFINITION "Time zone, or offset, for a local time from GMT. Note that not all
time offsets are in units of even hours.
Valid time offset using 24 hour notation.
HH=00 through 23; MM=00 through 59."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "SAE J2354"
DATA-TYPE "TimeOffset ::= OCTETSTRING (SIZE(4))"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.7 IntersectionSignal Class Data Elements

3.6.7.1 coordCycleStatus

3.6.7.1.1 ASN.1 REPRESENTATION

```

coordCycleStatus ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "IntersectionSignal.CoordCycleStatus:qty"
ASN-NAME "CoordCycleStatus"
ASN-OBJECT-IDENTIFIER { coord 12 }
DEFINITION "The Coord Cycle Status represents the current position in the local
coord cycle of the running pattern (0 to 510 sec). This value normally counts down
from patternCycleTime to Zero. This value may exceed the patternCycleTime during a
coord cycle with offset correction (patternCycleTime + correction)."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1202"
DATA-TYPE "CoordCycleStatus ::= INTEGER (0..510)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "second"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.7.2 coordSyncStatus

3.6.7.2.1 ASN.1 REPRESENTATION

```
coordSyncStatus ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.CoordSyncStatus:qty"  
  ASN-NAME "CoordSyncStatus"  
  ASN-OBJECT-IDENTIFIER { coord 13 }  
  DEFINITION          "The Coord Sync Status represents the time since the system reference  
point for the running pattern (0 to 510 sec). This value normally counts up from Zero  
to the next system reference  
point (patternCycleTime). This value may exceed the patternCycleTime during a coord  
cycle in which the system reference point has changed."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"  
  DATA-TYPE "CoordSyncStatus ::= INTEGER (0..510)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "second"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.3 overlapNumber

3.6.7.3.1 ASN.1 REPRESENTATION

```
overlapNumber ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.OverlapNumber:nbr"  
  ASN-NAME "OverlapNumber"  
  ASN-OBJECT-IDENTIFIER { overlapEntry 1 }  
  DEFINITION          "The overlap number for objects in this row. The value shall not  
exceed the maxOverlaps object. The value maps to the Overlap as follows: 1 = Overlap  
A, 2 = Overlap B etc."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"  
  DATA-TYPE "OverlapNumber ::= INTEGER (1..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "overlap"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.4 overlapStatusGroupNumber

3.6.7.4.1 ASN.1 REPRESENTATION

```
overlapStatusGroupNumber ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.OverlapStatusGroupNumber:nbr"  
  ASN-NAME "OverlapStatusGroupNumber"  
  ASN-OBJECT-IDENTIFIER { overlapStatusGroupEntry 1 }  
  DEFINITION          "The overlap StatusGroup number for objects in this row. This value  
shall not exceed the maxOverlapStatusGroups object value."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"  
  DATA-TYPE "OverlapStatusGroupNumber ::= INTEGER (1..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "group"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.5 overlapStatusGroupGreens

3.6.7.5.1 ASN.1 REPRESENTATION

```
overlapStatusGroupGreens ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.OverlapStatusGroupGreens:nbr"
```

```
ASN-NAME "OverlapStatusGroupGreens"
ASN-OBJECT-IDENTIFIER { overlapStatusGroupEntry 4 }
DEFINITION      "Overlap Green Output Status Mask, when a bit=1, the Overlap Green is
"
currently active. When a bit=0, the Overlap Green is NOT currently active.
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1202"
DATA-TYPE "OverlapStatusGroupGreens ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.6 overlapStatusGroupReds

3.6.7.6.1 ASN.1 REPRESENTATION

```
overlapStatusGroupReds ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "IntersectionSignal.OverlapStatusGroupReds:nbr"
ASN-NAME "OverlapStatusGroupReds"
ASN-OBJECT-IDENTIFIER { overlapStatusGroupEntry 2 }
DEFINITION      "Overlap Red Output Status Mask, when a bit=1, the Overlap Red is
"
currently active. When a bit=0, the Overlap Red is NOT currently active.
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1202"
DATA-TYPE "OverlapStatusGroupReds ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.7 overlapStatusGroupYellows

3.6.7.7.1 ASN.1 REPRESENTATION

```
overlapStatusGroupYellows ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "IntersectionSignal.OverlapStatusGroupYellows:nbr"
ASN-NAME "OverlapStatusGroupYellows"
ASN-OBJECT-IDENTIFIER { overlapStatusGroupEntry 3 }
DEFINITION      "Overlap Yellow Output Status Mask, when a bit=1, the Overlap Yellow
is currently active. When a bit=0, the Overlap Yellow is NOT currently active.
Bit 7: Overlap # = (overlapStatusGroupNumber * 8)
Bit 6: Overlap # = (overlapStatusGroupNumber * 8) - 1
Bit 5: Overlap # = (overlapStatusGroupNumber * 8) - 2
Bit 4: Overlap # = (overlapStatusGroupNumber * 8) - 3
Bit 3: Overlap # = (overlapStatusGroupNumber * 8) - 4
Bit 2: Overlap # = (overlapStatusGroupNumber * 8) - 5
Bit 1: Overlap # = (overlapStatusGroupNumber * 8) - 6
Bit 0: Overlap # = (overlapStatusGroupNumber * 8) - 7"
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1202"
DATA-TYPE "OverlapStatusGroupYellows ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.8 patternCycleTime

3.6.7.8.1 ASN.1 REPRESENTATION

```
patternCycleTime ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.PatternCycleTime:qty"  
  ASN-NAME "PatternCycleTime"  
  ASN-OBJECT-IDENTIFIER { patternEntry 2 }  
  DEFINITION "The patternCycleTime object specifies the length of the pattern  
cycle in seconds (NEMA TS 2 range: 30-255). A pattern cycle time less than adequate to  
service the minimum requirements of all phases shall result in Free mode. While this  
condition exists, the Local Free bit of unitAlarmStatus1 and the Local Override bit of  
shortAlarmStatus shall be set to one (1).  
The minimum requirements of a phase with a not-actuated ped include Minimum Green,  
Walk, Pedestrian Clear, Yellow Clearance, and Red Clearance; the minimum requirements  
of a phase with an actuated pedestrian include Minimum Green, Yellow Clearance, and  
Red Clearance. If the pattern cycle time is zero and the associated split table (if  
any) contains values greater than zero, then the CU shall utilize the split time  
values as maximum values for each phase."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"  
  DATA-TYPE "PatternCycleTime ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "second"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.9 patternOffsetTime

3.6.7.9.1 ASN.1 REPRESENTATION

```
patternOffsetTime ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.PatternOffsetTime:qty"  
  ASN-NAME "PatternOffsetTime"  
  ASN-OBJECT-IDENTIFIER { patternEntry 3 }  
  DEFINITION "The patternOffsetTime defines by how many seconds (NEMA TS 2 range:  
0-254) the local time zero shall lag the system time zero (synchronization pulse) for  
this pattern. An offset value equal to or greater than the patternCycleTime shall  
result in Free being the operational mode. While this condition exists, the Local Free  
bit of unitAlarmStatus1 and the LocalOverride bit of shortAlarmStatus shall be set to  
one (1)."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"  
  DATA-TYPE "PatternOffsetTime ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "second"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.10 phaseStatusGroupNumber

3.6.7.10.1 ASN.1 REPRESENTATION

```
phaseStatusGroupNumber ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.PhaseStatusGroupNumber:nbr"  
  ASN-NAME "PhaseStatusGroupNumber"  
  ASN-OBJECT-IDENTIFIER { phaseStatusGroupEntry 1 }  
  DEFINITION "The Phase StatusGroup number for objects in this row. This value  
shall not exceed the maxPhaseGroups object value."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"
```

```
DATA-TYPE "PhaseStatusGroupNumber ::= INTEGER (1..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "group"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.11 phaseStatusGroupDontWalks

3.6.7.11.1 ASN.1 REPRESENTATION

```
phaseStatusGroupDontWalks ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.PhaseStatusGroupDontWalks:nbr"
  ASN-NAME "PhaseStatusGroupDontWalks"
  ASN-OBJECT-IDENTIFIER { phaseStatusGroupEntry 5 }
  DEFINITION
    "Phase Dont Walk Output Status Mask, when a bit = 1, the Phase Dont
    Walk is currently active. When a bit = 0, the Phase Dont Walk is NOT currently active.
    Bit 7: Phase # = (phaseStatusGroupNumber * 8)
    Bit 6: Phase # = (phaseStatusGroupNumber * 8) - 1
    Bit 5: Phase # = (phaseStatusGroupNumber * 8) - 2
    "
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1202"
  DATA-TYPE "PhaseStatusGroupDontWalks ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "group"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.12 phaseStatusGroupGreens

3.6.7.12.1 ASN.1 REPRESENTATION

```
phaseStatusGroupGreens ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.PhaseStatusGroupGreens:nbr"
  ASN-NAME "PhaseStatusGroupGreens"
  ASN-OBJECT-IDENTIFIER { phaseStatusGroupEntry 4 }
  DEFINITION
    "Phase Green Output Status Mask, when a bit = 1, the Phase Green is
    currently active. When a bit = 0, the Phase Green is NOT currently active.
    Bit 7: Phase # = (phaseStatusGroupNumber * 8)
    Bit 6: Phase # = (phaseStatusGroupNumber * 8) - 1
    Bit 5: Phase # = (phaseStatusGroupNumber * 8) - 2
    Bit 4: Phase # = (phaseStatusGroupNumber * 8) - 3
    Bit 3: Phase # = (phaseStatusGroupNumber * 8) - 4
    Bit 2: Phase # = (phaseStatusGroupNumber * 8) - 5
    Bit 1: Phase # = (phaseStatusGroupNumber * 8) - 6
    Bit 0: Phase # = (phaseStatusGroupNumber * 8) - 7"
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1202"
  DATA-TYPE "PhaseStatusGroupGreens ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "group"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.13 phaseStatusGroupPedClears

3.6.7.13.1 ASN.1 REPRESENTATION

```
phaseStatusGroupPedClears ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.PhaseStatusGroupPedClears:nbr"
  ASN-NAME "PhaseStatusGroupPedClears"
  ASN-OBJECT-IDENTIFIER { phaseStatusGroupEntry 6 }
```

DEFINITION "Phase Ped Clear Output Status Mask, when a bit = 1, the Phase Ped Clear is currently active. When a bit = 0, the Phase Ped Clear is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber * 8)
 Bit 6: Phase # = (phaseStatusGroupNumber * 8) - 1
 Bit 5: Phase # = (phaseStatusGroupNumber * 8) - 2
 Bit 4: Phase # = (phaseStatusGroupNumber * 8) - 3
 Bit 3: Phase # = (phaseStatusGroupNumber * 8) - 4
 Bit 2: Phase # = (phaseStatusGroupNumber * 8) - 5
 Bit 1: Phase # = (phaseStatusGroupNumber * 8) - 6
 Bit 0: Phase # = (phaseStatusGroupNumber * 8) - 7"

REMARKS ""

DESCRIPTIVE-NAME-CONTEXT {""}
 DATA-CONCEPT-TYPE data-element
 STANDARD "NTCIP 1202"
 DATA-TYPE "PhaseStatusGroupPedClears ::= INTEGER (0..255)"
 FORMAT "ASN.1 encoding"
 UNIT-OF-MEASURE "group"
 VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.7.14 phaseStatusGroupReds

3.6.7.14.1 ASN.1 REPRESENTATION

phaseStatusGroupReds ITS-DATA-ELEMENT ::= {
 DESCRIPTIVE-NAME "IntersectionSignal.PhaseStatusGroupReds:nbr"
 ASN-NAME "PhaseStatusGroupReds"
 ASN-OBJECT-IDENTIFIER { phaseStatusGroupEntry 2 }
 DEFINITION "Phase Red Output Status Mask, when a bit = 1, the Phase Red is currently active. When a bit = 0, the Phase Red is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber * 8)
 Bit 6: Phase # = (phaseStatusGroupNumber * 8) - 1
 Bit 5: Phase # = (phaseStatusGroupNumber * 8) - 2
 Bit 4: Phase # = (phaseStatusGroupNumber * 8) - 3
 Bit 3: Phase # = (phaseStatusGroupNumber * 8) - 4
 Bit 2: Phase # = (phaseStatusGroupNumber * 8) - 5
 Bit 1: Phase # = (phaseStatusGroupNumber * 8) - 6
 Bit 0: Phase # = (phaseStatusGroupNumber * 8) - 7"

REMARKS ""

DESCRIPTIVE-NAME-CONTEXT {""}
 DATA-CONCEPT-TYPE data-element
 STANDARD "NTCIP 1202"
 DATA-TYPE "PhaseStatusGroupReds ::= INTEGER (0..255)"
 FORMAT "ASN.1 encoding"
 UNIT-OF-MEASURE "group"
 VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.7.15 phaseStatusGroupWalks

3.6.7.15.1 ASN.1 REPRESENTATION

phaseStatusGroupWalks ITS-DATA-ELEMENT ::= {
 DESCRIPTIVE-NAME "IntersectionSignal.PhaseStatusGroupWalks:nbr"
 ASN-NAME "PhaseStatusGroupWalks"
 ASN-OBJECT-IDENTIFIER { phaseStatusGroupEntry 7 }
 DEFINITION "Phase Walk Output Status Mask, when a bit = 1, the Phase Walk is currently active. When a bit = 0, the Phase Walk is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber * 8)
 Bit 6: Phase # = (phaseStatusGroupNumber * 8) - 1
 Bit 5: Phase # = (phaseStatusGroupNumber * 8) - 2
 Bit 4: Phase # = (phaseStatusGroupNumber * 8) - 3
 Bit 3: Phase # = (phaseStatusGroupNumber * 8) - 4
 Bit 2: Phase # = (phaseStatusGroupNumber * 8) - 5
 Bit 1: Phase # = (phaseStatusGroupNumber * 8) - 6

```

Bit 0: Phase # = (phaseStatusGroupNumber * 8) - 7"
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1202"
DATA-TYPE "PhaseStatusGroupWalks ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "group"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.7.16 phaseStatusGroupYellows

3.6.7.16.1 ASN.1 REPRESENTATION

```

phaseStatusGroupYellows ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.PhaseStatusGroupYellows:nbr"
  ASN-NAME "PhaseStatusGroupYellows"
  ASN-OBJECT-IDENTIFIER { phaseStatusGroupEntry 3 }
  DEFINITION "Phase Yellow Output Status Mask, when a bit = 1, the Phase Yellow is
  currently active. When a bit = 0, the Phase Yellow is NOT currently active.
  Bit 7: Phase # = (phaseStatusGroupNumber * 8)
  Bit 6: Phase # = (phaseStatusGroupNumber * 8) - 1
  Bit 5: Phase # = (phaseStatusGroupNumber * 8) - 2
  Bit 4: Phase # = (phaseStatusGroupNumber * 8) - 3
  Bit 3: Phase # = (phaseStatusGroupNumber * 8) - 4
  Bit 2: Phase # = (phaseStatusGroupNumber * 8) - 5
  Bit 1: Phase # = (phaseStatusGroupNumber * 8) - 6
  Bit 0: Phase # = (phaseStatusGroupNumber * 8) - 7"
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1202"
  DATA-TYPE "PhaseStatusGroupYellows ::= INTEGER (0..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "group"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.7.17 phaseNumber

3.6.7.17.1 ASN.1 REPRESENTATION

```

phaseNumber ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.PhaseNumber:nbr"
  ASN-NAME "PhaseNumber"
  ASN-OBJECT-IDENTIFIER { phaseEntry 1 }
  DEFINITION "The phase number for objects in this row. This value shall not
  exceed the maxPhases object value."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1202"
  DATA-TYPE "PhaseNumber ::= INTEGER (1..255)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "phase"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.7.18 ringStatus

3.6.7.18.1 ASN.1 REPRESENTATION

```

ringStatus ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.RingStatus:cd"
  ASN-NAME "RingStatus"

```

```
ASN-OBJECT-IDENTIFIER { ringStatusEntry 1 }
DEFINITION      "The Ring Status for this ring.
Bit 7: Reserved (always zero)
Bit 6: Reserved (always zero)
Bit 5: Force Off - When bit = 1, the active
phase in the ring was terminated by Force Off
Bit 4: Max Out - When bit = 1, the active
phase in the ring was terminated by Max Out
Bit 3: Gap Out - When bit = 1, the active
phase in the ring was terminated by Gap Out
Bit 2: Coded Status Bit C
Bit 1: Coded Status Bit B
Bit 0: Coded Status Bit A
+=====+=====+=====+=====+=====+
| Code | Bit States | State |
| ## | A | B | C | Names |
+=====+=====+=====+=====+=====+
| 0 | 0 | 0 | 0 | Min Green |
| 1 | 1 | 0 | 0 | Extension |
| 2 | 0 | 1 | 0 | Maximum |
| 3 | 1 | 1 | 0 | Green Rest |
| 4 | 0 | 0 | 1 | Yellow Change |
| 5 | 1 | 0 | 1 | Red Clearance |
| 6 | 0 | 1 | 1 | Red Rest |
| 7 | 1 | 1 | 1 | Undefined |
+=====+=====+=====+=====+=====+
NEMA TS 2 Clause 3.5.4.2 provides further definition of Coded Status Bits."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1202"
DATA-TYPE "RingStatus ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.19 splitCoordPhase

3.6.7.19.1 ASN.1 REPRESENTATION

```
splitCoordPhase ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "IntersectionSignal.SplitCoordPhase:cd"
ASN-NAME "SplitCoordPhase"
ASN-OBJECT-IDENTIFIER { splitEntry 5 }
DEFINITION      "To select the associated phase as a coordinated phase this object
shall be set to TRUE (non zero)."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1202"
DATA-TYPE "SplitCoordPhase ::= INTEGER (0..1)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.20 splitTime

3.6.7.20.1 ASN.1 REPRESENTATION

```
splitTime ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "IntersectionSignal.SplitTime:qty"
ASN-NAME "SplitTime"
ASN-OBJECT-IDENTIFIER { splitEntry 3 }
```

DEFINITION "The time in seconds the splitPhase is allowed to receive (i.e. before a Force Off is applied) when constant demands exist on all phases. In floating coordForceMode, this is always the maximum time a non-coordinated phase is allowed to receive. In fixed coordForceMode, the actual allowed time may be longer if a previous phase gapped out. The splitTime includes all phase clearance times for the associated phase. The split time shall be longer than the sum of the phase minimum service requirements for the phase. When the time is NOT adequate to service the minimum service requirements of the phase, Free Mode shall be the result. The minimum requirements of a phase with a not-actuated ped include Minimum Green, Walk, Pedestrian Clear, Yellow Clearance, and Red Clearance; the minimum requirements of a phase with an actuated pedestrian include Minimum Green, Yellow Clearance, and Red Clearance.

If the cycleTime entry of the associated patternTable entry is zero (i.e. the device is inFree Mode), then the value of this object shall be applied, if non-zero, as a maximum time for the associated phase.

If the critical path through the phase diagram is less than the cycleTime entry of the associated patternTable entry, all extra time is allotted to the coordination phase in each ring. If the critical path through the phase diagram is greater than the cycleTime entry of the associated patternTable entry (and the cycleTime is not zero) the device shall operate in the Free Mode.

While the Free Mode condition exists, the LocalOverride bit of shortAlarm shall be set to one (1)."

REMARKS ""

DESCRIPTIVE-NAME-CONTEXT {""

DATA-CONCEPT-TYPE data-element

STANDARD "NTCIP 1202"

DATA-TYPE "SplitTime ::= INTEGER (0..255)"

FORMAT "ASN.1 encoding"

UNIT-OF-MEASURE "second"

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.7.21 splitMode

3.6.7.21.1 ASN.1 REPRESENTATION

```
splitMode ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "IntersectionSignal.SplitMode:cd"
  ASN-NAME "SplitMode"
  ASN-OBJECT-IDENTIFIER { splitEntry 4 }
  DEFINITION "This object defines operational characteristics of the phase. The
  following options are available:
  other: the operation is not specified in this standard
  none: no split mode control.
  minimumVehicleRecall: this phase operates with a minimum vehicle recall.
  maximumVehicleRecall: this phase operates with a maximum vehicle recall.
  pedestrianRecall: this phase operates with a pedestrian recall.
  maximumVehicleAndPedestrianRecall: this phase operates with a maximum vehicle &
  pedestrian recall.
  phaseOmitted: this phase is omitted."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1202"
  DATA-TYPE "SplitMode ::= ENUMERATED {
    other (1),
    none (2),
    minimumvehiclerecall (3),
    maximumvehiclerecall (4),
    pedestrianrecall (5),
    maximumvehicleandpedestrianrecall (6),
    phaseomitted (7),
    insert-extension-values-here (8),
    ...}"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
```

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.7.22 specialFunctionOutputNumber

3.6.7.22.1 ASN.1 REPRESENTATION

```
specialFunctionOutputNumber ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.SpecialFunctionOutputNumber:nbr"  
  ASN-NAME "SpecialFunctionOutputNumber"  
  ASN-OBJECT-IDENTIFIER { specialFunctionOutputEntry 1 }  
  DEFINITION "The special function output number associated with object in this  
  row. This value shall not exceed the maxSpecialFunctionOutputs object value."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"  
  DATA-TYPE "SpecialFunctionOutputNumber ::= INTEGER (1..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "output"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.7.23 timebaseAscPatternSync

3.6.7.23.1 ASN.1 REPRESENTATION

```
timebaseAscPatternSync ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "IntersectionSignal.TimebaseAscPatternSync:qty"  
  ASN-NAME "TimebaseAscPatternSync"  
  ASN-OBJECT-IDENTIFIER { timebaseAsc 1 }  
  DEFINITION "Pattern Sync Reference in minutes past midnight. When the value is  
  65535, the controller unit shall use the Action time as the Sync Reference for that  
  pattern. Action time is the hour and minute associated with the active  
  dayPlanEventNumber (as defined in NTCIP 1201)."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1202"  
  DATA-TYPE "TimebaseAscPatternSync ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "minute"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8 RampMeter Class Data Elements

3.6.8.1 rmcAbsoluteMinMeterRate

3.6.8.1.1 ASN.1 REPRESENTATION

```
rmcAbsoluteMinMeterRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcAbsoluteMinMeterRate:rt"  
  ASN-NAME "RmcAbsoluteMinMeterRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeterCfgEntry 10 }  
  DEFINITION "Indicates the absolute minimum metering rate. A suggested usable  
  range is 0, 120 to 1800 in 1-vph increments. A value of zero (0) indicates this  
  parameter shall not be used."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcAbsoluteMinMeterRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.2 rmcAbsoluteMaxMeterRate

3.6.8.2.1 ASN.1 REPRESENTATION

```
rmcAbsoluteMaxMeterRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcAbsoluteMaxMeterRate:rt"  
  ASN-NAME "RmcAbsoluteMaxMeterRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeterCfgEntry 11 }  
  DEFINITION "Indicates the absolute maximum metering rate. A suggested usable  
range is 0, 120 to 1800 in 1-vph increments. A value of zero (0) indicates this  
parameter shall not be used. The value, if non-zero, must be greater than or equal to  
the value of the rmcAbsoluteMinMeterRate-object."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcAbsoluteMaxMeterRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.3 rmcSystemMinMeterRate

3.6.8.3.1 ASN.1 REPRESENTATION

```
rmcSystemMinMeterRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcSystemMinMeterRate:rt"  
  ASN-NAME "RmcSystemMinMeterRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeterCfgEntry 12 }  
  DEFINITION "Indicates the system minimum metering rate. A suggested usable range  
is 0, 120 to 1800 in 1-vph increments. A value of zero (0) indicates this parameter  
shall not be used."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcSystemMinMeterRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.4 rmcSystemMaxMeterRate

3.6.8.4.1 ASN.1 REPRESENTATION

```
rmcSystemMaxMeterRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcSystemMaxMeterRate:rt"  
  ASN-NAME "RmcSystemMaxMeterRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeterCfgEntry 13 }  
  DEFINITION "Indicates the system maximum metering rate. A suggested usable range  
is 0, 120 to 1800 in 1-vph increments. A value of zero (0) indicates this parameter  
shall not be used. The value, if non-zero, must be greater than or equal to the value  
of the rmcSystemMinMeterRate object."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcSystemMaxMeterRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```


3.6.8.5 rmcManualPlan

3.6.8.5.1 ASN.1 REPRESENTATION

```
rmcManualPlan ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcManualPlan:id"  
  ASN-NAME "RmcManualPlan"  
  ASN-OBJECT-IDENTIFIER { rmcMeterCtrlEntry 3 }  
  DEFINITION "Indicates the requested metering plan number if the metered lane is  
  commanded by manual entry and the rmcRequestAction-object has a value of  
  'trafficResponsive'. This value cannot exceed the value of the rmcMaxNumMeterPlans-  
  object."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcManualPlan ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.6 rmcManualRate

3.6.8.6.1 ASN.1 REPRESENTATION

```
rmcManualRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcManualRate:rt"  
  ASN-NAME "RmcManualRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeterCtrlEntry 4 }  
  DEFINITION "Indicates the requested metering rate if the metered lane is  
  commanded by manual entry and the rmcRequestAction-object has a value of 'fixedRate'.  
  A suggested usable range is 120-1800 in 1-vph increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcManualRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.7 rmcAverageFlowRate

3.6.8.7.1 ASN.1 REPRESENTATION

```
rmcAverageFlowRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcAverageFlowRate:rt"  
  ASN-NAME "RmcAverageFlowRate"  
  ASN-OBJECT-IDENTIFIER { rmcML 5 }  
  DEFINITION "Indicates the flow rate measured over the rmcAveragingPeriods-object  
  number of preceding calculation intervals. The flow rate shall be determined by  
  calculating the average of all mainline lanes whose rmcMLStatus-object has a value of  
  either 'working' or 'partialFailure', AND who's rmcLaneUsageStatusobject has a value  
  of 'schemeF', 'schemeFO', 'schemeFS', or 'schemeFOS'. Any mainline lane whose  
  rmcMLStatus-object had a value of 'totalFailure' during the Averaging Periods shall  
  not be used for the calculation. The value shall be expressed in vph in 1-vehicle  
  increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcAverageFlowRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"
```

UNIT-OF-MEASURE "vehicles per hour"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.8.8 rmcAverageOccupancy

3.6.8.8.1 ASN.1 REPRESENTATION

```
rmcAverageOccupancy ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcAverageOccupancy:pct"  
  ASN-NAME "RmcAverageOccupancy"  
  ASN-OBJECT-IDENTIFIER { rmcML 6 }  
  DEFINITION "Indicates the occupancy measured over the rmcAveragingPeriods-object  
    number of preceding calculation intervals. The occupancy shall be determined by  
    calculating the average of all mainline lanes whose rmcMLStatus-object has a value of  
    either 'working' or 'partialFailure', AND who's rmcLaneUsageStatusobject has a value  
    of 'schemeO', 'schemeFO', 'schemeOS', or 'schemeFOS'. Any mainline lane whose  
    rmcMLStatus-object had a value of 'totalFailure' during the Averaging Periods shall  
    not be used for the calculation. The value shall be expressed in percent in 0.1-  
    percent increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcAverageOccupancy ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "tenths of a percent"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.9 rmcAverageSpeed

3.6.8.9.1 ASN.1 REPRESENTATION

```
rmcAverageSpeed ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcAverageSpeed:rt"  
  ASN-NAME "RmcAverageSpeed"  
  ASN-OBJECT-IDENTIFIER { rmcML 7 }  
  DEFINITION "Indicates the speed measured over the rmcAveragingPeriods-object  
    number of preceding calculation intervals. The speed shall be determined by  
    calculating the average of all mainline lanes whose rmcMLStatus-object has a value of  
    either 'working' or 'partialFailure', AND who's rmcLaneUsageStatus-object has a value  
    of 'schemeS', 'schemeFS', 'schemeOS', or 'schemeFOS'. Any mainline lane whose  
    rmcMLStatus-object had a value of 'totalFailure' during the Averaging Periods shall  
    not be used for the calculation. The value shall be expressed in km/h in 1-km/h  
    increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcAverageSpeed ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "kilometers per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.10 rmcDemandStatus

3.6.8.10.1 ASN.1 REPRESENTATION

```
rmcDemandStatus ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcDemandStatus:cd"  
  ASN-NAME "RmcDemandStatus"  
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 23 }  
  DEFINITION "Indicates the status of the demand detector. The values are:  
    recalled - indicates that the value of the rmcDemandMode object is 'recalled'."
```

```

working - indicates that this detector has no error.
otherError - indicates an error not defined here. See Operator's manual.
erraticCount - indicates that the vehicle count for this detector has exceeded the
value of the rmcDemandErraticCount-object.
maxPresence - indicates a continuous actuation for this detector that has exceeded the
value of the rmcDemandMaxPresence-object.
noActivity - indicates a continuous non-actuation for this detector that has exceeded
the value of the rmcDemandNoActivity-object.
errorAtSensor - indicates that the sensor for this detector has reported an error. See
Operator's manual."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcDemandStatus ::= ENUMERATED {
    recalled (1),
    working (2),
    othererror (3),
    erraticcount (4),
    maxpresence (5),
    noactivity (6),
    erroratsensor (7),
    insert-extension-values-here (8),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.8.11 rmcQueueStatus

3.6.8.11.1 ASN.1 REPRESENTATION

```

rmcQueueStatus ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "RampMeter.RmcQueueStatus:cd"
ASN-NAME "RmcQueueStatus"
ASN-OBJECT-IDENTIFIER { rmcQueueStatEntry 2 }
DEFINITION "Indicates the status of the queue detector. The values are:
disabled - indicates that this detector is not used.
working - indicates that this detector has no error.
otherError - indicates an error not defined here. See Operator's manual;
erraticCount - indicates that the vehicle count for this detector has exceeded the
value of the rmcQueueErraticCount-object;
maxPresence - indicates that a continuous actuation for this detector has exceeded the
value of the rmcQueueMaxPresence-object;
noActivity - indicates that a continuous non-actuation for this detector has exceeded
the value of the rmcQueueNoActivity-object;
errorAtSensor - indicates that the sensor for this detector has reported an error. See
Operator's manual."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcQueueStatus ::= ENUMERATED {
    disabled (1),
    working (2),
    othererror (3),
    erraticcount (4),
    maxpresence (5),
    noactivity (6),
    erroratsensor (7),
    insert-extension-values-here (8),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

```

3.6.8.12 rmcPassageStatus

3.6.8.12.1 ASN.1 REPRESENTATION

```
rmcPassageStatus ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcPassageStatus:cd"  
  ASN-NAME "RmcPassageStatus"  
  ASN-OBJECT-IDENTIFIER { rmcPassageStatEntry 1 }  
  DEFINITION      "Indicates the status of the passage detector. The values are:  
  recalled - indicates that the value of the rmcPassageMode object is 'recalled'.  
  working - that this detector has no error.  
  otherError - indicates an error not defined here. See Operator's manual.  
  erraticCount - indicates that the vehicle count for this detector has exceeded the  
  value of the rmcPassageErraticCount-object.  
  maxPresence - indicates a continuous actuation for this detector that has exceeded the  
  value of the rmcPassageMaxPresence-object.  
  noActivity - indicates a continuous non-actuation for this detector that has exceeded  
  the value of the rmcPassageNoActivity-object.  
  errorAtSensor - indicates that the sensor for this detector has reported an error. See  
  Operator's manual."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcPassageStatus ::= ENUMERATED {  
    recalled (1),  
    working (2),  
    othererror (3),  
    erraticcount (4),  
    maxpresence (5),  
    noactivity (6),  
    erroratsensor (7),  
    insert-extension-values-here (8),  
    ...}"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.13 rmcOperMaxMeterRateStatus

3.6.8.13.1 ASN.1 REPRESENTATION

```
rmcOperMaxMeterRateStatus ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcOperMaxMeterRateStatus:rt"  
  ASN-NAME "RmcOperMaxMeterRateStatus"  
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 22 }  
  DEFINITION      "Indicates the operational maximum metering rate, in vph. This object  
  indicates the maximum of the minimum metering rate objects (rmcAbsoluteMinMeterRate,  
  rmcSystemMinMeterRate, rmcTBCMinMeterRateStatus) that is currently active of this  
  metered lane."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcOperMaxMeterRateStatus ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.14 rmcOperMinMeterRateStatus

3.6.8.14.1 ASN.1 REPRESENTATION

```
rmcOperMinMeterRateStatus ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RampMeter.RmcOperMinMeterRateStatus:rt"
  ASN-NAME "RmcOperMinMeterRateStatus"
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 21 }
  DEFINITION      "Indicates the operational minimum metering rate, in vph. This object
  indicates the minimum of the maximum metering rate objects (rmcAbsoluteMaxMeterRate,
  rmcSystemMaxMeterRate, rmcTBCMaxMeterRateStatus) that is currently active of this
  metered lane."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1206"
  DATA-TYPE "RmcOperMinMeterRateStatus ::= INTEGER (0..65535)"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE "vehicles per hour"
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.15 rmcRequestCommandSource

3.6.8.15.1 ASN.1 REPRESENTATION

```
rmcRequestCommandSource ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RampMeter.RmcRequestCommandSource:cd"
  ASN-NAME "RmcRequestCommandSource"
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 1 }
  DEFINITION      "Indicates the command source that requests control of this metered
  lane. The values are:
  manual - the metered lane is requested to be controlled locally at the site.
  communications - the metered lane is requested to be controlled by the central system.
  This usually means that the entire RMC is controlled centrally.
  interconnect - the metered lane is requested to be controlled by an on-street master
  controller.
  timebaseControl - the metered lane is requested to be controlled using values as
  selected via the Timebase Control Action table.
  default - indicates that the metered lane is requested to be controlled using default
  settings."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1206"
  DATA-TYPE "RmcRequestCommandSource ::= ENUMERATED {
    manual (1),
    communications (2),
    interconnect (3),
    timebasecontrol (4),
    default (5),
    insert-extension-values-here (6),
    ...}"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.16 rmcImplementCommandSource

3.6.8.16.1 ASN.1 REPRESENTATION

```
rmcImplementCommandSource ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RampMeter.RmcImplementCommandSource:cd"
  ASN-NAME "RmcImplementCommandSource"
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 2 }
  DEFINITION      "Indicates the command source that currently controls this metered
  lane. The values are:
  manual - the metered lane is currently controlled locally at the site.
```

communications - the metered lane is currently controlled by the central system. This usually means that the entire RMC is controlled centrally.
interconnect - the metered lane is currently controlled by an on-street master controller.
timebaseControl - the metered lane is currently controlled using values as selected via the Timebase Control Action table.
default - indicates that the metered lane is currently controlled using default settings."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcImplementCommandSource ::= ENUMERATED {
 manual (1),
 communications (2),
 interconnect (3),
 timebasecontrol (4),
 default (5),
 insert-extension-values-here (6),
 ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.8.17 rmcRequestAction

3.6.8.17.1 ASN.1 REPRESENTATION

rmcRequestAction ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "RampMeter.RmcRequestAction:cd"
ASN-NAME "RmcRequestAction"
ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 7 }
DEFINITION "Indicates the action that is requested for this metered lane. The values are:
dark - indicates that the metered lane is requested to advance to the Pre-Metering Non-Green interval.
restInGreen - indicates that the metered lane is requested to advance to the Pre-Metering Green interval.
fixedRate - indicates that the metered lane is requested to operate using the value of the rmcRequestRate-object.
trafficResponsive - indicates that the metered lane is requested to operate using mainline station traffic conditions and the value of the rmcRequestPlan-object.
emergencyGreen - indicates that the metered lane is requested to advance to the Shutdown Warning interval without entering the Shutdown Green, Shutdown Yellow or Shutdown Red intervals when the metered lane is NOT in the Non-metering state. The metered lane will advance to the Pre-Metering Green interval when the metered lane is in the Non-metering state."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcRequestAction ::= ENUMERATED {
 dark (1),
 restinggreen (2),
 fixedrate (3),
 trafficresponsive (4),
 emergencygreen (5),
 insert-extension-values-here (6),
 ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.8.18 rmcRequestPlan

3.6.8.18.1 *ASN.1 REPRESENTATION*

```
rmcRequestPlan ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcRequestPlan:id"  
  ASN-NAME "RmcRequestPlan"  
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 8 }  
  DEFINITION      ""Indicates the metering plan number that is requested if the  
rmcRequestAction-object has a value of 'trafficResponsive'. This value cannot exceed  
the value of the rmcMaxNumMeterPlans-object."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcRequestPlan ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.19 *rmcRequestRate*

3.6.8.19.1 *ASN.1 REPRESENTATION*

```
rmcRequestRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcRequestRate:rt"  
  ASN-NAME "RmcRequestRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 9 }  
  DEFINITION      ""Indicates the metering rate that is requested if the  
rmcRequestAction-object has a value of 'fixedRate', in 1-vph increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcRequestRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.20 *rmcRequestVehiclesPerGrn*

3.6.8.20.1 *ASN.1 REPRESENTATION*

```
rmcRequestVehiclesPerGrn ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcRequestVehiclesPerGrn:rt"  
  ASN-NAME "RmcRequestVehiclesPerGrn"  
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 10 }  
  DEFINITION      ""Indicates the number of vehicles that has been requested to pass  
during the green and yellow intervals of one cycle, in 1-vehicle-per-green  
increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcRequestVehiclesPerGrn ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per green"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.21 *rmcImplementAction*

3.6.8.21.1 *ASN.1 REPRESENTATION*

```
rmcImplementAction ITS-DATA-ELEMENT ::= {
```

```
DESCRIPTIVE-NAME "RampMeter.RmcImplementAction:cd"
ASN-NAME "RmcImplementAction"
ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 3 }
DEFINITION "Indicates the action that is active for the metered lane. The values
are:
dark - indicates that the metered lane will advance to the Pre-Metering Non-Green
interval.
restInGreen - indicates that the metered lane will advance to the Pre-Metering Green
interval.
fixedRate - indicates that the metered lane will operate using the value of the
rmcImplementRate-object.
trafficResponsive - indicates that the metered lane will operate using mainline station
traffic conditions and the value of the rmcImplementPlan-object.
emergencyGreen - indicates that the metered lane will advance to the Shutdown Warning
interval without entering the Shutdown Green, Shutdown Yellow or Shutdown Red
intervals when the metered lane is NOT in the Non-metering state. The metered lane
will advance to the Pre-Metering Green interval when the metered lane is in the Non-
metering state.
holdMeter - indicates that the metered lane will remain in the metering state
restrictions such as minimum metering times.
holdNonMeter - indicates that the metered lane will remain in the non-metering state
regardless of the requested action (rmcRequestedAction-object) due to restrictions
such as minimum non-metering times.
holdRestInGreen - indicates that the metered lane was forced into the Pre-Metering
Green interval because another lane within this Dependency Group is NOT in the non-
metering state."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcImplementAction ::= ENUMERATED {
    dark (1),
    restinggreen (2),
    fixedrate (3),
    trafficresponsive (4),
    emergencygreen (5),
    holdmeter (6),
    holdnonmeter (7),
    holdrestinggreen (8),
    insert-extension-values-here (9),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.22 rmcImplementPlan

3.6.8.22.1 ASN.1 REPRESENTATION

```
rmcImplementPlan ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "RampMeter.RmcImplementPlan:id"
ASN-NAME "RmcImplementPlan"
ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 4 }
DEFINITION "Indicates the metering plan number that is implemented if the
rmcImplementAction-object has a value of 'trafficResponsive'. This value cannot exceed
the value of the rmcMaxNumMeteringPlans-object."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcImplementPlan ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```


3.6.8.23 rmcImplementRate

3.6.8.23.1 ASN.1 REPRESENTATION

```
rmcImplementRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcImplementRate:rt"  
  ASN-NAME "RmcImplementRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 5 }  
  DEFINITION        "Indicates the base metering rate if the rmcImplementAction-object  
has a value of 'fixedRate', in 1-vph increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcImplementRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.24 rmcImplementVehiclesPerGrn

3.6.8.24.1 ASN.1 REPRESENTATION

```
rmcImplementVehiclesPerGrn ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcImplementVehiclesPerGrn:rt"  
  ASN-NAME "RmcImplementVehiclesPerGrn"  
  ASN-OBJECT-IDENTIFIER { rmcMeterStatEntry 6 }  
  DEFINITION        "Indicates the number of vehicles that are currently allowed to pass  
during the green and yellow intervals of one cycle, in 1-vehicle-per-green  
increments."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcImplementVehiclesPerGrn ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per green"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.25 rmcTBActionCtrl

3.6.8.25.1 ASN.1 REPRESENTATION

```
rmcTBActionCtrl ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcTBActionCtrl:cd"  
  ASN-NAME "RmcTBActionCtrl"  
  ASN-OBJECT-IDENTIFIER { rmcMeterActionEntry 3 }  
  DEFINITION        "Indicates the action that may be active if the metered lane is  
controlled by timebase control. This object is used to control the entry, while the  
rmcTBActionStatus-object indicates the status. The values are:  
dark - indicates that the metered lane will advance to the Pre-Metering Non-Green  
interval.  
restInGreen - indicates that the metered lane will advance to the Pre-Metering Green  
interval.  
fixedRate - indicates that the metered lane will operate using the value of the  
rmcTBRateCtrl-object.  
trafficResponsive -indicates that the metered lane will operate using mainline station  
traffic conditions and the value of the rmcTBPlanCtrl-object.  
emergencyGreen - indicates that the metered lane will advance to the Shutdown Warning  
interval without entering the Shutdown Green, Shutdown Yellow or Shutdown Red  
intervals when the metered lane is NOT in the Non-metering state. The metered lane  
will advance to the Pre-Metering Green interval when the metered lane is in the Non-  
metering state."
```

skip - indicates that the next-lower level command source shall be considered as specified by the rmcCmdSourcePriorityOrder-object."

```
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcTBActionCtrl ::= ENUMERATED {
    dark (1),
    restinggreen (2),
    fixedrate (3),
    trafficresponsive (4),
    emergencygreen (5),
    skip (6),
    insert-extension-values-here (7),
    ...}"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.26 rmcTBPlanCtrl

3.6.8.26.1 ASN.1 REPRESENTATION

```
rmcTBPlanCtrl ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "RampMeter.RmcTBPlanCtrl:cd"
ASN-NAME "RmcTBPlanCtrl"
ASN-OBJECT-IDENTIFIER { rmcMeterActionEntry 4 }
DEFINITION "Indicates the metering plan number that to be used if the metered
lane is commanded by timebase control and the rmcImplementAction-object has a value of
'trafficResponsive'. This value cannot exceed the value of the rmcMaxNumMeterPlans-
object. This object is used to control the entry, while the rmcTBPlanStatus-object
indicates the status."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcTBPlanCtrl ::= INTEGER (0..255)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.27 rmcTBRateCtrl

3.6.8.27.1 ASN.1 REPRESENTATION

```
rmcTBRateCtrl ITS-DATA-ELEMENT ::= {
DESCRIPTIVE-NAME "RampMeter.RmcTBRateCtrl:rt"
ASN-NAME "RmcTBRateCtrl"
ASN-OBJECT-IDENTIFIER { rmcMeterActionEntry 5 }
DEFINITION "Indicates the metering rate that to be used if the metered lane is
commanded by timebase control and the rmcImplementAction-object has a value of
'fixedRate'. This object is used to control the entry, while the rmcTBRateStatus-
object indicates the status. A suggested usable range is 120 to 1800 in 1-vph
increments."
REMARKS ""
DESCRIPTIVE-NAME-CONTEXT {""}
DATA-CONCEPT-TYPE data-element
STANDARD "NTCIP 1206"
DATA-TYPE "RmcTBRateCtrl ::= INTEGER (0..65535)"
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE "vehicles per hour"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.28 rmcTBVehiclesPerGrnCtrl

3.6.8.28.1 ASN.1 REPRESENTATION

```
rmcTBVehiclesPerGrnCtrl ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcTBVehiclesPerGrnCtrl:qty"  
  ASN-NAME "RmcTBVehiclesPerGrnCtrl"  
  ASN-OBJECT-IDENTIFIER { rmcMeterActionEntry 6 }  
  DEFINITION      "Indicates the number of vehicles that are allowed to pass during the  
green and yellow intervals of one cycle while the metered lane is commanded by  
timebase control. This object is used to control the entry, while the  
rmcTBVehiclesPerGrnStatus-object indicates the status. A suggested usable range is 1  
to 5 in 1-vehicle increments."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcTBVehiclesPerGrnCtrl ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.29 rmcTBCMinMeterRateCtrl

3.6.8.29.1 ASN.1 REPRESENTATION

```
rmcTBCMinMeterRateCtrl ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcTBCMinMeterRateCtrl:rt"  
  ASN-NAME "RmcTBCMinMeterRateCtrl"  
  ASN-OBJECT-IDENTIFIER { rmcMeterActionEntry 7 }  
  DEFINITION      "Indicates the operational minimum metering rate. This object is used  
to control the entry, while the rmcTBCMinMeterRateStatus-object indicates the status.  
A suggested usable range is 0, 120 to 1800 in 1-vph increments. A value of zero (0)  
indicates this parameter shall not be used."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcTBCMinMeterRateCtrl ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.30 rmcTBCMaxMeterRateCtrl

3.6.8.30.1 ASN.1 REPRESENTATION

```
rmcTBCMaxMeterRateCtrl ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcTBCMaxMeterRateCtrl:rt"  
  ASN-NAME "RmcTBCMaxMeterRateCtrl"  
  ASN-OBJECT-IDENTIFIER { rmcMeterActionEntry 8 }  
  DEFINITION      "Indicates the operational maximum metering rate. This object is used  
to control the entry, while the rmcTBCMaxMeterRateStatus-object indicates the status.  
A suggested usable range is 0, 120 to 1800 in 1-vph increments. A value of zero (0)  
indicates this parameter shall not be used. The value, if non-zero, must be greater  
than or equal to the value of the rmcTBCMinMeterRateCtrl-object."  
  REMARKS      ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcTBCMaxMeterRateCtrl ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"
```

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.8.31 rmcTBMLUsageMode

3.6.8.31.1 ASN.1 REPRESENTATION

```
rmcTBMLUsageMode ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RampMeter.RmcTBMLUsageMode:cd"
  ASN-NAME "RmcTBMLUsageMode"
  ASN-OBJECT-IDENTIFIER { rmcMLActionEntry 3 }
  DEFINITION      "Indicates which mainline station traffic parameters will use the
data from this lane based on time of day. This object shall take precedence over the
value entered in the rmcMLUsageMode object (defined in the rmcMLCtrlTable). This
precedence shall be reflected in the rmcMLUsageStatus object (defined in the
rmcMLStatTable). The values are
notUsed - the lane data will not be used to calculate any mainline station parameter.
schemeF - the lane data will be used to calculate the mainline station flow rate
schemeO - the lane data will be used to calculate the mainline station average
occupancy
schemeFO - the lane data will be used to calculate the mainline station flow rate and
average occupancy
schemeS - the lane data will be used to calculate the mainline station average speed
schemeFS - the lane data will be used to calculate the mainline station flow rate and
average speed
schemeOS - the lane data will be used to calculate the mainline station average
occupancy and occupancy speed
schemeFOS - the lane data will be used to calculate the mainline station flow rate,
average occupancy and average speed."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1206"
  DATA-TYPE "RmcTBMLUsageMode ::= ENUMERATED {
    notused (1),
    schemef (2),
    schemeo (3),
    schemefo (4),
    schemes (5),
    schemefs (6),
    schemeos (7),
    schemefos (8),
    insert-extension-values-here (9),
    ...}"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.32 rmcActionNum

3.6.8.32.1 ASN.1 REPRESENTATION

```
rmcActionNum ITS-DATA-ELEMENT ::= {
  DESCRIPTIVE-NAME "RampMeter.RmcActionNum:id"
  ASN-NAME "RmcActionNum"
  ASN-OBJECT-IDENTIFIER { rmcActionEntry 1 }
  DEFINITION      "Enumerated listing of row entries. The value of this object cannot
exceed the value of the rmcNumTBCActions - object. This is the object to which the
dayPlanAction object within the Global Object Definitions (TS3.4-1996) points."
  REMARKS ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-element
  STANDARD "NTCIP 1206"
  DATA-TYPE "RmcActionNum ::= INTEGER (1..255)"
  FORMAT "ASN.1 encoding"
```

UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.8.33 rmcMeteringLevel

3.6.8.33.1 ASN.1 REPRESENTATION

```
rmcMeteringLevel ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcMeteringLevel:id"  
  ASN-NAME "RmcMeteringLevel"  
  ASN-OBJECT-IDENTIFIER { rmcMeteringPlanEntry 2 }  
  DEFINITION          "Secondary key into this table defining an enumerated listing of row  
entries that indicate the number of metering levels stored for this RMC unit and the  
associated metering plan. This value cannot exceed the value of the  
rmcMaxNumLevelsPerPlan - object."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcMeteringLevel ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE ""  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.34 rmcMeteringRate

3.6.8.34.1 ASN.1 REPRESENTATION

```
rmcMeteringRate ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcMeteringRate:rt"  
  ASN-NAME "RmcMeteringRate"  
  ASN-OBJECT-IDENTIFIER { rmcMeteringPlanEntry 3 }  
  DEFINITION          "Indicates the metering rate which corresponds to this metering  
level. A suggested usable range is 0, 120 to 1800 in 1-vph increments. A value of zero  
(0) indicates that the ENTIRE level shall not be used during traffic responsive  
metering, including queue override adjustment."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcMeteringRate ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "vehicles per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.35 rmcFlowRateThreshold

3.6.8.35.1 ASN.1 REPRESENTATION

```
rmcFlowRateThreshold ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcFlowRateThreshold:rt"  
  ASN-NAME "RmcFlowRateThreshold"  
  ASN-OBJECT-IDENTIFIER { rmcMeteringPlanEntry 4 }  
  DEFINITION          "Indicates the average flow rate threshold, which corresponds to this  
metering plan and level. A suggested usable range is 0, 1000 to 3600 in 1-vph  
increments. A value of zero (0) indicates that this threshold shall NOT be used with  
flow rate during traffic responsive metering."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcFlowRateThreshold ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"
```

UNIT-OF-MEASURE "vehicles per hour"
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.8.36 rmcOccupancyThreshold

3.6.8.36.1 ASN.1 REPRESENTATION

```
rmcOccupancyThreshold ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcOccupancyThreshold:pct"  
  ASN-NAME "RmcOccupancyThreshold"  
  ASN-OBJECT-IDENTIFIER { rmcMeteringPlanEntry 5 }  
  DEFINITION "Indicates the average occupancy threshold, which corresponds to this  
metering plan and level. A suggested usable range is 0, 5.0 to 30.0 in 0.1-percent  
increments. A value of zero (0) indicates that this threshold shall NOT be used with  
occupancy during traffic responsive metering."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcOccupancyThreshold ::= INTEGER (0..65535)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "tenth of a percent"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.8.37 rmcSpeedThreshold

3.6.8.37.1 ASN.1 REPRESENTATION

```
rmcSpeedThreshold ITS-DATA-ELEMENT ::= {  
  DESCRIPTIVE-NAME "RampMeter.RmcSpeedThreshold:rt"  
  ASN-NAME "RmcSpeedThreshold"  
  ASN-OBJECT-IDENTIFIER { rmcMeteringPlanEntry 6 }  
  DEFINITION "Indicates the average speed threshold, which corresponds to this  
metering plan and level. A suggested usable range is 0, 15 to 100 in 1-km/h  
increments. A value of zero (0) indicates that this threshold shall NOT be used with  
speed during traffic responsive metering."  
  REMARKS ""  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-element  
  STANDARD "NTCIP 1206"  
  DATA-TYPE "RmcSpeedThreshold ::= INTEGER (0..255)"  
  FORMAT "ASN.1 encoding"  
  UNIT-OF-MEASURE "kilometers per hour"  
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.9 Global Class Data Frames

3.6.9.1 broadcastAlerts

3.6.9.1.1 ASN.1 REPRESENTATION

```
broadcastAlerts ITS-DATA-FRAME ::= {  
  DESCRIPTIVE-NAME "BroadcastAlerts:frame"  
  ASN-NAME "BroadcastAlerts"  
  ASN-OBJECT-IDENTIFIER { c2cDataFrame broadcastAlerts(1) }  
  DEFINITION ""  
  REMARKS "See NTCIP 2306:7.2.1.3:broadcastAlerts"  
  DESCRIPTIVE-NAME-CONTEXT {""}  
  DATA-CONCEPT-TYPE data-frame  
  STANDARD "NTCIP 2306"  
  REFERENCED-DATA-ELEMENTS {  
    { c2cDataElements broadcastAlertsItem(1) } }  
  DATA-TYPE "BroadcastAlerts ::= SEQUENCE {  
    broadcastAlert SEQUENCE (SIZE(1..2)) OF BroadcastAlertsItem }"
```

```
FORMAT "ASN.1 encoding"
UNIT-OF-MEASURE ""
VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.9.2 dateTimePair

3.6.9.2.1 ASN.1 REPRESENTATION

```
dateTimePair ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "DateTimePair:frame"
  ASN-NAME "DateTimePair"
  ASN-OBJECT-IDENTIFIER { atisDataFrame dateTimePair(1) }
  DEFINITION "A data and time value. In addition, the timeoffset element can be
  used to convey the local time zone. This is required when merging data sources over
  multiple time zones."
  REMARKS "This structure has been changed to add an optional time zone (offset from
  GMT) as well."
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "SAE J2354"
  REFERENCED-DATA-ELEMENTS {
    { atisDataElements date(1) },
    { atisDataElements time(1) },
    { atisDataElements timeOffset(1) }, }
  DATA-TYPE "DateTimePair ::= SEQUENCE {
    date ATIS.Date,
    time ATIS.Time,
    offset ATIS.TimeOffset OPTIONAL }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.9.3 distance

3.6.9.3.1 ASN.1 REPRESENTATION

```
distance ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "Distance:frame"
  ASN-NAME "Distance"
  ASN-OBJECT-IDENTIFIER { lrmsDataFrames distance(1) }
  DEFINITION "A choice of distance values, in integer or REAL expressions. Note
  that the data elements for REAL representations are suffixed with Dec. Distance
  choices are, in most cases, standard English and Metric units. The exception is
  'block' and 'blkdec', which are common expressions for distance in urban areas."
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "SAE J2266"
  DATA-TYPE "Distance ::= CHOICE {
    m      INTEGER (-10000000..+10000000),
    mDec   REAL (-10000000..+10000000),
    mm     INTEGER (-10000000..+10000000),
    mmDec  REAL (-10000000..+10000000),
    dm     INTEGER (-10000000..+10000000),
    dmDec  REAL (-10000000..+10000000),
    yd     INTEGER (-17600000..+17600000),
    ydDec  REAL (-17600000..+17600000),
    ft     INTEGER (-52800000..+52800000),
    ftDec  REAL (-52800000..+52800000),
    in     INTEGER (-1000000..+1000000),
    inDec  REAL (-1000000..+1000000),
    mi     INTEGER (-10000..+10000),
    miDec  REAL (-10000..+10000),
    km     INTEGER (-10000..+10000),
    kmDec  REAL (-10000..+10000),
```

```
block INTEGER (-1000..+1000),  
blkDec REAL (-1000..+1000) }" }
```

3.6.9.4 geoLocation

3.6.9.4.1 ASN.1 REPRESENTATION

```
geoLocation ITS-DATA-FRAME ::= {  
  DESCRIPTIVE-NAME "GeoLocation:frame"  
  ASN-NAME "GeoLocation"  
  ASN-OBJECT-IDENTIFIER { lrmsDataFrames geoLocation(1) }  
  DEFINITION "The GeoLocation data frame conveys a two- or three-dimensional  
  geographic location based on coordinates. The standard horizontal datum for a spot  
  location is WGS-84; other horizontal datums can be specified by HorizontalDatum.  
  Vertical Datum is an option within height."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-frame  
  STANDARD "SAE J2266"  
  REFERENCED-DATA-FRAMES {  
    { lrmsDataFrames height(1) } }  
  REFERENCED-DATA-ELEMENTS {  
    { lrmsDataElements latitude(1) }  
    { lrmsDataElements longitude(1) }  
    { lrmsDataElements horizontalDatum(1) } }  
  DATA-TYPE "GeoLocation ::= SEQUENCE {  
    latitude LRMS.Latitude,  
    longitude LRMS.Longitude,  
    horizontal-datum LRMS.HorizontalDatum OPTIONAL,  
    height LRMS.Height OPTIONAL,  
    ...}" }
```

3.6.9.5 height

3.6.9.5.1 ASN.1 REPRESENTATION

```
height ITS-DATA-FRAME ::= {  
  DESCRIPTIVE-NAME "Height:frame"  
  ASN-NAME "Height"  
  ASN-OBJECT-IDENTIFIER { lrmsDataFrames height(1) }  
  DEFINITION "A vertical height expressed as either an altitude with respect to a  
  vertical datum, or a vertical level from -128 to +127, where level 0 is the ground  
  surface, or ground level of a structure. For highway intersections of other  
  transportation features, the zero level is the ground surface level, whether or not  
  traffic occurs on the ground surface through the intersection or tunnel. For example,  
  for bridges, the lowest level of the bridge would be level +1 and, for tunnels, the  
  highest level would be -1. For parking structures or buildings, the zero level is  
  that level called "ground" or "main" or "lobby" or "first" floor, or otherwise most  
  closely associated with the surrounding ground surface. Note that for a building, the  
  VerticalLevel may not correspond to the official number of or label on a floor, but  
  refers to the relative level with respect to the zero level. This concept is useable  
  in countries with differing numbering conventions for building floors."  
  DESCRIPTIVE-NAME-CONTEXT {"Manage Traffic"}  
  DATA-CONCEPT-TYPE data-frame  
  STANDARD "SAE J2266"  
  REFERENCED-DATA-FRAMES {  
    { lrmsDataFrames distance(1) } }  
  REFERENCED-DATA-ELEMENTS {  
    { lrmsDataElements verticalDatum(1) },  
    { lrmsDataElements verticalLevel(1) } }  
  DATA-TYPE "Height ::= CHOICE {  
    altitude LRMS.Distance,  
    verticalDatum LRMS.VerticalDatum,  
    verticalLevel LRMS.VerticalLevel }" }
```


3.6.9.6 subscriptionAction

3.6.9.6.1 ASN.1 REPRESENTATION

```
subscriptionAction ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SubscriptionAction:frame"
  ASN-NAME "SubscriptionAction"
  ASN-OBJECT-IDENTIFIER { c2cDataFrame subscriptionAction(1) }
  DEFINITION      ""
  REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionAction"
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "NTCIP 2306"
  REFERENCED-DATA-ELEMENTS {
    { c2cDataElements subscriptionActionItem(1) } }
  DATA-TYPE "SubscriptionAction ::= SEQUENCE {
    subscriptionAction-item SEQUENCE (SIZE(1..10)) OF SubscriptionActionItem }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.9.7 subscriptionTimeFrame

3.6.9.7.1 ASN.1 REPRESENTATION

```
subscriptionTimeFrame ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SubscriptionTimeFrame:frame"
  ASN-NAME "SubscriptionTimeFrame"
  ASN-OBJECT-IDENTIFIER { c2cDataFrames subscriptionTimeFrame(1) }
  DEFINITION      "Time frame during which subscriber requests that publication be
  active."
  REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionTimeFrame"
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "NTCIP 2306"
  REFERENCED-DATA-ELEMENTS {
    { atisDataElements dateTimePair(1) } }
  DATA-TYPE "SubscriptionTimeFrame ::= SEQUENCE {
    start ATIS.DateTimePair OPTIONAL,
    end ATIS.DateTimePair OPTIONAL }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
  VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }
```

3.6.9.8 subscriptionType

3.6.9.8.1 ASN.1 REPRESENTATION

```
subscriptionType ITS-DATA-FRAME ::= {
  DESCRIPTIVE-NAME "SubscriptionType:frame"
  ASN-NAME "SubscriptionType"
  ASN-OBJECT-IDENTIFIER { c2cDataFrame subscriptionType(1) }
  DEFINITION      ""
  REMARKS "See NTCIP 2306:7.2.1.3:SubscriptionType"
  DESCRIPTIVE-NAME-CONTEXT {""}
  DATA-CONCEPT-TYPE data-frame
  STANDARD "NTCIP 2306"
  REFERENCED-DATA-ELEMENTS {
    { c2cDataElements subscriptionTypeItem(1) } }
  DATA-TYPE "SubscriptionType ::= SEQUENCE {
    subscriptionType-item SubscriptionTypeItem }"
  FORMAT "ASN.1 encoding"
  UNIT-OF-MEASURE ""
```

VALID-VALUE-RULE "see the ASN.1 DATA-TYPE" }

3.6.10 Global Class Messages

3.6.10.1 c2cMessagePublication

3.6.10.1.1 ASN.1 REPRESENTATION

```
c2cMessagePublication ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "c2cMessagePublication:message"
  ASN-NAME "c2cMessagePublication"
  ASN-OBJECT-IDENTIFIER { c2cMessages c2cMessagePublication(1) }
  DEFINITION
    ""
  DESCRIPTIVE-NAME-CONTEXT {""}
  ARCHITECTURE-REFERENCE {""}
  ARCHITECTURE-NAME
    {"U.S. National ITS Architecture"}
  ARCHITECTURE-VERSION {"7.0"}
  DATA-CONCEPT-TYPE message
  STANDARD "NTCIP 2306"
  META-DATA-SOURCE direct
  PRIORITY "routine"
  FREQUENCY-OR-MESSAGE-MODE "on demand"
  REFERENCED-DATA-ELEMENTS {
    { c2cDataElements informationalText(1) },
    { c2cDataElements subscriptionID(1) },
    { c2cDataElements subscriptionName(1) },
    { c2cDataElements subscriptionFrequency(1) } }
  DATA-TYPE " c2cMessagePublication ::= SEQUENCE {
    informationalText C2C.InformationalText OPTIONAL,
    subscriptionID C2C.SubscriptionID,
    subscriptionName C2C.SubscriptionName OPTIONAL,
    subscriptionCount C2C.SubscriptionFrequency OPTIONAL }" }
```

3.6.10.1.2 XML REPRESENTATION

```
<xs:element name="c2cMessagePublication" type="C2cMessagePublication"/>
  <xs:complexType name="C2cMessagePublication">
    <xs:sequence>
      <xs:element name="informationalText" type="InformationalText"
minOccurs="0"/>
      <xs:element name="subscriptionID" type="SubscriptionID"/>
      <xs:element name="subscriptionName" type="SubscriptionName"
minOccurs="0"/>
      <xs:element name="subscriptionFrequency"
type="SubscriptionFrequency" minOccurs="0"/>
      <xs:element name="subscriptionCount"
type="SubscriptionCount"/>
    </xs:sequence>
  </xs:complexType>
```

3.6.10.2 c2cMessageReceipt

3.6.10.2.1 ASN.1 REPRESENTATION

```
c2cMessageReceipt ITS-MESSAGE ::= {
  DESCRIPTIVE-NAME "c2cMessageReceipt:message"
  ASN-NAME "c2cMessageReceipt"
  ASN-OBJECT-IDENTIFIER { c2cMessages c2cMessageReceipt(1) }
  DEFINITION
    "A message transmitted by the receiving center to acknowledge receipt
of a message from the sending center."
  DESCRIPTIVE-NAME-CONTEXT {""}
  ARCHITECTURE-REFERENCE {""}
  ARCHITECTURE-NAME
    {"U.S. National ITS Architecture"}
```

```

ARCHITECTURE-VERSION {"7.0"}
DATA-CONCEPT-TYPE message
STANDARD "NTCIP 2306"
META-DATA-SOURCE direct
PRIORITY "routine"
FREQUENCY-OR-MESSAGE-MODE "on demand"
REFERENCED-DATA-ELEMENTS {
    { c2cDataElements informationalText(1) } }
DATA-TYPE "    c2cMessageReceipt ::= SEQUENCE {
    informationalText C2C.InformationalText
}" }

```

3.6.10.2.2 XML REPRESENTATION

```

<xs:element name="c2cMessageReceipt" type="C2cMessageReceipt"/>
    <xs:complexType name="C2cMessageReceipt">
        <xs:sequence>
            <xs:element name="informationalText"
type="InformationalText"/>
        </xs:sequence>
    </xs:complexType>

```

3.6.10.3 c2cMessageSubscription

3.6.10.3.1 ASN.1 REPRESENTATION

```

c2cMessageSubscription ITS-MESSAGE ::= {
    DESCRIPTIVE-NAME "c2cMessageSubscription:message"
    ASN-NAME "c2cMessageSubscription"
    ASN-OBJECT-IDENTIFIER { c2cMessages c2cMessageSubscription(1) }
    DEFINITION ""
    DESCRIPTIVE-NAME-CONTEXT {""}
    ARCHITECTURE-REFERENCE {""}
    ARCHITECTURE-NAME {"U.S. National ITS Architecture"}
    ARCHITECTURE-VERSION {"7.0"}
    DATA-CONCEPT-TYPE message
    STANDARD "NTCIP 2306"
    META-DATA-SOURCE direct
    PRIORITY "routine"
    FREQUENCY-OR-MESSAGE-MODE "on demand"
    REFERENCED-DATA-FRAMES {
        { c2cDataFrames subscriptionAction(1) },
        { c2cDataFrames subscriptionType(1) },
        { c2cDataFrames subscriptionTimeFrame(1) },
        { c2cDataFrames broadcastAlerts(1) } }
    REFERENCED-DATA-ELEMENTS {
        { c2cDataElements informationalText(1) },
        { c2cDataElements returnAddress(1) },
        { c2cDataElements subscriptionID(1) },
        { c2cDataElements subscriptionName(1) },
        { c2cDataElements subscriptionFrequency(1) } }
    DATA-TYPE "    c2cMessageSubscription ::= SEQUENCE {
        informationalText C2C.InformationalText OPTIONAL,
        returnAddress C2C.ReturnAddress
        subscriptionAction C2C.SubscriptionAction,
        subscriptionType C2C.SubscriptionType,
        subscriptionID C2C.SubscriptionID,
        subscriptionName C2C.SubscriptionName OPTIONAL,
        subscriptionTimeFrame C2C.SubscriptionTimeFrame OPTIONAL,
        subscriptionCount C2C.SubscriptionFrequency,
        broadcastAlerts C2C.BroadcastAlerts OPTIONAL }" }

```

3.6.10.3.2 XML REPRESENTATION

```
<xs:element name="c2cMessageSubscription" type="C2cMessageSubscription"/>
  <xs:complexType name="C2cMessageSubscription">
    <xs:sequence>
      <xs:element name="informationalText" type="InformationalText"
minOccurs="0"/>
      <xs:element name="returnAddress" type="ReturnAddress"/>
      <xs:element name="subscriptionAction"
type="SubscriptionAction"/>
      <xs:element name="subscriptionType" type="SubscriptionType"/>
      <xs:element name="subscriptionID" type="SubscriptionID"/>
      <xs:element name="subscriptionName" type="SubscriptionName"
minOccurs="0"/>
      <xs:element name="subscriptionTimeFrame"
type="SubscriptionTimeFrame" minOccurs="0"/>
      <xs:element name="subscriptionFrequency"
type="SubscriptionFrequency"/>
      <xs:element name="broadcastAlerts" type="BroadcastAlerts"
minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
```

4 Requirements Traceability Matrix

The Requirements Traceability Matrix (RTM), presented in Table 1, maps the requirements in *Volume I: Concept of Operations & Requirements* Section 3 to the solution elements defined in *Volume II: Design Content*. The matrix table can be used by:

- A specification writer to indicate what design content are to be implemented in a project specification;
- The protocol implementer, as a checklist to reduce the risk of failure to conform to the project specification;
- The supplier and user, as a detailed indication of the data concepts to be included in an implementation; and
- The user, as a basis for initially checking the potential interoperability with another implementation.

4.1.1 Requirement ID and Requirement Title Columns

The requirements are defined within Volume I, Section 3. The Req. ID (Vol. I) and Requirement Columns reference the requirements that are fulfilled by the data concepts represented in the Volume II: Design Content.

4.1.2 Dialog Column

This column indicates the name of the dialog and represents the highest level information element defined in Volume II. A hierarchy of dialog to message to data frame to data element can be followed in the RTM starting from the initial requirement-to-dialog starting point. The information in the Dialog column references Section 2 of Volume II that describes a generic dialog and provides a sequence diagram showing a message exchange sequence that fulfills the Volume I requirement.

4.1.3 Data Concept Name and Standard Clause Columns

The data concepts that fulfills a requirement are defined in Volume II. Some data concepts reference an external standard (for example, SAE LRMS or SAE ITIS) and are represented in Section 3.6 of this Volume II for convenience. The DC Type (Data Concept) column shows the type of data concept: dialog, message, data frame, or data element. The DC ID (Vol. II) column references a clause in Volume II containing the definition of the data concept, while the Definition Class Name column defines the data type for the data concept. The Data Concept Instance Name column defines the (instance) name of the data concept that fulfills the requirement.

4.1.4 Reference Data Concept (Informative)

The Reference DC column defines the instance name, or if specified the data type, of the "parent" data frame(s) or message that this data concept appears in to fulfill the requirement. Because of how the data concepts are defined in this standard, the instance name of the "parent" data frame or message for a data concept to fulfill a requirement may be different depending if the implementation uses ASN.1 or XML. For those requirements, both instance names are provided, prefaced with ASN: for ASN.1 implementations and prefaced with XML: for XML implementations.

Table 3 Requirements Traceability Matrix (RTM)

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.1.1.1	Send Center Active Verification Upon Request	2.4.1	dialog	dlCenterActiveVerificationRequest	3.1.3.1	dlCenterActiveVerificationRequest	
3.3.1.1.2	Publish Center Active Verification Information	2.4.3	dialog	dlCenterActiveVerificationUpdate	3.1.22.1	dlCenterActiveVerificationUpdate	
3.3.1.1.3	Subscribe to Center Active Verification Information	2.4.2	dialog	dlCenterActiveVerificationSubscription	3.1.3.2	dlCenterActiveVerificationSubscription	
3.3.1.1.4	Contents of the Center Active Verification Request		message	centerActiveVerificationRequestMsg	3.2.3.1	centerActiveVerificationRequestMsg	
3.3.1.1.4.1	Required Center Active Verification Request Content		data-frame	authentication	3.3.3.1	authentication	centerActiveVerificationRequestMsg
3.3.1.1.4.1	Required Center Active Verification Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	centerActiveVerificationRequestMsg
3.3.1.1.5	Contents of the Center Active Information		message	centerActiveVerificationResponseMsg	3.2.3.2	centerActiveVerificationResponseMsg	
3.3.1.1.5.1	Required Center Active Information		data-frame	organizationInformation	3.3.16.3	organization-information	centerActiveVerificationResponseMsg
3.3.1.1.5.1	Required Center Active Information		data-element	organization-resource-identifier	3.4.16.8	center-id	centerActiveVerificationResponseMsg
3.3.1.1.5.1	Required Center Active Information		data-element	organization-resource-name	3.4.16.9	center-name	centerActiveVerificationResponseMsg
3.3.1.1.5.2.1	Restrictions - Center Active		data-frame	restrictions	3.3.16.5	restrictions	centerActiveVerificationResponseMsg
3.3.1.2	Support Request-Response	2.4.1	dialog		2.3	Defining the Dialog Sequence	
3.3.1.3.1	Support Periodic Updates	2.4.3	dialog		2.3	Defining the Dialog Sequence	
3.3.1.3.2	Support Event-Driven Updates	2.4.3	dialog		2.3	Defining the Dialog Sequence	
3.3.1.4.1	Contents of the Error Report		message	errorReportMsg	3.2.3.3	errorReportMsg	
3.3.1.4.1.1	Required Error Report Contents		data-frame	organizationInformation	3.3.16.3	organization-information	errorReportMsg
3.3.1.4.1.1	Required Error Report Contents		data-frame	organizationInformation	3.3.16.3	organization-requesting	errorReportMsg
3.3.1.4.1.1	Required Error Report Contents		data-element	error-report-code	3.4.3.1	error-code	errorReportMsg
3.3.1.4.1.1	Required Error Report Contents		data-element	informationalText	3.4.3.2	error-text	errorReportMsg
3.3.1.4.1.2.1	Restrictions - Error Report		data-frame	restrictions	3.3.16.5	restrictions	errorReportMsg
3.3.2.1	Send Organization Information Upon Request	2.4.1	dialog	dlOrganizationInformationRequest	3.1.15.1	dlOrganizationInformationRequest	
3.3.2.2	Publish Organization Information	2.4.3	dialog	dlOrganizationInformationUpdate	3.1.31.1	dlOrganizationInformationUpdate	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.2.3	Subscribe to Organization Information	2.4.2	dialog	dlOrganizationInformationSubscrip tion	3.1.15.2	dlOrganizationInformationSubscrip tion	
3.3.2.4	Contents of the Organization Information Request		message	organizationInformationRequestMsg	3.2.15.2	organizationInformationRequestM sg	
3.3.2.4.1	Required Organization Information Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	organizationInformationReques tMsg
3.3.2.4.1	Required Organization Information Request Content		data-element	organization-information-type	3.4.16.6	organization-information-type	organizationInformationReques tMsg
3.3.2.4.2.1	Authentication - Organization Information		data-frame	authentication	3.3.3.1	authentication	organizationInformationReques tMsg
3.3.2.4.2.1.1	Operator Identifier - Organization Information		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.2.4.2.2	Owner Organization Identifier		data-element	organization-resource-identifier	3.4.16.8	organization-id	organizationInformationReques tMsg
3.3.2.4.2.3	Owner Center Identifier		data-element	organization-resource-identifier	3.4.16.8	center-id-list	organizationInformationReques tMsg
3.3.2.5	Contents of the Organization and Centers Information		message	organizationInformationMsg	3.2.15.1	organizationInformationMsg	
3.3.2.5.1	Required Organization Information Content		data-element	organization-resource-identifier	3.4.16.8	organization-id	ASN:organizationInformationM sg XML:organization-information- item
3.3.2.5.2.1	Organization Name		data-element	organization-resource-name	3.4.16.9	organization-name	ASN:organizationInformationM sg XML:organization-information- item
3.3.2.5.2.2	Organization Location		data-element	organization-location-fips	3.4.16.7	organization-location	ASN:organizationInformationM sg XML:organization-information- item
3.3.2.5.2.3	Organization Function Description		data-element	organization-function	3.4.16.4	organization-function	ASN:organizationInformationM sg XML:organization-information- item
3.3.2.5.2.4	Organization Contact Information		data-frame	contactDetails	3.3.16.1	organization-contact-details	ASN:organizationInformationM sg XML:organization-information- item
3.3.2.5.2.4.1	Required Organization Contact Information		data-element	organization-resource-identifier	3.4.16.8	contact-id	organization-contact-details

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.2.5.2.4.2.1	Contact Person Name		data-element	organization-resource-name	3.4.16.9	person-name	organization-contact-details
3.3.2.5.2.4.2.2	Contact Person Role		data-element	organization-resource-name	3.4.16.9	person-title	organization-contact-details
3.3.2.5.2.4.2.3	Work Phone Number		data-element	organization-resource-identifier	3.4.16.8	phone-number	organization-contact-details
3.3.2.5.2.4.2.4	Alternate Phone Number		data-element	organization-resource-identifier	3.4.16.8	phone-alternate	organization-contact-details
3.3.2.5.2.4.2.5	Cellular Phone Number		data-element	organization-resource-identifier	3.4.16.8	mobile-phone-number	organization-contact-details
3.3.2.5.2.4.2.6	Cellular Phone Identifier		data-element	organization-resource-identifier	3.4.16.8	mobile-phone-id	organization-contact-details
3.3.2.5.2.4.2.7	Fax Number		data-element	organization-resource-identifier	3.4.16.8	fax-number	organization-contact-details
3.3.2.5.2.4.2.8	Pager Number		data-element	organization-resource-identifier	3.4.16.8	pager-number	organization-contact-details
3.3.2.5.2.4.2.9	Pager Identifier		data-element	organization-resource-identifier	3.4.16.8	pager-id	organization-contact-details
3.3.2.5.2.4.2.10	Internet E-Mail Address		data-element	organization-resource-name	3.4.16.9	email-address	organization-contact-details
3.3.2.5.2.4.2.11	Radio Unit Identifier		data-element	organization-resource-identifier	3.4.16.8	radio-unit	organization-contact-details
3.3.2.5.2.4.2.12	Mailing Address Line 1		data-element	contact-mailing-address-entry	3.4.16.2	address-line1	organization-contact-details
3.3.2.5.2.4.2.13	Mailing Address Line 2		data-element	contact-mailing-address-entry	3.4.16.2	address-line2	organization-contact-details
3.3.2.5.2.4.2.14	Mailing Address City		data-element	contact-mailing-address-entry	3.4.16.2	city	organization-contact-details
3.3.2.5.2.4.2.15	Mailing Address State		data-element	contact-mailing-address-state	3.4.16.3	state	organization-contact-details
3.3.2.5.2.4.2.16	Mailing Address Zip Code		data-element	contact-mailing-address-entry	3.4.16.2	zip-code	organization-contact-details
3.3.2.5.2.4.2.17	Mailing Address Country		data-element	contact-mailing-address-entry	3.4.16.2	country	organization-contact-details
3.3.2.5.2.5	Organization Center Information		data-frame	organizationCenterInformation	3.3.16.2	center-contact-list	ASN:organizationInformationM sg XML:organization-information- item
3.3.2.5.2.5.1	Required Organization Center Information		data-element	organization-resource-identifier	3.4.16.8	center-id	ASN:center-contact-list XML:center-contact-details
3.3.2.5.2.5.2.1	Organization Center Name		data-element	organization-resource-name	3.4.16.9	center-name	ASN:center-contact-list XML:center-contact-details
3.3.2.5.2.5.2.2	Organization Center Location		data-frame	geoLocation	3.6.9.4	center-location	ASN:center-contact-list XML:center-contact-details
3.3.2.5.2.5.2.3	Organization Center Description		data-element	organization-function	3.4.16.4	center-description	ASN:center-contact-list XML:center-contact-details
3.3.2.5.2.5.2.4	Organization Center Type		data-element	center-type	3.4.16.1	center-type	ASN:center-contact-list XML:center-contact-details
3.3.2.5.2.5.2.5	Organization Center Contact Information		data-frame	contactDetails	3.3.16.1	center-contact-details	ASN:center-contact-list XML:center-contact-details

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.2.5.2.6	Date and Time Change Information - Organization Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:organizationInformationMsg XML:organization-information-item
3.3.3.1	Send Event Information Upon Request	2.4.1	dialog	dIFullEventUpdateRequest	3.1.8.1	dIFullEventUpdateRequest	
3.3.3.2	Publish Event Information	2.4.3	dialog	dIFullEventUpdateUpdate	3.1.26.1	dIFullEventUpdateUpdate	
3.3.3.3	Subscribe to Event Information	2.4.2	dialog	dIFullEventUpdateSubscription	3.1.8.4	dIFullEventUpdateSubscription	
3.3.3.4	Contents of Event Information Request		message	eventRequestMsg	3.2.8.3	eventRequestMsg	
3.3.3.4.1	Required Event Information Request Content		data-frame	requestHeader	3.3.8.41	request-header	eventRequestMsg
3.3.3.4.1	Required Event Information Request Content		data-frame	requestType	3.3.8.44	request-type	eventRequestMsg
3.3.3.4.2.1	Authentication - Events		data-frame	authentication	3.3.3.1	authentication	eventRequestMsg
3.3.3.4.2.1.1	Operator Identifier - Events		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.3.4.2.2	Requesting Organization		data-frame	organizationInformation	3.3.16.3	organization-requesting	request-header
3.3.3.4.3.1	Event Unique Identifier Filter		data-element	event-request-focus	3.4.8.40	request-focus	request-type
3.3.3.4.3.1	Event Unique Identifier Filter		data-element	organization-resource-identifier	3.4.16.8	event-ids	request-type
3.3.3.4.3.2	Event Response Plan Identifier Filter		data-element	organization-resource-identifier	3.4.16.8	response-plan-ids	request-type
3.3.3.4.3.3	Event Category Filter		data-element	event-category	3.4.8.7	category	ASN:request-filters XML:request-filter
3.3.3.4.3.4	Event Priority Filter		data-element	event-description-priority-level	3.4.8.11	priority-level	ASN:request-filters XML:request-filter
3.3.3.4.3.5	Event Description Confidence Level Filter		data-element	event-description-confidence-level	3.4.8.8	confidence-level	ASN:request-filters XML:request-filter
3.3.3.4.3.6	Event Access Level Filter		data-element	event-access-level	3.4.8.1	access-level	ASN:request-filters XML:request-filter
3.3.3.4.3.7	Event Action Flag Filter		data-element	event-action-request-flag	3.4.8.4	action-request-flag	ASN:request-filters XML:request-filter
3.3.3.4.3.8	Event Severity Filter		data-element	event-severity	3.4.8.42	severity	ASN:request-filters XML:request-filter
3.3.3.4.3.9	External Center Organization Filter		data-frame	organizationInformation	3.3.16.3	organizations-requested	ASN:request-filters XML:request-filter
3.3.3.4.3.10	Event Location Filter		data-frame	requestLocation	3.3.8.42	request-locations	eventRequestMsg

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.4.3.11	Request Start Time Filter		data-frame	dateTimeZone	3.3.10.1	start-time	request-times
3.3.3.4.3.12	Request End Time Filter		data-frame	dateTimeZone	3.3.10.1	end-time	request-times
3.3.3.4.3.13	Hazardous Material Codes Filter		data-element	event-hazmat-code	3.4.8.16	hazmat-code	ASN:request-filters XML:request-filter
3.3.3.4.3.14	Hazardous Material Placard Codes Filter		data-element	event-placard-code	3.4.8.35	placard-code	ASN:request-filters XML:request-filter
3.3.3.4.3.15	Event Headline Filter		data-frame	eventType	3.3.8.29	headline	ASN:request-filters XML:request-filter
3.3.3.5	Contents of the Event Information		message	fEUMsg	3.2.8.4	fEUMsg	
3.3.3.6	Required Event Information Content		data-frame	messageHeader	3.3.8.35	message-header	ASN:fEUMsg XML:FEU
3.3.3.6	Required Event Information Content		data-frame	eventReference	3.3.8.25	event-reference	ASN:fEUMsg XML:FEU
3.3.3.6	Required Event Information Content		data-frame	eventHeadline	3.3.8.17	event-headline	ASN:fEUMsg XML:FEU
3.3.3.6	Required Event Information Content		data-frame	eventElementDetail	3.3.8.15	event-element-details	ASN:fEUMsg XML:FEU
3.3.3.6.1.1	Required Event Message Header Information		data-frame	organizationInformation	3.3.16.3	organization-sending	message-header
3.3.3.6.1.1	Required Event Message Header Information		data-element	event-message-type-version	3.4.8.32	message-type-version	message-header
3.3.3.6.1.1	Required Event Message Header Information		data-element	event-message-number	3.4.8.30	message-number	message-header
3.3.3.6.1.1	Required Event Message Header Information		data-frame	dateTimeZone	3.3.10.1	message-time-stamp	message-header
3.3.3.6.1.2.1	External Center Organization - Events		data-frame	organizationInformation	3.3.16.3	organizations-receiving	message-header
3.3.3.6.1.2.2	Responding Organization		data-frame	organizationInformation	3.3.16.3	organizations-responding	message-header
3.3.3.6.1.2.3	Message Expiry Time		data-frame	dateTimeZone	3.3.10.1	message-expiry-time	message-header
3.3.3.6.2.1	Required Event Reference Information		data-element	organization-resource-identifier	3.4.16.8	event-id	event-reference
3.3.3.6.2.1	Required Event Reference Information		data-element	event-update	3.4.8.49	event-update	event-reference
3.3.3.6.2.1	Required Event Reference Information		data-frame	dateTimeZone	3.3.10.1	update-time	event-reference
3.3.3.6.2.2.1	Event Response Plan		data-element	organization-resource-identifier	3.4.16.8	response-plan-id	event-reference

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.6.3.1	Required Event Headline Information		data-frame	eventType	3.3.8.29	headline	event-headline
3.3.3.6.3.2.1	Event Headline Element		data-element	event-headline-element	3.4.8.17	headline-element	event-headline
3.3.3.6.4.1	Event Time		data-frame	eventTimes	3.3.8.27	event-times	ASN:event-element-details XML: event-element-detail
3.3.3.6.4.1.1	Required Event Time Information		data-frame	dateTimeZone	3.3.10.1	update-time	event-times
3.3.3.6.4.1.2.1	Event Valid Period		data-frame	validPeriod	3.3.8.45	valid-period	event-times
3.3.3.6.4.1.2.1.1	Required Event Effective Period Information		data-element	event-timeline-schedule-days-of-the-week	3.4.8.46	days-of-the-week	ASN:effective-periods XML:effective-period
3.3.3.6.4.1.2.1.2.1	Effective Period Qualifier		data-element	event-effective-period-qualifier	3.4.8.14	effective-period-qualifier	ASN:effective-periods XML:effective-period
3.3.3.6.4.1.2.1.2.2	Days Event Not In Effect		data-element	event-holiday-day	3.4.8.18	holiday-day	ASN:effective-periods XML:effective-period
3.3.3.6.4.1.2.2	Planned Event Schedule Element Identifier		data-element	event-schedule-element-identifier	3.4.8.41	schedule-element-ids	event-times
3.3.3.6.4.1.2.3	Sequence Date/Time		data-frame	dateTimeZone	3.3.10.1	sequence-time	event-times
3.3.3.6.4.1.2.4	Event Start Date/Time		data-frame	dateTimeZone	3.3.10.1	start-time	event-times
3.3.3.6.4.1.2.5	Alternate Start Date/Time		data-frame	dateTimeZone	3.3.10.1	alternate-start-time	event-times
3.3.3.6.4.1.2.6	Alternate End Date/Time		data-frame	dateTimeZone	3.3.10.1	alternate-end-time	event-times
3.3.3.6.4.1.2.7	Expected Start Date/Time		data-frame	dateTimeZone	3.3.10.1	expected-start-time	event-times
3.3.3.6.4.1.2.8	Expected End Date/Time		data-frame	dateTimeZone	3.3.10.1	expected-end-time	event-times
3.3.3.6.4.1.2.9	Recurrent Times Event in Effect		data-frame	recurrentTime	3.3.8.39	recurrent-times	event-times
3.3.3.6.4.1.2.10	Planned Event Continuous Flag		data-element	binary-flag	3.4.10.1	planned-event-continuous-flag	event-times
3.3.3.6.4.2	Element Identifier		data-element	event-element-identifier	3.4.8.15	element-id	ASN:event-element-details XML: event-element-detail
3.3.3.6.4.3	Schedule Element Identifier		data-element	event-schedule-element-identifier	3.4.8.41	schedule-element-id	ASN:event-element-details XML: event-element-detail
3.3.3.6.4.4	Event Category		data-element	event-category	3.4.8.7	event-category	ASN:event-element-details XML: event-element-detail
3.3.3.6.4.5	Event Source		data-frame	eventSource	3.3.8.26	event-source	ASN:event-element-details XML: event-element-detail
3.3.3.6.4.5.1	Information Source Organization		data-frame	organizationInformation	3.3.16.3	information-source	event-source
3.3.3.6.4.5.2	Event Detection Method		data-element	event-detection-method	3.4.8.13	event-detection-method	event-source
3.3.3.6.4.6	Event Description		data-frame	eventDescription	3.3.8.14	event-descriptions	ASN:event-element-details XML: event-element-detail

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.6.4.6.1	Event Quantity		data-frame	eventQuantity	3.3.8.24	quantity	ASN:event-descriptions XML:event-description
3.3.3.6.4.6.2	Detour		data-frame	alternateRouteDetail	3.3.8.3	detour	ASN:event-descriptions XML:event-description
3.3.3.6.4.6.2.1	Required Detour Information		data-element	event-alternate-route-type	3.4.8.5	alternate-route-type	detour
3.3.3.6.4.6.2.2.1	Destination		data-frame	landmarkLocation	3.3.8.33	destination	detour
3.3.3.6.4.6.2.2.2	Location on Alternate Route		data-frame	linkLocation	3.3.8.34	location-on-alternate-route	detour
3.3.3.6.4.6.3.1	Description Language		data-element	event-description-language	3.4.8.9	language	additional-text
3.3.3.6.4.6.3.2	Report Medium		data-element	event-report-medium	3.4.8.39	report-medium	additional-text
3.3.3.6.4.7	Event Location		data-frame	eventLocation	3.3.8.21	event-locations	ASN:event-element-details XML:event-element-detail
3.3.3.6.4.7.1.1	Area Identifier		data-element	event-location-area-identifier	3.4.8.26	area-id	area-location
3.3.3.6.4.7.1.2	Name of Area		data-element	event-area-name	3.4.8.6	area-name	area-location
3.3.3.6.4.7.1.3	Area Location Rank		data-element	event-location-rank	3.4.8.29	location-rank	area-location
3.3.3.6.4.7.1.4	Secondary Area Location Reference		data-frame	areaLocation	3.3.8.4	upward-area-reference	area-location
3.3.3.6.4.7.2	Required Link Location Information		data-frame	pointOnLink	3.3.8.37	primary-location	location-on-link
3.3.3.6.4.7.3.1	Link Ownership		data-element	transportation-network-name	3.4.21.1	link-ownership	location-on-link
3.3.3.6.4.7.3.2	Route Designator		data-element	link-route-designator	3.4.14.29	link-designator	location-on-link
3.3.3.6.4.7.3.3	Second Route Designator		data-element	link-route-designator	3.4.14.29	second-link-designator	location-on-link
3.3.3.6.4.7.3.4	Link Identifier		data-element	transportation-network-identifier	3.4.20.1	link-id	location-on-link
3.3.3.6.4.7.3.5	Link Name - Events		data-element	transportation-network-name	3.4.21.1	link-name	location-on-link
3.3.3.6.4.7.3.6	Secondary Point		data-frame	pointOnLink	3.3.8.37	secondary-location	location-on-link
3.3.3.6.4.7.3.7	Link Direction		data-element	link-direction	3.4.14.9	link-direction	location-on-link
3.3.3.6.4.7.3.8	Link Alignment		data-element	link-alignment	3.4.14.1	link-alignment	location-on-link
3.3.3.6.4.7.3.9	Linear Reference Version - Events		data-element	link-location-linear-reference-version	3.4.14.16	linear-reference-version	location-on-link
3.3.3.6.4.7.3.10	Alternate Link Location		data-frame	linkLocation	3.3.8.34	alternate-designations	location-on-link
3.3.3.6.4.7.4	Required Point on a Link Location Information		data-frame	geoLocation	3.6.9.4	geo-location	location-on-link/primary-location
3.3.3.6.4.7.5.1	Linear Reference Location		data-element	link-location-linear-reference	3.4.14.15	linear-reference	location-on-link/primary-location
3.3.3.6.4.7.5.2	Link Name - Event Point		data-element	transportation-network-name	3.4.21.1	link-name	location-on-link/primary-location

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.6.4.7.5.3	Point Name		data-element	transportation-network-name	3.4.21.1	point-name	location-on-link/primary-location
3.3.3.6.4.7.5.4	Cross Street Identifier		data-element	transportation-network-identifier	3.4.20.1	cross-street-designator	location-on-link/primary-location
3.3.3.6.4.7.5.5	Cross Street Name		data-element	transportation-network-name	3.4.21.1	cross-street-name	location-on-link/primary-location
3.3.3.6.4.7.5.6	Signed Destination		data-element	event-signed-destination	3.4.8.43	signed-destination	location-on-link/primary-location
3.3.3.6.4.7.5.7	Point Location Rank		data-element	event-location-rank	3.4.8.29	location-rank	location-on-link/primary-location
3.3.3.6.4.7.5.8	Landmark Type		data-element	event-location-landmark-type	3.4.8.28	landmark-type	location-on-link/primary-location
3.3.3.6.4.7.5.9	Secondary Link Location		data-frame	areaLocation	3.3.8.4	upward-area-reference	location-on-link/primary-location
3.3.3.6.4.7.6	Required Landmark Location Information		data-element	event-location-landmark-type	3.4.8.28	landmark-type	ASN:event-locations/landmark XML:event-location/landmark
3.3.3.6.4.7.6	Required Landmark Location Information		data-element	event-landmark-name	3.4.8.23	landmark-name	ASN:event-locations/landmark XML:event-location/landmark
3.3.3.6.4.7.7.1	Landmark Point Name		data-element	event-landmark-name	3.4.8.23	landmark-point-name	ASN:event-locations/landmark XML:event-location/landmark
3.3.3.6.4.7.7.2	Landmark Location Rank		data-element	event-location-rank	3.4.8.29	location-rank	ASN:event-locations/landmark XML:event-location/landmark
3.3.3.6.4.7.7.3	Landmark Location		data-frame	geoLocation	3.6.9.4	geo-location	ASN:event-locations/landmark XML:event-location/landmark
3.3.3.6.4.7.7.4	Secondary Landmark Location		data-frame	areaLocation	3.3.8.4	upward-area-reference	ASN:event-locations/landmark XML:event-location/landmark
3.3.3.6.4.7.8	Geographic Location		data-frame	geoLocation	3.6.9.4	geo-location	ASN:event-locations XML:event-location
3.3.3.6.4.8	Event Name		data-element	organization-resource-name	3.4.16.9	event-name	ASN:event-element-details XML:event-element-detail
3.3.3.6.4.9	Event Lane		data-frame	eventLane	3.3.8.20	event-lanes	ASN:event-element-details XML:event-element-detail
3.3.3.6.4.9.1.1	Lane Type		data-element	laneRoadway	3.6.5.13	lanes-type	ASN:event-lanes XML:event-lane
3.3.3.6.4.9.1.2	Direction of Travel		data-element	link-direction	3.4.14.9	link-direction	ASN:event-lanes XML:event-lane

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.6.4.9.1.3	Total Number of Lanes		data-element	link-lanes-count	3.4.14.12	lanes-total-original	ASN:event-lanes XML:event-lane
3.3.3.6.4.9.1.4	Number of Lanes Affected		data-element	link-lanes-count	3.4.14.12	lanes-total-affected	ASN:event-lanes XML:event-lane
3.3.3.6.4.9.1.5	Lane Number Affected		data-element	link-lane-number	3.4.14.11	event-lanes-affected	ASN:event-lanes XML:event-lane
3.3.3.6.4.9.1.6	Lane Status		data-element	closures	3.6.5.5	lanes-status	ASN:event-lanes XML:event-lane
3.3.3.6.4.10	Event Transit Location		data-frame	eventTransitLocation	3.3.8.28	event-transit-locations	ASN:event-element-details XML:event-element-detail
3.3.3.6.4.10.1	Required Event Transit Location Information		data-element	organization-resource-identifier	3.4.16.8	transit-route-id	ASN:event-transit-locations XML:event-transit-location-item
3.3.3.6.4.10.2.1	Transit Direction of Travel		data-element	event-transit-direction-of-travel	3.4.8.48	transit-direction	ASN:event-transit-locations XML:event-transit-location-item
3.3.3.6.4.10.2.2	Transit Stop Detail		data-element	organization-resource-name	3.4.16.9	transit-stop-detail	ASN:event-transit-locations XML:event-transit-location-item
3.3.3.6.4.10.2.3	Transit Location		data-element	event-description-notes-and-comments	3.4.8.10	transit-location-text	ASN:event-transit-locations XML:event-transit-location-item
3.3.3.6.4.11	Event Description Confidence Level		data-element	event-description-confidence-level	3.4.8.8	confidence-level	ASN:event-element-details XML:event-element-detail
3.3.3.6.4.12	Event Access Level		data-element	event-access-level	3.4.8.1	access-level	ASN:event-element-details XML:event-element-detail
3.3.3.6.4.13	Event Hazardous Material Code		data-frame	hazmat	3.3.8.32	event-hazmat-details	ASN:event-element-details XML:event-element-detail
3.3.3.6.4.13.1	Event HazMat Code		data-element	event-hazmat-code	3.4.8.16	hazmat-code	ASN:event-hazmat-details XML:event-hazmat-details-item
3.3.3.6.4.13.2	Event HazMat Placard Code		data-element	event-placard-code	3.4.8.35	placard-code	ASN:event-hazmat-details XML:event-hazmat-details-item
3.3.3.6.4.13.3	Placard Code Displayed Correctly on Vehicle		data-element	event-placard-displayed-code	3.4.8.36	placard-displayed-accuracy	ASN:event-hazmat-details XML:event-hazmat-details-item
3.3.3.7.1	Restrictions - Events		data-frame	restrictions	3.3.16.5	restrictions	ASN:fEUMsg XML:FEU
3.3.3.7.2	Project Reference		data-frame	projectReference	3.3.8.38	project-references	ASN:fEUMsg XML:FEU

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.7.2.1	Project Reference Information		data-element	organization-resource-identifier	3.4.16.8	project-reference	ASN:project-references XML:project-reference
3.3.3.7.2.2	Permit Reference Information		data-element	organization-resource-identifier	3.4.16.8	permit-reference	ASN:project-references XML:project-reference
3.3.3.7.2.3	Owner Organization - Project Reference		data-frame	organizationInformation	3.3.16.3	project-contacts	ASN:project-references XML:project-reference
3.3.3.7.2.4	Project Description		data-element	event-description-notes-and-comments	3.4.8.10	project-description	ASN:project-references XML:project-reference
3.3.3.7.3	Event Indicator		data-frame	eventIndicator	3.3.8.19	event-indicators	ASN:fEUMsg XML:FEU
3.3.3.7.3.1	Event Status		data-element	event-incident-status	3.4.8.20	status	ASN:event-indicators XML:event-indicator
3.3.3.7.3.2	Event Duration Exceeded Flag		data-element	binary-flag	3.4.10.1	duration-exceeded-flag	ASN:event-indicators XML:event-indicator
3.3.3.7.3.3	Event Priority Level		data-element	event-description-priority-level	3.4.8.11	priority-level	ASN:event-indicators XML:event-indicator
3.3.3.7.3.4	Event Severity		data-element	event-severity	3.4.8.42	severity	ASN:event-indicators XML:event-indicator
3.3.3.7.3.5	Event Impact Level		data-element	event-impact-level	3.4.8.22	impact-level	ASN:event-indicators XML:event-indicator
3.3.3.7.3.6	Event Active Flag		data-element	binary-flag	3.4.10.1	active-flag	ASN:event-indicators XML:event-indicator
3.3.3.7.3.7	Event Class		data-element	event-planned-event-class	3.4.8.37	planned-event-class	ASN:event-indicators XML:event-indicator
3.3.3.7.4	Other References		data-frame	otherReference	3.3.8.36	other-references	ASN:fEUMsg XML:FEU
3.3.3.7.4.1	Trip Reference		data-element	organization-resource-identifier	3.4.16.8	trip-reference	ASN:other-references XML:other-reference
3.3.3.7.4.2	Responsible Reference		data-frame	eventReference	3.3.8.25	responsible-event	ASN:other-references XML:other-reference
3.3.3.7.4.3	Related Event		data-frame	eventReference	3.3.8.25	related-event	ASN:other-references XML:other-reference
3.3.3.7.4.4	Previous Event		data-frame	eventReference	3.3.8.25	previous-event	ASN:other-references XML:other-reference

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.7.4.5	Split Event		data-frame	eventReference	3.3.8.25	split-event	ASN:other-references XML:other-reference
3.3.3.7.4.6	Merged Event		data-frame	eventReference	3.3.8.25	merged-event	ASN:other-references XML:other-reference
3.3.3.7.4.7	Sibling Event		data-frame	eventReference	3.3.8.25	sibling-event	ASN:other-references XML:other-reference
3.3.3.7.4.8	Associated Device		data-frame	deviceReference	3.3.5.12	associated-device	ASN:other-references XML:other-reference
3.3.3.7.4.9	Associated URL		data-frame	urlReference	3.3.10.2	associated-url	ASN:other-references XML:other-reference
3.3.3.7.5	Event Comments		data-frame	eventComments	3.3.8.13	event-comments	ASN:fEUMsg XML:FEU
3.3.3.7.5.1	Required Event Comments		data-element	event-description-notes-and-comments	3.4.8.10	event-comment	event-comments
3.3.3.7.5.2.1	Operator Identifier - Event Comments		data-element	organization-resource-identifier	3.4.16.8	operator-id	event-comments
3.3.3.7.5.2.2	Operator Comments		data-element	event-description-notes-and-comments	3.4.8.10	operator-comment	event-comments
3.3.3.7.5.2.3	Comment Description Language		data-element	event-description-language	3.4.8.9	language	event-comments
3.3.3.7.6	Event Reports		data-frame	fullReportText	3.3.8.31	full-report-texts	ASN:fEUMsg XML:FEU
3.3.3.7.6.1	Required Event Reports		data-element	event-report-medium	3.4.8.39	report-medium	ASN:full-report-texts XML:full-report-text
3.3.3.7.6.1	Required Event Reports		data-element	event-description-notes-and-comments	3.4.8.10	description	ASN:full-report-texts XML:full-report-text
3.3.3.7.6.2.1	Report Description Language		data-element	event-description-language	3.4.8.9	language	ASN:full-report-texts XML:full-report-text
3.3.3.8.1	Send Action Logs Upon Request	2.4.1	dialog	dlActionLogRequest	3.1.8.3	dlActionLogRequest	
3.3.3.8.2	Publish Action Log Information	2.4.3	dialog	dlActionLogUpdate	3.1.26.3	dlActionLogUpdate	
3.3.3.8.3	Subscribe to Action Log Information	2.4.2	dialog	dlActionLogSubscription	3.1.8.6	dlActionLogSubscription	
3.3.3.8.4	Contents of Action Log Information		message	actionLogMsg	3.2.8.1	actionLogMsg	
3.3.3.8.4.1	Required Action Log Information Content		data-element	organization-resource-identifier	3.4.16.8	event-id	ASN:actionLogMsg XML:log-entry

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.8.4.1	Required Action Log Information Content		data-element	event-action-log-element-identifier	3.4.8.2	action-log-element-id	ASN:actionLogMsg XML:log-entry
3.3.3.8.4.1	Required Action Log Information Content		data-frame	dateTimeZone	3.3.10.1	action-time	ASN:actionLogMsg XML:log-entry
3.3.3.8.4.1	Required Action Log Information Content		data-element	event-description-notes-and-comments	3.4.8.10	action-description	ASN:actionLogMsg XML:log-entry
3.3.3.8.4.1	Required Action Log Information Content		data-element	event-action-type	3.4.8.3	action-type	ASN:actionLogMsg XML:log-entry
3.3.3.8.4.2.1	Restrictions - Action Logs		data-frame	restrictions	3.3.16.5	restrictions	ASN:actionLogMsg XML:log-entry
3.3.3.9.1	Send Event Index Information Upon Request	2.4.1	dialog	dIEventIndexRequest	3.1.8.2	dIEventIndexRequest	
3.3.3.9.2	Publish Event Index Information	2.4.3	dialog	dIEventIndexUpdate	3.1.26.2	dIEventIndexUpdate	
3.3.3.9.3	Subscribe to Event Index Information	2.4.2	dialog	dIEventIndexSubscription	3.1.8.5	dIEventIndexSubscription	
3.3.3.9.4	Contents of Event Index Request		message	eventRequestMsg	3.2.8.3	eventRequestMsg	
3.3.3.9.4.1	Required Event Index Request Content		data-frame	requestHeader	3.3.8.41	request-header	eventRequestMsg
3.3.3.9.4.1	Required Event Index Request Content		data-frame	requestType	3.3.8.44	request-type	eventRequestMsg
3.3.3.9.4.2.1	Authentication - Event Index		data-frame	authentication	3.3.3.1	authentication	eventRequestMsg
3.3.3.9.4.2.1.1	Operator Identifier - Event Index		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.3.9.4.2.2	Requesting Organization - Event Index		data-frame	organizationInformation	3.3.16.3	organization-requesting	request-header
3.3.3.9.5	Contents of the Event Index Information		message	eventIndexMsg	3.2.8.2	eventIndexMsg	
3.3.3.9.5.1	Required Event Index Information Content		data-element	url-reference	3.4.10.5	feu-url	ASN:eventIndexMsg XML:eventIndex
3.3.3.9.5.1	Required Event Index Information Content		data-frame	dateTimeZone	3.3.10.1	event-update-time	ASN:eventIndexMsg XML:eventIndex
3.3.3.9.5.1	Required Event Index Information Content		data-element	organization-resource-identifier	3.4.16.8	event-id	ASN:eventIndexMsg XML:eventIndex
3.3.3.9.5.1	Required Event Index Information Content		data-element	event-update	3.4.8.49	event-update	ASN:eventIndexMsg XML:eventIndex
3.3.3.9.5.1	Required Event Index Information Content		data-element	event-incident-status	3.4.8.20	status	ASN:eventIndexMsg XML:eventIndex

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.3.9.5.2.1	Event URL File Update Date and Time Information		data-frame	dateTimeZone	3.3.10.1	file-update-time	ASN:eventIndexMsg XML:eventIndex
3.3.3.9.5.2.2	Event URL Reference Medium		data-element	url-reference-type	3.4.10.6	url-reference-medium	feu-url
3.3.4.1.1	Contents of the Traffic Network Information Request		message	trafficNetworkInformationRequestMsg	3.2.19.1	trafficNetworkInformationRequestMsg	
3.3.4.1.1.1	Required Traffic Network Information Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	trafficNetworkInformationRequestMsg
3.3.4.1.1.1	Required Traffic Network Information Request Content		data-element	transportation-network-information-type	3.4.20.2	network-information-type	trafficNetworkInformationRequestMsg
3.3.4.1.1.2.1	Authentication - Network		data-frame	authentication	3.3.3.1	authentication	trafficNetworkInformationRequestMsg
3.3.4.1.1.2.1.1	Operator Identifier - Network		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.4.1.1.2.2	Roadway Network Identifier		data-element	transportation-network-identifier	3.4.20.1	network-identifiers	trafficNetworkInformationRequestMsg
3.3.4.1.1.2.3	Traffic Network Identifier		data-element	transportation-network-identifier	3.4.20.1	roadway-network-id-list	trafficNetworkInformationRequestMsg
3.3.4.2.1.1	Send Node Inventory Information Upon Request	2.4.1	dialog	dINodeInventoryRequest	3.1.14.1	dINodeInventoryRequest	
3.3.4.2.1.2	Publish Node Inventory Information	2.4.3	dialog	dINodeInventoryUpdate	3.1.35.1	dINodeInventoryUpdate	
3.3.4.2.1.3	Subscribe to Node Inventory Information	2.4.2	dialog	dITrafficNetworkInformationSubscription	3.1.19.1	dITrafficNetworkInformationSubscription	
3.3.4.2.1.4	Contents of the Node Inventory Request		message	trafficNetworkInformationRequestMsg	3.2.19.1	trafficNetworkInformationRequestMsg	
3.3.4.2.1.5	Contents of the Node Inventory Information		message	nodeInventoryMsg	3.2.14.1	nodeInventoryMsg	
3.3.4.2.1.5.1	Required Node Inventory Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:nodeInventoryMsg XML:node-inventory-item
3.3.4.2.1.5.1	Required Node Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	network-id	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.1	Required Node Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	node-id	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.1	Required Node Inventory Information Content		data-frame	geoLocation	3.6.9.4	node-location	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.1	Restrictions - Node Inventory		data-frame	restrictions	3.3.16.5	restrictions	ASN:nodeInventoryMsg XML:node-inventory-item
3.3.4.2.1.5.2.2	Roadway Network Name - Node Inventory		data-element	transportation-network-name	3.4.21.1	network-name	ASN:node-inventory-list XML:node-inventory-list/node

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.2.1.5.2.3	Node Name - Node Inventory		data-element	transportation-network-name	3.4.21.1	node-name	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.4	Node Description		data-element	transportation-network-name	3.4.21.1	node-description	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.5	Route Designator - Node Inventory		data-element	link-route-designator	3.4.14.29	node-route-designator	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.6	Node Direction		data-element	link-direction	3.4.14.9	node-direction	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.7	Linear Reference - Node Inventory		data-element	link-location-linear-reference	3.4.14.15	linear-reference	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.7	Linear Reference - Node Inventory		data-element	link-location-linear-reference-version	3.4.14.16	linear-reference-version	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.8	Node Type		data-element	node-type	3.4.15.3	node-type	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.9	Number of Links		data-element	node-links-number	3.4.15.1	node-links-number	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.1.5.2.10	Node Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:node-inventory-list XML:node-inventory-list/node
3.3.4.2.2.1	Send Node Status Information Upon Request	2.4.1	dialog	dINodeStatusRequest	3.1.14.2	dINodeStatusRequest	
3.3.4.2.2.2	Publish Node Status Information	2.4.3	dialog	dINodeStatusUpdate	3.1.35.2	dINodeStatusUpdate	
3.3.4.2.2.3	Subscribe to Node Status Information	2.4.2	dialog	dITrafficNetworkInformationSubscription	3.1.19.1	dITrafficNetworkInformationSubscription	
3.3.4.2.2.4	Contents of the Node Status Request		message	trafficNetworkInformationRequestMsg	3.2.19.1	trafficNetworkInformationRequestMsg	
3.3.4.2.2.5	Contents of the Node Status Information		message	nodeStatusMsg	3.2.14.2	nodeStatusMsg	
3.3.4.2.2.5.1	Required Node Status Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:nodeStatusMsg XML:node-status-item
3.3.4.2.2.5.1	Required Node Status Information Content		data-element	transportation-network-identifier	3.4.20.1	network-id	ASN:node-status-list XML:node-status-list/node
3.3.4.2.2.5.1	Required Node Status Information Content		data-element	transportation-network-identifier	3.4.20.1	node-id	ASN:node-status-list XML:node-status-list/node
3.3.4.2.2.5.1	Required Node Status Information Content		data-element	node-status	3.4.15.2	node-status	ASN:node-status-list XML:node-status-list/node

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.2.2.5.2.1	Restrictions - Node Status		data-frame	restrictions	3.3.16.5	restrictions	ASN:nodeStatusMsg XML:node-status-item
3.3.4.2.2.5.2.2	Roadway Network Name - Node Status		data-element	transportation-network-name	3.4.21.1	network-name	ASN:node-status-list XML:node-status-list/node
3.3.4.2.2.5.2.3	Node Name - Node Status		data-element	transportation-network-name	3.4.21.1	node-name	ASN:node-status-list XML:node-status-list/node
3.3.4.2.2.5.2.4	Node Status Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:node-status-list XML:node-status-list/node
3.3.4.3.1.1	Send Link Inventory Information Upon Request	2.4.1	dialog	dLinkInventoryRequest	3.1.13.1	dLinkInventoryRequest	
3.3.4.3.1.2	Publish Link Inventory Information	2.4.3	dialog	dLinkInventoryUpdate	3.1.34.1	dLinkInventoryUpdate	
3.3.4.3.1.3	Subscribe to Link Inventory Information	2.4.2	dialog	dITrafficNetworkInformationSubscription	3.1.19.1	dITrafficNetworkInformationSubscription	
3.3.4.3.1.4	Contents of the Link Inventory Request		message	trafficNetworkInformationRequestMsg	3.2.19.1	trafficNetworkInformationRequestMsg	
3.3.4.3.1.5	Contents of the Link Inventory Information		message	linkInventoryMsg	3.2.13.1	linkInventoryMsg	
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:linkInventoryMsg XML:link-inventory-item
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	network-id	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	link-id	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-element	link-type	3.4.14.39	link-type	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	link-begin-node-id	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-frame	geoLocation	3.6.9.4	link-begin-node-location	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	link-end-node-id	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.1	Required Link Inventory Information Content		data-frame	geoLocation	3.6.9.4	link-end-node-location	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.1	Restrictions - Link Inventory		data-frame	restrictions	3.3.16.5	restrictions	ASN:linkInventoryMsg XML:link-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.3.1.5.2.2	Roadway Network Name - Link Inventory		data-element	transportation-network-name	3.4.21.1	network-name	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.3	Link Name - Link Inventory		data-element	transportation-network-name	3.4.21.1	link-name	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.4	Alternate Names - Link Inventory		data-element	transportation-network-name	3.4.21.1	alternate-link-name	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.5	Route Designator - Link Inventory		data-element	link-route-designator	3.4.14.29	link-route-designator	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.6	Secondary Route Designator		data-element	link-route-designator	3.4.14.29	secondary-link-route-designator	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.7	Linear Reference - Link Inventory		data-element	link-location-linear-reference	3.4.14.15	linear-reference	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.7	Linear Reference - Link Inventory		data-element	link-location-linear-reference-version	3.4.14.16	linear-reference-version	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.8	Link Length		data-element	link-length	3.4.14.13	link-length	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.9	Link Capacity		data-element	link-capacity	3.4.14.3	link-capacity	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.10	Link Speed Limit - Link Inventory		data-element	link-speed-limit	3.4.14.32	link-speed-limit	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.11	Link Truck Speed Limit - Link Inventory		data-element	link-speed-limit	3.4.14.32	link-speed-limit-truck	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.12	Speed Limit Units - Link Inventory		data-element	link-speed-limit-units	3.4.14.33	link-speed-limit-units	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.13	Link Law Enforcement Jurisdiction		data-element	organization-resource-name	3.4.16.9	link-jurisdiction	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.14	Designated Owner		data-element	organization-resource-name	3.4.16.9	link-owner	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.15	Left Shoulder Width		data-element	link-shoulder-width	3.4.14.30	left-shoulder-width	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.16	Right Shoulder Width		data-element	link-shoulder-width	3.4.14.30	right-shoulder-width	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.1.5.2.17	Median Type		data-element	link-median-type	3.4.14.17	lane-separator	ASN:link-inventory-list XML:link-inventory-list/link

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.3.1.5.2.18	Link Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:link-inventory-list XML:link-inventory-list/link
3.3.4.3.2.1	Send Link Status Information Upon Request	2.4.1	dialog	dLinkStatusRequest	3.1.13.2	dLinkStatusRequest	
3.3.4.3.2.2	Publish Link Status Information	2.4.3	dialog	dLinkStatusUpdate	3.1.34.2	dLinkStatusUpdate	
3.3.4.3.2.3	Subscribe to Link Status Information	2.4.2	dialog	dITrafficNetworkInformationSubscription	3.1.19.1	dITrafficNetworkInformationSubscription	
3.3.4.3.2.4	Contents of the Link Status Request		message	trafficNetworkInformationRequestMsg	3.2.19.1	trafficNetworkInformationRequestMsg	
3.3.4.3.2.5	Contents of the Link Status Information		message	linkStatusMsg	3.2.13.2	linkStatusMsg	
3.3.4.3.2.5.1	Required Link Status Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:linkStatusMsg XML:link-status-item
3.3.4.3.2.5.1	Required Link Status Information Content		data-element	transportation-network-identifier	3.4.20.1	network-id	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.1	Required Link Status Information Content		data-element	transportation-network-identifier	3.4.20.1	link-id	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.1	Required Link Status Information Content		data-element	link-status	3.4.14.34	link-status	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.1	Restrictions - Link Status		data-frame	restrictions	3.3.16.5	restrictions	ASN:linkStatusMsg XML:link-status-item
3.3.4.3.2.5.2.2	Link Name - Link Status		data-element	transportation-network-name	3.4.21.1	link-name	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.3	Link Direction - Link Status		data-element	link-direction	3.4.14.9	link-direction	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.4	Lanes Open		data-element	link-lanes-count	3.4.14.12	lanes-number-open	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.5	Link Priority		data-element	link-priority-type	3.4.14.21	priority-type	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.6	Link Restrictions - Axles		data-element	link-restriction-axle-count	3.4.14.22	restriction-axle-count	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.7	Link Restrictions - Height		data-element	link-restriction-height	3.4.14.23	restriction-height	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.8	Link Restrictions - Length		data-element	link-restriction-length	3.4.14.24	restriction-length	ASN:link-status-list XML:link-status-list/link

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.3.2.5.2.9	Link Restrictions - Weight		data-element	link-restriction-weight-vehicle	3.4.14.27	restriction-weight	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.10	Link Restrictions - Width		data-element	link-restriction-width	3.4.14.28	restriction-width	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.11	Link Restrictions - Axle Weight		data-element	link-restriction-weight-axle	3.4.14.26	restriction-weight-axle	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.12	Link Restrictions Units		data-element	link-restriction-units	3.4.14.25	restriction-units	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.13	Link Surface Conditions		data-element	link-surface-condition	3.4.14.36	surface-condition	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.14	Link Saturation		data-element	link-oversaturated-flag	3.4.14.19	saturation-flag	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.15	Link Saturation Threshold		data-element	link-oversaturated-threshold	3.4.14.20	oversaturated-threshold	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.16	Link Level of Service		data-element	link-level-of-service	3.4.14.14	level-of-service	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.17	Lane Numbers		data-element	link-lane-number	3.4.14.11	lane-numbers	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.18	Link Data Stored Type		data-element	link-data-stored	3.4.14.5	link-data-stored	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.19	Roadway Event Source		data-element	event-detection-method	3.4.8.13	detection-method	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.20	Traffic Data Type		data-element	link-data-type	3.4.14.6	link-traffic-data-algorithm	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.21	Link Stops		data-element	link-stops	3.4.14.35	stops	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.22	Link Delay Time		data-element	link-delay	3.4.14.7	delay	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.23	Link Delay Time - Alternate Route		data-element	link-alternate-route-delay	3.4.14.2	alternate-route-delay	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.24	Link Headway		data-element	link-headway	3.4.14.10	headway	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.25	Link Travel Time		data-element	link-travel-time	3.4.14.37	travel-time	ASN:link-status-list XML:link-status-list/link

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.3.2.5.2.26	Link Existing Capacity		data-element	link-capacity-existing	3.4.14.4	capacity-existing	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.27	Link Travel Time Increase		data-element	link-travel-time-increase	3.4.14.38	travel-time-increase	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.28	Link Average Speed		data-element	link-speed-average	3.4.14.31	speed-average	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.29	Link Estimated Speed		data-element	event-speed-vehicle-estimated	3.4.8.44	speed-vehicle-estimated	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.30	Link Speed Limit - Link Status		data-element	link-speed-limit	3.4.14.32	speed-limit	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.31	Link Current Advisory Speed		data-element	link-speed-limit	3.4.14.32	advisory-speed-limit	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.32	Link Truck Speed Limit - Link Status		data-element	link-speed-limit	3.4.14.32	truck-speed-limit	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.33	Speed Limit Units - Link Status		data-element	link-speed-limit-units	3.4.14.33	speed-limit-units	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.34	Link Density		data-element	link-density	3.4.14.8	density	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.35	Link Occupancy		data-element	link-occupancy	3.4.14.18	occupancy	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.36	Link Volume		data-element	link-volume	3.4.14.40	volume	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.37	Event Description Time - Link Status		data-element	event-description-time	3.4.8.12	event-description-time	ASN:link-status-list XML:link-status-list/link
3.3.4.3.2.5.2.38	Link Status Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:link-status-list XML:link-status-list/link
3.3.4.4.1.1	Send Route Inventory Information Upon Request	2.4.1	dialog	dIRouteInventoryRequest	3.1.17.1	dIRouteInventoryRequest	
3.3.4.4.1.2	Publish Route Inventory Information	2.4.3	dialog	dIRouteInventoryUpdate	3.1.36.1	dIRouteInventoryUpdate	
3.3.4.4.1.3	Subscribe to Route Inventory Information	2.4.2	dialog	dITrafficNetworkInformationSubscription	3.1.19.1	dITrafficNetworkInformationSubscription	
3.3.4.4.1.4	Contents of the Route Inventory Request		message	trafficNetworkInformationRequestMsg	3.2.19.1	trafficNetworkInformationRequestMsg	
3.3.4.4.1.5	Contents of the Route Inventory Information		message	routeInventoryMsg	3.2.17.1	routeInventoryMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.4.1.5.1	Required Route Inventory Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:routeInventoryMsg XML:route-inventory-item
3.3.4.4.1.5.1	Required Route Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	network-id	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.1	Required Route Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	route-id	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.1	Required Route Inventory Information Content		data-element	transportation-network-identifier	3.4.20.1	route-link-id-list	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.1	Required Route Inventory Information Content		data-element	route-type	3.4.18.1	route-type	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.2.1	Restrictions - Route Inventory		data-frame	restrictions	3.3.16.5	restrictions	ASN:routeInventoryMsg XML:route-inventory-item
3.3.4.4.1.5.2.2	Roadway Network Name - Route Inventory		data-element	transportation-network-name	3.4.21.1	network-name	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.2.3	Route Name - Route Inventory		data-element	transportation-network-name	3.4.21.1	route-name	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.2.4	Alternate Route Names - Route Inventory		data-element	transportation-network-name	3.4.21.1	alternate-route-name-list	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.2.5	Route Length		data-element	link-length	3.4.14.13	route-length	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.2.6	Node List		data-element	transportation-network-identifier	3.4.20.1	route-node-id-list	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.2.7	Route Image URL		data-element	url-reference	3.4.10.5	route-url	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.1.5.2.8	Route Image URL Reference Medium		data-element	url-reference-type	3.4.10.6	url-reference-medium	route-url
3.3.4.4.1.5.2.9	Route Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:route-inventory-list XML:route-inventory-list/route
3.3.4.4.2.1	Send Route Status Information Upon Request	2.4.1	dialog	dIRouteStatusRequest	3.1.17.2	dIRouteStatusRequest	
3.3.4.4.2.2	Publish Route Status Information	2.4.3	dialog	dIRouteStatusUpdate	3.1.36.2	dIRouteStatusUpdate	
3.3.4.4.2.3	Subscribe to Route Status Information	2.4.2	dialog	dITrafficNetworkInformationSubscription	3.1.19.1	dITrafficNetworkInformationSubscription	
3.3.4.4.2.4	Contents of the Route Status Request		message	trafficNetworkInformationRequestMsg	3.2.19.1	trafficNetworkInformationRequestMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.4.2.5	Contents of the Route Status Information		message	routeStatusMsg	3.2.17.2	routeStatusMsg	
3.3.4.4.2.5.1	Required Route Status Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:routeStatusMsg XML:route-status-item
3.3.4.4.2.5.1	Required Route Status Information Content		data-element	transportation-network-identifier	3.4.20.1	network-id	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.1	Required Route Status Information Content		data-element	transportation-network-identifier	3.4.20.1	route-id	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.1	Required Route Status Information Content		data-element	link-status	3.4.14.34	route-status	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.1	Restrictions - Route Status		data-frame	restrictions	3.3.16.5	restrictions	ASN:routeStatusMsg XML:route-status-item
3.3.4.4.2.5.2.2	Route Name - Route Status		data-element	transportation-network-name	3.4.21.1	route-name	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.3	Route Detour Status Flag		data-element	binary-flag	3.4.10.1	detour-route-in-effect-flag	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.4	Route Surface Conditions		data-element	link-surface-condition	3.4.14.36	surface-condition	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.5	Route Existing Capacity		data-element	link-capacity	3.4.14.3	route-capacity	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.6	Route Level of Service		data-element	link-level-of-service	3.4.14.14	level-of-service	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.7	Route Saturation		data-element	link-oversaturated-flag	3.4.14.19	saturation-flag	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.8	Route Data Stored Type		data-element	link-data-stored	3.4.14.5	route-data-stored-type	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.9	Route Traffic Algorithm Data Type		data-element	link-data-type	3.4.14.6	route-traffic-data-algorithm	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.10	Route Delay Time		data-element	link-delay	3.4.14.7	delay	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.11	Route Delay Time - Alternate Route		data-element	link-alternate-route-delay	3.4.14.2	alternate-route-delay	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.12	Route Headway		data-element	link-headway	3.4.14.10	headway	ASN:route-status-list XML:route-status-list/route

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.4.4.2.5.2.13	Route Travel Time		data-element	link-travel-time	3.4.14.37	travel-time	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.14	Route Travel Time Increase		data-element	link-travel-time-increase	3.4.14.38	travel-time-increase	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.15	Route Volume		data-element	link-volume	3.4.14.40	volume	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.16	Route Average Speed		data-element	link-speed-average	3.4.14.31	speed-average	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.17	Route Density		data-element	link-density	3.4.14.8	density	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.18	Route Occupancy		data-element	link-occupancy	3.4.14.18	occupancy	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.19	Route Current Advisory Speed		data-element	link-speed-limit	3.4.14.32	current-speed-advisory	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.20	Speed Limit Units - Route Status		data-element	link-speed-limit-units	3.4.14.33	speed-limit-units	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.21	Event Description Time - Route Status		data-element	event-description-time	3.4.8.12	event-description-time	ASN:route-status-list XML:route-status-list/route
3.3.4.4.2.5.2.22	Route Status Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:route-status-list XML:route-status-list/route
3.3.5.1.1.1	Contents of Device Information Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.1.1.1.1	Required Device Information Request Content		data-frame	organizationInformation	3.3.16.3	organization-information	DeviceInformationRequest ¹
3.3.5.1.1.1.1	Required Device Information Request Content		data-element	device-type	3.4.5.15	device-type	DeviceInformationRequest ¹
3.3.5.1.1.1.1	Required Device Information Request Content		data-element	device-information-type	3.4.5.7	device-information-type	DeviceInformationRequest ¹

¹ DeviceInformationRequest is the data type (definition class name) being referenced. The instance name depends on the device information being request. Unless otherwise specified in this paragraph, the instance name is deviceInformationRequestMsg. For User Need 2.3.5.1.6 - Need for Detector Data Sharing, User Need 2.3.5.1.7 - Need for Detector History, User Need 2.3.6.1.4 - Need for Data Collection System Metadata, User Need 2.3.5.4.8 - Need to Share DMS Message Appearance, User Need 2.3.5.4.9 - Need to Share DMS Message Inventory, User Need 2.3.5.4.10 - Need to Share DMS Font Table, and User Need 2.3.5.10.8 - Need to Share Controller Timing Patterns, the instance name is device-information-request-header.

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.1.1.1.2.1	Authentication - Device Information		data-frame	authentication	3.3.3.1	authentication	DeviceInformationRequest ¹
3.3.5.1.1.1.2.1.1	Operator Identifier - Device Information		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.5.1.1.1.2.2	External Center Organization - Device Information		data-frame	organizationInformation	3.3.16.3	organization-requesting	DeviceInformationRequest ¹
3.3.5.1.1.1.3.1	Device Identifier Filter		data-element	organization-resource-identifier	3.4.16.8	device-id-list	device-filter
3.3.5.1.1.1.3.2	Roadway Network Identifier Filter		data-element	transportation-network-identifier	3.4.20.1	network-id-list	device-filter
3.3.5.1.1.1.3.3	Link Identifier Filter		data-element	transportation-network-identifier	3.4.20.1	link-id-list	device-filter
3.3.5.1.1.1.3.4	Route Designator Filter		data-element	link-route-designator	3.4.14.29	link-designator-list	device-filter
3.3.5.1.1.1.3.5	Linear Reference Filter		data-element	link-location-linear-reference	3.4.14.15	linear-reference	device-filter
3.3.5.1.1.1.3.6	Section Identifier Filter		data-element	organization-resource-identifier	3.4.16.8	section-id-list	device-filter
3.3.5.1.1.1.3.7	Pattern Identifier Filter		data-element	organization-resource-identifier	3.4.16.8	pattern-id-list	device-filter
3.3.5.1.2.1	Contents of the Device Inventory Header		data-frame	deviceInventoryHeader	3.3.5.8	DeviceInventoryHeader	
3.3.5.1.2.1.1	Required Device Inventory Content		data-frame	organizationInformation	3.3.16.3	organization-information	DeviceInventoryHeader ²
3.3.5.1.2.1.1	Required Device Inventory Content		data-element	organization-resource-identifier	3.4.16.8	device-id	DeviceInventoryHeader ²
3.3.5.1.2.1.1	Required Device Inventory Content		data-frame	geoLocation	3.6.9.4	device-location	DeviceInventoryHeader ²
3.3.5.1.2.1.1	Required Device Inventory Content		data-element	organization-resource-name	3.4.16.9	device-name	DeviceInventoryHeader ²
3.3.5.1.2.1.2.1	Restrictions - Device Inventory		data-frame	restrictions	3.3.16.5	restrictions	DeviceInventoryHeader ²
3.3.5.1.2.1.2.2	Device Description		data-element	organization-resource-name	3.4.16.9	device-description	DeviceInventoryHeader ²
3.3.5.1.2.1.2.3	Device Control Type		data-element	device-control-type	3.4.5.5	device-control-type	DeviceInventoryHeader ²
3.3.5.1.2.1.2.4	Controller Description		data-element	organization-resource-name	3.4.16.9	controller-description	DeviceInventoryHeader ²
3.3.5.1.2.1.2.5	Roadway Network Identifier - Device Inventory		data-element	transportation-network-identifier	3.4.20.1	network-id	DeviceInventoryHeader ²
3.3.5.1.2.1.2.6	Node Identifier - Device Inventory		data-element	transportation-network-identifier	3.4.20.1	node-id	DeviceInventoryHeader ²

² DeviceInventoryHeader is the data type (definition class name) being referenced. The instance name depends on the device inventory message being transmitted. For CCTVs, Dynamic Message Signs, Environmental Sensor Stations, Highway Advisory Radios, Lane Closure Gates, Lane Control Signals, Ramp Meters (Controller), Traffic Signal Controllers and Video Switches, the instance name is device-inventory-header. For Detector Stations, the instance name is detector-station-inventory-header, while for individual Traffic Detectors, the instance name is detector-inventory-header. For individual Environmental Sensors, the instance name is ess-sensor-inventory-header. For individual ramp meter lanes, the instance name is metered-lane-inventory-header.

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.1.2.1.2.7	Node Name - Device Inventory		data-element	transportation-network-name	3.4.21.1	node-name	DeviceInventoryHeader ²
3.3.5.1.2.1.2.8	Link Identifier - Device Inventory		data-element	transportation-network-identifier	3.4.20.1	link-id	DeviceInventoryHeader ²
3.3.5.1.2.1.2.9	Link Name - Device Inventory		data-element	transportation-network-name	3.4.21.1	link-name	DeviceInventoryHeader ²
3.3.5.1.2.1.2.10	Link Direction - Device Inventory		data-element	link-direction	3.4.14.9	link-direction	DeviceInventoryHeader ²
3.3.5.1.2.1.2.11	Linear Reference - Device Inventory		data-element	link-location-linear-reference	3.4.14.15	linear-reference	DeviceInventoryHeader ²
3.3.5.1.2.1.2.12	Linear Reference Version		data-element	link-location-linear-reference-version	3.4.14.16	linear-reference-version	DeviceInventoryHeader ²
3.3.5.1.2.1.2.13	Route Designator - Device Inventory		data-element	link-route-designator	3.4.14.29	route-designator	DeviceInventoryHeader ²
3.3.5.1.2.1.2.14	Device Uniform Resource Locator (URL)		data-element	url-reference	3.4.10.5	device-url	DeviceInventoryHeader ²
3.3.5.1.2.1.2.15	Device URL Reference Medium		data-element	url-reference-type	3.4.10.6	url-reference-medium	device-url
3.3.5.1.2.1.2.16	Device Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	DeviceInventoryHeader ²
3.3.5.1.3.1	Contents of the Device Status Header		data-frame	deviceStatusHeader	3.3.5.13	DeviceStatusHeader	
3.3.5.1.3.1.1	Required Device Status Header Content		data-frame	organizationInformation	3.3.16.3	organization-information	DeviceStatusHeader ³
3.3.5.1.3.1.1	Required Device Status Header Content		data-element	organization-resource-identifier	3.4.16.8	device-id	DeviceStatusHeader ³
3.3.5.1.3.1.1	Required Device Status Header Content		data-element	device-operational-status	3.4.5.11	device-status	DeviceStatusHeader ³
3.3.5.1.3.1.2.1	Restrictions - Device Status		data-frame	restrictions	3.3.16.5	restrictions	DeviceStatusHeader ³
3.3.5.1.3.1.2.2	Unique Identifier of the Controlling Center		data-element	organization-resource-identifier	3.4.16.8	center-id	DeviceStatusHeader ³
3.3.5.1.3.1.2.3	Device Communications Status		data-element	device-communications-status	3.4.5.4	device-comm-status	DeviceStatusHeader ³
3.3.5.1.3.1.2.4	Operator Identifier - Device Status		data-element	organization-resource-identifier	3.4.16.8	operator-id	DeviceStatusHeader ³
3.3.5.1.3.1.2.5	Event Identifier - Device Status		data-element	organization-resource-identifier	3.4.16.8	event-id	DeviceStatusHeader ³
3.3.5.1.3.1.2.6	Event Response Plan - Device Status		data-element	organization-resource-identifier	3.4.16.8	response-plan-id	DeviceStatusHeader ³

³ DeviceStatusHeader is the data type (definition class name) being referenced. The instance name depends on the device status message being transmitted. For CCTVs, Dynamic Message Signs, individual Environmental Sensors, Highway Advisory Radios, Lane Closure Gates, Lane Control Signals, Ramp Meters (Controller), Traffic Signal Controllers and Video Switches, the instance name is device-status-header. For Detector Stations, the instance name is detector-station-status-header, while for individual Traffic Detectors, the instance name is detector-status-header. For Environmental Sensor Stations, the instance name is ess-station-status-header. For individual ramp meter lanes, the instance name is metered-lane-status-header.

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.1.3.1.2.7	Device Status Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-comm-time	DeviceStatusHeader ³
3.3.5.1.4.1	Contents of Device Control Request Header		data-frame	deviceControlRequestHeader	3.3.5.2	device-control-request-header	
3.3.5.1.4.1.1	Required Device Control Request Header Content		data-frame	authentication	3.3.3.1	authentication	device-control-request-header ⁴
3.3.5.1.4.1.1	Required Device Control Request Header Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	device-control-request-header ⁴
3.3.5.1.4.1.1	Required Device Control Request Header Content		data-element	organization-resource-identifier	3.4.16.8	device-id	device-control-request-header ⁴
3.3.5.1.4.1.1	Required Device Control Request Header Content		data-element	organization-resource-identifier	3.4.16.8	request-id	device-control-request-header ⁴
3.3.5.1.4.1.2.1	Operator Identifier - Device Control		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.5.1.4.1.2.2	Event Identifier - Device Control		data-element	organization-resource-identifier	3.4.16.8	event-id	device-control-request-header ⁴
3.3.5.1.4.1.2.3	Event Response Plan - Device Control		data-element	organization-resource-identifier	3.4.16.8	response-plan-id	device-control-request-header ⁴
3.3.5.1.4.1.2.4	Request Priority - Device Control		data-element	device-command-request-priority	3.4.5.3	command-request-priority	device-control-request-header ⁴
3.3.5.1.4.1.2.5	Control Request Start Date and Time		data-frame	dateTimeZone	3.3.10.1	command-start-time	device-control-request-header ⁴
3.3.5.1.4.1.2.6	Control Request Expiration Date and Time		data-frame	dateTimeZone	3.3.10.1	command-end-time	device-control-request-header ⁴
3.3.5.1.4.1.2.7	Control Request Date and Time Information		data-frame	dateTimeZone	3.3.10.1	command-request-time	device-control-request-header ⁴
3.3.5.1.4.2	Contents of Device Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.1.4.2.1	Required Device Control Response Content		data-frame	organizationInformation	3.3.16.3	organization-information	DeviceControlResponse ⁵
3.3.5.1.4.2.1	Required Device Control Response Content		data-element	organization-resource-identifier	3.4.16.8	device-id	DeviceControlResponse ⁵

⁴ device-control-request-header is the instance name. The parent data concept that calls device-control-request-header will be the control request message for any one of the following devices: CCTVs, Dynamic Message Signs, Highway Advisory Radios, Lane Closure Gates, Lane Control Signals, Ramp Meters, Traffic Signal Controllers, or Video Switches.

⁵ DeviceControlResponse is the data type (definition class name) being referenced. The instance name depends on the device control response message being transmitted. Unless otherwise specified in this paragraph, the instance name is deviceControlResponseMsg. For User Need 2.3.5.10.4, Need to Control a Remote Traffic Signal Controller, the instance name is device-control-response-header

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.1.4.2.1	Required Device Control Response Content		data-element	organization-resource-identifier	3.4.16.8	request-id	DeviceControlResponse ⁵
3.3.5.1.4.2.1	Required Device Control Response Content		data-element	device-acknowledge-control	3.4.5.1	request-status	DeviceControlResponse ⁵
3.3.5.1.4.2.2.1	Operator Identifier - Device Control Acknowledge		data-element	organization-resource-identifier	3.4.16.8	operator-id	DeviceControlResponse ⁵
3.3.5.1.4.2.2.2	Operator Lock Identifier		data-element	organization-resource-identifier	3.4.16.8	operator-lock-id	DeviceControlResponse ⁵
3.3.5.1.4.2.2.3	Operator Last Revised Date and Time - Device Control		data-element	organization-resource-name	3.4.16.9	operator-last-revised	DeviceControlResponse ⁵
3.3.5.1.5.1	Send Device Control Status Upon Request	2.4.1	dialog	dIDeviceControlStatusRequest	3.1.5.2	dIDeviceControlStatusRequest	
3.3.5.1.5.2	Contents of the Device Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.1.5.2.1	Required Device Control Status Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	deviceControlStatusRequestMsg
3.3.5.1.5.2.1	Required Device Control Status Request Content		data-element	organization-resource-identifier	3.4.16.8	device-id	deviceControlStatusRequestMsg
3.3.5.1.5.2.1	Required Device Control Status Request Content		data-element	organization-resource-identifier	3.4.16.8	request-id	deviceControlStatusRequestMsg
3.3.5.1.5.2.2.1	Authentication - Device Control Status		data-frame	authentication	3.3.3.1	authentication	deviceControlStatusRequestMsg
3.3.5.1.5.2.2.1.1	Operator Identifier - Device Control Status		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.5.1.5.3	Contents of Device Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.1.6.1	Send Cancel Control Response Upon Request	2.4.1	dialog	dIDeviceCancelControlRequest	3.1.5.1	dIDeviceCancelControlRequest	
3.3.5.1.6.2	Contents of Cancel Device Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.1.6.2.1	Required Cancel Device Control Request Content		data-frame	authentication	3.3.3.1	authentication	deviceCancelControlRequestMsg
3.3.5.1.6.2.1	Required Cancel Device Control Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	deviceCancelControlRequestMsg
3.3.5.1.6.2.1	Required Cancel Device Control Request Content		data-element	organization-resource-identifier	3.4.16.8	device-id	deviceCancelControlRequestMsg
3.3.5.1.6.2.1	Required Cancel Device Control Request Content		data-element	organization-resource-identifier	3.4.16.8	request-id	deviceCancelControlRequestMsg
3.3.5.1.6.2.2.1	Operator Identifier - Cancel Device Control		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.1.6.3	Contents of Cancel Device Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.1.7.1	Contents of the Device Priority Queue Request		message	devicePriorityQueueRequestMsg	3.2.5.5	devicePriorityQueueRequestMsg	
3.3.5.1.7.1.1	Required Device Priority Queue Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	devicePriorityQueueRequestMsg
3.3.5.1.7.1.1	Required Device Priority Queue Request Content		data-element	organization-resource-identifier	3.4.16.8	device-id-list	devicePriorityQueueRequestMsg
3.3.5.1.7.1.2.1	Authentication - Device Queue		data-frame	authentication	3.3.3.1	authentication	devicePriorityQueueRequestMsg
3.3.5.1.7.1.2.1.1	Operator Identifier - Device Queue		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.5.1.7.2	Contents of Device Priority Queue Header		data-frame	devicePriorityQueueHeader	3.3.5.9	DevicePriorityQueueHeader	
3.3.5.1.7.2.1	Required Device Priority Queue Header Content		data-element	organization-resource-identifier	3.4.16.8	device-id	device-priority-queue-header ⁶
3.3.5.1.7.2.1	Required Device Priority Queue Header Content		data-element	device-type	3.4.5.15	device-type	device-priority-queue-header ⁶
3.3.5.1.7.2.1	Required Device Priority Queue Header Content		data-element	device-command-request-priority	3.4.5.3	current-device-priority	device-priority-queue-header ⁶
3.3.5.1.7.2.1	Required Device Priority Queue Header Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	ASN:device-priority-queue-list XML:device-priority-queue-item
3.3.5.1.7.2.1	Required Device Priority Queue Header Content		data-element	device-command-request-priority	3.4.5.3	command-request-priority	ASN:device-priority-queue-list XML:device-priority-queue-item
3.3.5.1.7.2.2.1	Restrictions - Device Queue		data-frame	restrictions	3.3.16.5	restrictions	device-priority-queue-header ⁴
3.3.5.1.7.2.2.2	Operator Identifier - Device Queue Acknowledge		data-element	organization-resource-identifier	3.4.16.8	operator-id	ASN:device-priority-queue-list XML:device-priority-queue-item
3.3.5.1.7.2.2.3	Unique Sequence Number		data-element	organization-resource-identifier	3.4.16.8	request-id	ASN:device-priority-queue-list XML:device-priority-queue-item
3.3.5.1.7.2.2.4	Event Identifier - Device Queue		data-element	organization-resource-identifier	3.4.16.8	event-id	ASN:device-priority-queue-list XML:device-priority-queue-item
3.3.5.1.7.2.2.5	Event Response Plan - Device Queue		data-element	organization-resource-identifier	3.4.16.8	response-plan-id	ASN:device-priority-queue-list XML:device-priority-queue-item

⁶ device-priority-queue-header is the instance name. The parent data concept that calls device-priority-queue-header will be the priority queue response message for any one of the following devices: Dynamic Message Signs, Highway Advisory Radios, Ramp Meters, Signal Sections, Traffic Signal Controllers or Video Switches.

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.1.7.2.2.6	Request Start Date and Time - Device Queue		data-frame	dateTimeZone	3.3.10.1	command-start-time	ASN:device-priority-queue-list XML:device-priority-queue-item
3.3.5.1.7.2.2.7	Request Expiration Date and Time - Device Queue		data-frame	dateTimeZone	3.3.10.1	command-end-time	ASN:device-priority-queue-list XML:device-priority-queue-item
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	organization-resource-identifier	3.4.16.8	device-id	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	timeBaseScheduleNumber	3.6.6.1	time-base-schedule-number	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	timeBaseScheduleMonth	3.6.6.2	time-base-schedule-month	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	timeBaseScheduleDay	3.6.6.3	time-base-schedule-day	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	timeBaseScheduleDate	3.6.6.4	time-base-schedule-date	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	timeBaseScheduleDayPlan	3.6.6.5	time-base-schedule-day-plan	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	dayPlanHour	3.6.6.6	day-plan-hour	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-element	dayPlanMinute	3.6.6.7	day-plan-minute	device-control-schedule-header ⁷
3.3.5.1.8.1.1	Required Device Schedule Information Content		data-frame	dateTimeZone	3.3.10.1	last-update-time	device-control-schedule-header ⁷
3.3.5.1.8.1.2.1	Restrictions - Device Schedule		data-frame	restrictions	3.3.16.5	restrictions	device-control-schedule-header ⁷
3.3.5.2.1.1	Send Detector Inventory Information Upon Request	2.4.1	dialog	dIDetectorInventoryRequest	3.1.4.1	dIDetectorInventoryRequest	
3.3.5.2.1.2	Publish Detector Inventory Information	2.4.3	dialog	dIDetectorInventoryUpdate	3.1.23.1	dIDetectorInventoryUpdate	
3.3.5.2.1.3	Subscribe to Detector Inventory Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.2.1.4	Contents of the Detector Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	

⁷ device-control-schedule-header is the instance name. The parent data concept that calls device-control-schedule-header will be the device schedule information message for any one of the following devices: Highway Advisory Radios, Lane Closure Gates, Lane Control Signals, Ramp Meters, or Traffic Signal Controllers.

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.2.1.5	Contents of the Detector Inventory Information		message	detectorInventoryMsg	3.2.4.3	detectorInventoryMsg	
3.3.5.2.1.5.1	Required Detector Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	detector-inventory-header	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.1	Required Detector Inventory Content		data-element	detector-type	3.4.4.3	detector-type	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.1	Detector Station Inventory Information		data-frame	deviceInventoryHeader	3.3.5.8	detector-station-inventory-header	ASN:detectorInventoryMsg XML:detector-inventory-item
3.3.5.2.1.5.2.2	Lane Number - Detector Inventory		data-element	link-lane-number	3.4.14.11	detection-lanes	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.3	Speed Trap Flag		data-element	binary-flag	3.4.10.1	is-detector-speed-trap-flag	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.4	Vehicle Bin 1		data-element	detector-bin-length	3.4.4.1	vehicle-classification-bin1	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.5	Vehicle Bin 2		data-element	detector-bin-length	3.4.4.1	vehicle-classification-bin2	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.6	Vehicle Bin 3		data-element	detector-bin-length	3.4.4.1	vehicle-classification-bin3	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.7	Vehicle Bin 4		data-element	detector-bin-length	3.4.4.1	vehicle-classification-bin4	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.8	Vehicle Bin 5		data-element	detector-bin-length	3.4.4.1	vehicle-classification-bin5	ASN:detector-inventory-list XML:detector
3.3.5.2.1.5.2.9	Vehicle Bin 6		data-element	detector-bin-length	3.4.4.1	vehicle-classification-bin6	ASN:detector-inventory-list XML:detector
3.3.5.2.2.1	Send Detector Status Information Upon Request	2.4.1	dialog	dIDetectorStatusRequest	3.1.4.2	dIDetectorStatusRequest	
3.3.5.2.2.2	Publish Detector Status Information	2.4.3	dialog	dIDetectorStatusUpdate	3.1.23.2	dIDetectorStatusUpdate	
3.3.5.2.2.3	Subscribe to Detector Status Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.2.2.4	Contents of the Detector Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.2.2.5	Contents of the Detector Status Information		message	detectorStatusMsg	3.2.4.6	detectorStatusMsg	
3.3.5.2.2.5.1	Required Detector Status Content		data-frame	deviceStatusHeader	3.3.5.13	detector-status-header	ASN:detector-status-list XML:detector

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.2.2.5.2.1	Detector Station Status Information		data-frame	deviceStatusHeader	3.3.5.13	detector-station-status-header	ASN:detectorStatusMsg XML:detector-status-item
3.3.5.2.2.5.2.2	Lane Number - Detector Status		data-element	link-lane-number	3.4.14.11	detector-lane-number	ASN:detector-status-list XML:detector
3.3.5.2.2.5.2.3	Direction of Travel - Detector Status		data-element	link-direction	3.4.14.9	lane-direction	ASN:detector-status-list XML:detector
3.3.5.2.2.5.2.4	Detection Zone Output Mode		data-element	sensorZoneOutputMode	3.6.2.1	detector-outputmode	ASN:detector-status-list XML:detector
3.3.5.2.3.1	Send Detector Data Upon Request	2.4.1	dialog	dIDetectorDataRequest	3.1.4.3	dIDetectorDataRequest	
3.3.5.2.3.2	Publish Detector Data	2.4.3	dialog	dIDetectorDataUpdate	3.1.23.3	dIDetectorDataUpdate	
3.3.5.2.3.3	Subscribe to Detector Data Information	2.4.2	dialog	dIDetectorDataSubscription	3.1.4.4	dIDetectorDataSubscription	
3.3.5.2.3.4	Contents of the Detector Data Request		message	detectorDataRequestMsg	3.2.4.2	detectorDataRequestMsg	
3.3.5.2.3.4.1	Required Detector Data Request Content		data-frame	deviceInformationRequest	3.3.5.6	device-information-request-header	detectorDataRequestMsg
3.3.5.2.3.4.2.1	Detector Station - Data Request		data-element	organization-resource-identifier	3.4.16.8	detector-station-id	detectorDataRequestMsg
3.3.5.2.3.4.2.2	Data Type Request		data-element	device-sensor-data-type	3.4.5.14	detector-data-type	detectorDataRequestMsg
3.3.5.2.3.5	Contents of the Detector Data Information		message	detectorDataMsg	3.2.4.1	detectorDataMsg	
3.3.5.2.3.5.1	Required Detector Data Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:detectorDataMsg XML:detector-data-item
3.3.5.2.3.5.1	Required Detector Data Content		data-element	organization-resource-identifier	3.4.16.8	detector-id	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.1	Required Detector Data Content		data-frame	dateTimeZone	3.3.10.1	detection-time-stamp	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.1	Restrictions - Detector Data		data-frame	restrictions	3.3.16.5	restrictions	ASN:detectorDataMsg XML:detector-data-item
3.3.5.2.3.5.2.2	Detector Station - Detector Data		data-element	organization-resource-identifier	3.4.16.8	station-id	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.3	Vehicle Count		data-element	detector-vehicle-count	3.4.4.4	vehicle-count	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.4	Average Vehicle Occupancy		data-element	detector-occupancy	3.4.4.2	vehicle-occupancy	ASN:detector-data-list XML:detector-data-detail

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.2.3.5.2.5	Data Collection Start		data-frame	dateTimeZone	3.3.10.1	start-time	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.6	Data Collection End		data-frame	dateTimeZone	3.3.10.1	end-time	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.7	Data Type		data-element	link-data-type	3.4.14.6	detector-data-type	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.8	Average Vehicle Speed		data-element	detector-vehicle-speed	3.4.4.6	vehicle-speed	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.9	Average Vehicle Queue		data-element	detector-vehicle-queue-length	3.4.4.5	queue-length	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.10	Vehicle Stops		data-element	detector-vehicle-stops	3.4.4.7	vehicle-stops	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.11	Vehicle Count - Bin 1		data-element	detector-vehicle-count	3.4.4.4	vehicle-count-bin1	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.12	Vehicle Count - Bin 2		data-element	detector-vehicle-count	3.4.4.4	vehicle-count-bin2	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.13	Vehicle Count - Bin 3		data-element	detector-vehicle-count	3.4.4.4	vehicle-count-bin3	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.14	Vehicle Count - Bin 4		data-element	detector-vehicle-count	3.4.4.4	vehicle-count-bin4	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.15	Vehicle Count - Bin 5		data-element	detector-vehicle-count	3.4.4.4	vehicle-count-bin5	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.16	Vehicle Count - Bin 6		data-element	detector-vehicle-count	3.4.4.4	vehicle-count-bin6	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.3.5.2.17	Vehicle Count - Bin 7		data-element	detector-vehicle-count	3.4.4.4	vehicle-count-bin7	ASN:detector-data-list XML:detector-data-detail
3.3.5.2.4.1	Send Detector Maintenance History Information Upon Request	2.4.1	dialog	dIDetectorMaintenanceHistoryRequest	3.1.4.5	dIDetectorMaintenanceHistoryRequest	
3.3.5.2.4.2	Contents of the Detector Maintenance History Request		message	detectorMaintenanceHistoryRequestMsg	3.2.4.5	detectorMaintenanceHistoryRequestMsg	
3.3.5.2.4.2.1	Required Detector Maintenance History Request Content		data-frame	deviceInformationRequest	3.3.5.6	device-information-request-header	detectorMaintenanceHistoryRequestMsg
3.3.5.2.4.2.2.1	Detector Station - Detector History Request		data-element	organization-resource-identifier	3.4.16.8	detector-station-id	detectorMaintenanceHistoryRequestMsg
3.3.5.2.4.3	Contents of Detector Maintenance History Information		message	detectorMaintenanceHistoryMsg	3.2.4.4	detectorMaintenanceHistoryMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.2.4.3.1	Required Detector Maintenance History Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:detectorMaintenanceHistoryMsg XML:detector-maintenance-history-item
3.3.5.2.4.3.1	Required Detector Maintenance History Content		data-element	organization-resource-identifier	3.4.16.8	detector-id	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.1	Restrictions - Detector History		data-frame	restrictions	3.3.16.5	restrictions	ASN:detectorMaintenanceHistoryMsg XML:detector-maintenance-history-item
3.3.5.2.4.3.2.2	Detector Station - Detector History		data-element	organization-resource-identifier	3.4.16.8	station-id	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.3	Detector Type		data-element	detector-type	3.4.4.3	detector-type	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.4	Installation Date and Time		data-frame	dateTimeZone	3.3.10.1	detector-installation-date	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.5	Detector Calibration Date and Time		data-frame	dateTimeZone	3.3.10.1	detector-calibration-date	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.6	Detector Calibration Method		data-element	organization-resource-name	3.4.16.9	detector-calibration-method	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.7	Operational Date and Time		data-frame	dateTimeZone	3.3.10.1	detector-last-operational-date	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.8	Non-Operational Date and Time		data-frame	dateTimeZone	3.3.10.1	detector-last-non-operational-date	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.9	Description of Repair		data-element	event-description-notes-and-comments	3.4.8.10	detector-repair-description	ASN:detector-history-list XML:detector
3.3.5.2.4.3.2.10	History Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:detector-history-list XML:detector
3.3.5.3.1.1	Send CCTV Inventory Information Upon Request	2.4.1	dialog	dlCCTVInventoryRequest	3.1.2.1	dlCCTVInventoryRequest	
3.3.5.3.1.2	Publish CCTV Inventory Information	2.4.3	dialog	dlCCTVInventoryUpdate	3.1.21.1	dlCCTVInventoryUpdate	
3.3.5.3.1.3	Subscribe to CCTV Inventory Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.3.1.4	Contents of the CCTV Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.3.1.5	Contents of the CCTV Inventory Information		message	cCTVInventoryMsg	3.2.2.2	cCTVInventoryMsg	
3.3.5.3.1.5.1	Required CCTV Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.1	Required CCTV Inventory Content		data-element	cctv-request-command	3.4.2.3	cctv-requests-supported-list	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.1	Required CCTV Inventory Content		data-element	cctv-image-supported	3.4.2.2	cctv-image-list	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.1	Text Insertion - CCTV Inventory		data-element	cctv-titling-text	3.4.2.4	cctv-titling-text	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.2	Camera Type		data-element	cctv-camera-type	3.4.2.1	cctv-camera-type	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.3	Camera Pan Left Limit		data-element	rangePanLeftLimit	3.6.1.1	cctv-camera-pan-left-limit	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.4	Camera Pan Right Limit		data-element	rangePanRightLimit	3.6.1.2	cctv-camera-pan-right-limit	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.5	Camera Tilt Up Limit		data-element	rangeTiltUpLimit	3.6.1.3	cctv-camera-tilt-up-limit	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.6	Camera Tilt Down Limit		data-element	rangeTiltDownLimit	3.6.1.4	cctv-camera-tilt-down-limit	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.7	Camera Zoom Limit		data-element	rangeZoomLimit	3.6.1.5	cctv-camera-zoom-limit	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.8	Camera Focus Limit		data-element	rangeFocusLimit	3.6.1.6	cctv-camera-focus-limit	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.9	Camera Iris Limit		data-element	rangeIrisLimit	3.6.1.7	cctv-camera-iris-limit	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.1.5.2.10	Camera Environmental Features		data-element	systemCameraEquipped	3.6.1.14	cctv-camera-environmental	ASN:cCTVInventoryMsg XML:cctv-inventory-item
3.3.5.3.2.1	Send CCTV Status Information Upon Request	2.4.1	dialog	dlCCTVStatusRequest	3.1.2.2	dlCCTVStatusRequest	
3.3.5.3.2.2	Publish CCTV Status Information	2.4.3	dialog	dlCCTVStatusUpdate	3.1.21.2	dlCCTVStatusUpdate	
3.3.5.3.2.3	Subscribe to CCTV Status Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.3.2.4	Contents of the CCTV Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.3.2.5	Contents of the CCTV Status Information		message	cCTVStatusMsg	3.2.2.3	cCTVStatusMsg	
3.3.5.3.2.5.1	Required CCTV Status Content		data-frame	deviceStatusHeader	3.3.5.13	device-status-header	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.1	CCTV Error		data-element	device-error	3.4.5.6	cctv-error	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.2	CCTV Format		data-element	cctv-image-supported	3.4.2.2	cctv-image-list	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.3	CCTV Preset Position		data-element	presetGotoPosition	3.6.1.8	cctv-position-preset	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.4	CCTV Pan Position		data-element	positionPan	3.6.1.12	cctv-position-pan	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.5	CCTV Tilt Position		data-element	positionTilt	3.6.1.11	cctv-position-tilt	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.6	CCTV Zoom Position		data-element	positionZoomLens	3.6.1.13	cctv-position-zoom-lens	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.7	CCTV Iris Position		data-element	positionIrisLens	3.6.1.10	cctv-position-iris-lens	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.8	CCTV Focus Position		data-element	positionFocusLens	3.6.1.9	cctv-position-focus-lens	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.2.5.2.9	Camera Environmental Features Status		data-element	systemCameraFeatureStatus	3.6.1.16	cctv-environmental-status	ASN:cCTVStatusMsg XML:cctv-status-item
3.3.5.3.3.1	Send CCTV Control Response Upon Request	2.4.1	dialog	dlCCTVControlRequest	3.1.2.3	dlCCTVControlRequest	
3.3.5.3.3.2	Contents of CCTV Control Request		message	cCTVControlRequestMsg	3.2.2.1	cCTVControlRequestMsg	
3.3.5.3.3.3	Contents of CCTV Control Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.3.4.1	Send CCTV Control Status Upon Request	2.4.1	dialog	dlDeviceControlStatusRequest	3.1.5.2	dlDeviceControlStatusRequest	
3.3.5.3.4.2	Contents of the CCTV Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.3.4.3	Contents of the CCTV Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.3.5.1	Send Cancel CCTV Control Response Upon Request	2.4.1	dialog	dlDeviceCancelControlRequest	3.1.5.1	dlDeviceCancelControlRequest	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.3.5.2	Contents of Cancel CCTV Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.3.5.3	Contents of Cancel CCTV Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.4.1.1	Send Video Switch Inventory Information Upon Request	2.4.1	dialog	dlVideoSwitchInventoryRequest	3.1.20.1	dlVideoSwitchInventoryRequest	
3.3.5.4.1.2	Publish Video Switch Inventory Information	2.4.3	dialog	dlVideoSwitchInventoryUpdate	3.1.37.1	dlVideoSwitchInventoryUpdate	
3.3.5.4.1.3	Subscribe to Video Switch Inventory Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.4.1.4	Contents of the Video Switch Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.4.1.5	Contents of the Video Switch Inventory Information		message	videoSwitchInventoryMsg	3.2.20.2	videoSwitchInventoryMsg	
3.3.5.4.1.5.1	Required Video Switch Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:videoSwitchInventoryMsg XML:video-switch-inventory-item
3.3.5.4.1.5.1	Required Video Switch Inventory Content		data-frame	vSVideoChannelData	3.3.21.5	input-channel-list	ASN:videoSwitchInventoryMsg XML:video-switch-inventory-item
3.3.5.4.1.5.1	Required Video Switch Inventory Content		data-frame	vSVideoChannelData	3.3.21.5	output-channel-list	ASN:videoSwitchInventoryMsg XML:video-switch-inventory-item
3.3.5.4.1.5.2.1	Total Input Channels		data-element	vS-channel-count	3.4.22.1	input-channel-count	ASN:videoSwitchInventoryMsg XML:video-switch-inventory-item
3.3.5.4.1.5.2.2	Total Output Channels		data-element	vS-channel-count	3.4.22.1	output-channel-count	ASN:videoSwitchInventoryMsg XML:video-switch-inventory-item
3.3.5.4.1.5.2.3	Request Type		data-element	vS-request-supported-type	3.4.22.4	request-supported-type	ASN:videoSwitchInventoryMsg XML:video-switch-inventory-item
3.3.5.4.2.1	Send Video Switch Status Information Upon Request	2.4.1	dialog	dlVideoSwitchStatusRequest	3.1.20.2	dlVideoSwitchStatusRequest	
3.3.5.4.2.2	Publish Video Switch Status Information	2.4.3	dialog	dlVideoSwitchStatusUpdate	3.1.37.2	dlVideoSwitchStatusUpdate	
3.3.5.4.2.3	Subscribe to Video Switch Status Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.4.2.4	Contents of the Video Switch Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.4.2.5	Contents of the Video Switch Status Information		message	videoSwitchStatusMsg	3.2.20.3	videoSwitchStatusMsg	
3.3.5.4.2.5.1	Required Video Switch Status Content		data-frame	deviceStatusHeader	3.3.5.13	device-status-header	ASN:videoSwitchStatusMsg XML:video-switch-status-item
3.3.5.4.2.5.1	Required Video Switch Status Content		data-element	organization-resource-identifier	3.4.16.8	input-channel-id	ASN:switched-channel-list XML:switched-channel
3.3.5.4.2.5.1	Required Video Switch Status Content		data-element	organization-resource-identifier	3.4.16.8	output-channel-id	ASN:switched-channel-list XML:switched-channel
3.3.5.4.2.5.2.1	Text Insertion - Video Switch Status		data-element	cctv-titling-text	3.4.2.4	channel-titling-text	ASN:switched-channel-list XML:switched-channel
3.3.5.4.3.1	Send Video Switch Control Response Upon Request	2.4.1	dialog	dlVideoSwitchControlRequest	3.1.20.3	dlVideoSwitchControlRequest	
3.3.5.4.3.2	Contents of Video Switch Control Request		message	videoSwitchControlRequestMsg	3.2.20.1	videoSwitchControlRequestMsg	
3.3.5.4.3.2.1	Required Video Switch Control Request Content		data-frame	deviceControlRequestHeader	3.3.5.2	device-control-request-header	videoSwitchControlRequestMsg
3.3.5.4.3.2.1	Required Video Switch Control Request Content		data-element	organization-resource-identifier	3.4.16.8	input-channel-id	videoSwitchControlRequestMsg
3.3.5.4.3.2.1	Required Video Switch Control Request Content		data-element	organization-resource-identifier	3.4.16.8	output-channel-id	videoSwitchControlRequestMsg
3.3.5.4.3.2.2.1	Text Insertion - Video Switch Control		data-element	cctv-titling-text	3.4.2.4	channel-titling-text	videoSwitchControlRequestMsg
3.3.5.4.3.2.2.2	Output Channel Lock		data-element	binary-flag	3.4.10.1	set-output-channel-lock	videoSwitchControlRequestMsg
3.3.5.4.3.2.2.3	Frames per Second		data-element	vS-frames-per-second	3.4.22.2	frames-per-second	videoSwitchControlRequestMsg
3.3.5.4.3.2.2.4	Resolution (Height)		data-element	vS-pixel-count	3.4.22.3	frame-height-pixels	videoSwitchControlRequestMsg
3.3.5.4.3.2.2.5	Resolution (Width)		data-element	vS-pixel-count	3.4.22.3	frame-width-pixels	videoSwitchControlRequestMsg
3.3.5.4.3.2.2.6	Video Format		data-element	cctv-image-supported	3.4.2.2	video-format	videoSwitchControlRequestMsg
3.3.5.4.3.3	Contents of Video Switch Control Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.4.4.1	Send Video Switch Control Status Upon Request	2.4.1	dialog	dlDeviceControlStatusRequest	3.1.5.2	dlDeviceControlStatusRequest	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.4.4.2	Contents of the Video Switch Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.4.4.3	Contents of the Video Switch Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.4.5.1	Send Cancel Video Switch Control Response Upon Request	2.4.1	dialog	dIDeviceCancelControlRequest	3.1.5.1	dIDeviceCancelControlRequest	
3.3.5.4.5.2	Contents of Cancel Video Switch Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.4.5.3	Contents of Cancel Video Switch Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.5.1.1	Send DMS Inventory Information Upon Request	2.4.1	dialog	dIDMSInventoryRequest	3.1.6.1	dIDMSInventoryRequest	
3.3.5.5.1.2	Publish DMS Inventory Information	2.4.3	dialog	dIDMSInventoryUpdate	3.1.24.1	dIDMSInventoryUpdate	
3.3.5.5.1.3	Subscribe to DMS Inventory Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.5.1.4	Contents of the DMS Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.5.1.5	Contents of the DMS Inventory Information		message	dMSInventoryMsg	3.2.6.4	dMSInventoryMsg	
3.3.5.5.1.5.1	Required DMS Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.1	Required DMS Inventory Content		data-element	dmsSignType	3.6.3.35	dms-sign-type	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.1	Sign Technology		data-element	dmsSignTechnology	3.6.3.21	signTechnology	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.2	Sign Pixel Height		data-element	vmsSignHeightPixels	3.6.3.25	signHeightPixels	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.3	Sign Pixel Width		data-element	vmsSignWidthPixels	3.6.3.26	signWidthPixels	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.4	Sign Height		data-element	dmsSignHeight	3.6.3.27	signHeight	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.5	Sign Width		data-element	dmsSignWidth	3.6.3.28	signWidth	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.6	Character Pixel Height		data-element	vmsCharacterHeightPixels	3.6.3.29	charHeightPixels	ASN:dMSInventoryMsg XML:dms-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.5.1.5.2.7	Character Pixel Width		data-element	vmsCharacterWidthPixels	3.6.3.30	charWidthPixels	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.8	DMS Beacon Type		data-element	dmsBeaconType	3.6.3.22	dms-beacon-type	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.9	Vertical Border		data-element	dmsVerticalBorder	3.6.3.31	dms-vertical-border	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.10	Horizontal Border		data-element	dmsHorizontalBorder	3.6.3.32	dms-horizontal-border	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.11	Sign Vertical Pixel Pitch		data-element	vmsVerticalPitch	3.6.3.34	dms-vertical-pixel-pitch	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.12	Sign Horizontal Pixel Pitch		data-element	vmsHorizontalPitch	3.6.3.33	dms-horizontal-pixel-pitch	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.13	Maximum Number of Pages		data-element	dmsMaxNumberPages	3.6.3.11	dms-max-pages	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.14	Maximum Message Length		data-element	dmsMaxMultiStringLength	3.6.3.12	dms-max-message-length	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.15	Color Scheme		data-element	dmsColorScheme	3.6.3.13	dms-color-scheme	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.1.5.2.16	MULTI Tags Supported		data-element	dmsSupportedMultiTags	3.6.3.15	dms-multi-tag-support	ASN:dMSInventoryMsg XML:dms-inventory-item
3.3.5.5.2.1	Send DMS Status Information Upon Request	2.4.1	dialog	dIDMSStatusRequest	3.1.6.2	dIDMSStatusRequest	
3.3.5.5.2.2	Publish DMS Status Information	2.4.3	dialog	dIDMSStatusUpdate	3.1.24.3	dIDMSStatusUpdate	
3.3.5.5.2.3	Subscribe to DMS Status Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.5.2.4	Contents of the DMS Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.5.2.5	Contents of the DMS Status Information		message	dMSStatusMsg	3.2.6.10	dMSStatusMsg	
3.3.5.5.2.5.1	Required DMS Status Content		data-frame	deviceStatusHeader	3.3.5.13	device-status-header	ASN:dMSStatusMsg XML:dms-status-item
3.3.5.5.2.5.1	Required DMS Status Content		data-element	dmsMessageMultiString	3.6.3.16	current-message	ASN:dMSStatusMsg XML:dms-status-item
3.3.5.5.2.5.2.1	Current Message Number - DMS		data-element	dmsMsgTableSource	3.6.3.18	message-number	ASN:dMSStatusMsg XML:dms-status-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.5.2.5.2.2	Time Remaining		data-element	dmsMessageTimeRemaining	3.6.3.24	message-time-remaining	ASN:dMSStatusMsg XML:dms-status-item
3.3.5.5.2.5.2.3	Message Source		data-element	dmsMsgSourceMode	3.6.3.14	message-source-mode	ASN:dMSStatusMsg XML:dms-status-item
3.3.5.5.2.5.2.4	Message Beacon		data-element	dmsMessageBeacon	3.6.3.17	message-beacon	ASN:dMSStatusMsg XML:dms-status-item
3.3.5.5.3.1	Send DMS Control Response Upon Request	2.4.1	dialog	dIDMSControlRequest	3.1.6.7	dIDMSControlRequest	
3.3.5.5.3.2	Contents of DMS Control Request		message	dMSControlRequestMsg	3.2.6.1	dMSControlRequestMsg	
3.3.5.5.3.2.1	Required DMS Control Request Content		data-frame	deviceControlRequestHeader	3.3.5.2	device-control-request-header	dMSControlRequestMsg
3.3.5.5.3.2.1	Required DMS Control Request Content		data-element	dms-request-command	3.4.6.1	dms-request-command	dMSControlRequestMsg
3.3.5.5.3.2.1	Required DMS Control Request Content		data-element	dmsMessageMultiString	3.6.3.16	dms-message	dms-command-parameters
3.3.5.5.3.2.1	Required DMS Control Request Content		data-element	dmsMsgTableSource	3.6.3.18	message-number	dms-command-parameters
3.3.5.5.3.2.2.1	Beacon Control		data-element	dmsMessageBeacon	3.6.3.17	dms-beacon-control	dMSControlRequestMsg
3.3.5.5.3.3	Contents of DMS Control Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.5.4.1	Send DMS Control Status Upon Request	2.4.1	dialog	dIDeviceControlStatusRequest	3.1.5.2	dIDeviceControlStatusRequest	
3.3.5.5.4.2	Contents of the DMS Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.5.4.3	Contents of the DMS Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.5.5.1	Send Cancel DMS Control Response Upon Request	2.4.1	dialog	dIDeviceCancelControlRequest	3.1.5.1	dIDeviceCancelControlRequest	
3.3.5.5.5.2	Contents of the Cancel DMS Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.5.5.3	Contents of the Cancel DMS Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.5.6.1	Send DMS Message Appearance Upon Request	2.4.1	dialog	dIDMSMessageAppearanceRequest	3.1.6.5	dIDMSMessageAppearanceRequest	
3.3.5.5.6.2	Contents of a DMS Message Appearance Request		message	dMSMessageAppearanceRequestMsg	3.2.6.6	dMSMessageAppearanceRequestMsg	
3.3.5.5.6.3	Contents of the DMS Message Appearance Information		message	dMSMessageAppearanceMsg	3.2.6.5	dMSMessageAppearanceMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.5.6.3.1	Required DMS Message Appearance Information		data-frame	organizationInformation	3.3.16.3	organization-information	dMSMessageAppearanceMsg
3.3.5.5.6.3.1	Required DMS Message Appearance Information		data-element	organization-resource-identifier	3.4.16.8	device-id	dMSMessageAppearanceMsg
3.3.5.5.6.3.1	Required DMS Message Appearance Information		data-element	dms-sign-type	3.4.6.2	dms-sign-type	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	vmsSignHeightPixels	3.6.3.25	signHeightPixels	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	vmsSignWidthPixels	3.6.3.26	signWidthPixels	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsSignHeight	3.6.3.27	signHeight	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsSignWidth	3.6.3.28	signWidth	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	vmsCharacterHeightPixels	3.6.3.29	charHeightPixels	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	vmsCharacterWidthPixels	3.6.3.30	charWidthPixels	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsVerticalBorder	3.6.3.31	dms-vertical-border	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsHorizontalBorder	3.6.3.32	dms-horizontal-border	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	vmsVerticalPitch	3.6.3.34	dms-vertical-pixel-pitch	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	vmsHorizontalPitch	3.6.3.33	dms-horizontal-pixel-pitch	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsMaxNumberPages	3.6.3.11	dms-max-pages	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsMaxMultiStringLength	3.6.3.12	dms-max-message-length	dMSMessageAppearanceMsg

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsColorScheme	3.6.3.13	dms-color-scheme	dMSMessageAppearanceMsg
3.3.5.5.6.3.2	Additional Required DMS Message Appearance Response Information For Matrix Signs		data-element	dmsSupportedMultiTags	3.6.3.15	dms-multi-tag-support	dMSMessageAppearanceMsg
3.3.5.5.6.3.3.1	Restrictions - DMS Message Appearance		data-frame	restrictions	3.3.16.5	restrictions	dMSMessageAppearanceMsg
3.3.5.5.7.1	Send DMS Message Table Upon Request	2.4.1	dialog	dIDMSMessageInventoryRequest	3.1.6.3	dIDMSMessageInventoryRequest	
3.3.5.5.7.2	Publish DMS Message Table Information	2.4.3	dialog	dIDMSMessageInventoryUpdate	3.1.24.2	dIDMSMessageInventoryUpdate	
3.3.5.5.7.3	Subscribe to DMS Message Table Information	2.4.2	dialog	dIDMSMessageInventorySubscription	3.1.6.4	dIDMSMessageInventorySubscription	
3.3.5.5.7.4	Contents of the DMS Message Table Inventory Request		message	dMSMessageInventoryRequestMsg	3.2.6.8	dMSMessageInventoryRequestMsg	
3.3.5.5.7.4.1	Required DMS Message Table Inventory Request		data-frame	deviceInformationRequest	3.3.5.6	device-information-request-header	dMSMessageInventoryRequestMsg
3.3.5.5.7.4.2.1	DMS Message Number Identifier		data-element	dmsMsgTableSource	3.6.3.18	message-number ⁸	dMSMessageInventoryRequestMsg
3.3.5.5.7.4.2.2	DMS Memory Type - Version 3.01		data-element	dmsMessageMemoryType	3.6.3.20	message-memory-type ⁹	dMSMessageInventoryRequestMsg
3.3.5.5.7.4.2.3	DMS Memory Type		data-element	dmsMsgTableSource	3.6.3.18	message-number	dMSMessageInventoryRequestMsg
3.3.5.5.7.5	Contents of the DMS Message Table Inventory Information		message	dMSMessageInventoryMsg	3.2.6.7	dMSMessageInventoryMsg	
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item

⁸ dmsMsgTableSource is an octet string defined in NTCIP 1203 v03 and consists of several data concepts. The portion of dmsMsgTableSource defined by dmsMessageCRC is not needed and should be set to 0 or ignored.

⁹ Requirement 3.3.5.5.7.4.2.2 previously traced to data-element dmsMessageMemoryType, 3.6.3.20, message-memory-type, but now traces to data-element dmsMsgTableSource, 3.6.3.18, message-number. dmsMsgTableSource, 3.6.3.18, message-number is a message ID code consisting of several data elements, including dmsMessageMemoryType, 3.6.3.20, and thus dmsMessageMemoryType, 3.6.3.20 is redundant. However, this trace is maintained for backwards compatability.

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-element	organization-resource-identifier	3.4.16.8	device-id	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-element	dmsMsgTableSource	3.6.3.18	message-number	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-element	dmsMessageMultiString	3.6.3.16	message	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-frame	organizationInformation	3.3.16.3	message-owner-organization-information	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-element	binary-flag	3.4.10.1	enable-beacon-flag	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-element	dmsMessageRunTimePriority	3.6.3.23	message-run-time-priority	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.1	Required DMS Message Table Inventory Information Content		data-element	dmsMessageStatus	3.6.3.19	message-status	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.2.1	Restrictions - DMS Message Inventory		data-frame	restrictions	3.3.16.5	restrictions	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.2.2	DMS Message Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.7.5.2.3	DMS Message CRC		data-element	dmsMsgTableSource	3.6.3.18	message-number	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.5.7.5.2.4	DMS Message Inventory Memory Type - Version 3.01		data-element	dmsMessageMemoryType	3.6.3.20	message-memory-type ¹⁰	ASN:dMSMessageInventoryMsg XML:dms-message-inventory-item
3.3.5.5.8.1	Send DMS Font Table Upon Request	2.4.1	dialog	dIDMSFontTableRequest	3.1.6.6	dIDMSFontTableRequest	
3.3.5.5.8.2	Contents of the DMS Font Table Request		message	dMSFontTableRequestMsg	3.2.6.3	dMSFontTableRequestMsg	
3.3.5.5.8.2.1	Required DMS Font Table Request		data-frame	deviceInformationRequest	3.3.5.6	device-information-request-header	dMSFontTableRequestMsg
3.3.5.5.8.2.2.1	DMS Font Identifier		data-element	fontNumber	3.6.3.2	fontNumber	dMSFontTableRequestMsg
3.3.5.5.8.3	Contents of DMS Font Table Response		message	dMSFontTableMsg	3.2.6.2	dMSFontTableMsg	
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	organization-resource-identifier	3.4.16.8	device-id	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	defaultFont	3.6.3.1	defaultFont	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	fontNumber	3.6.3.2	fontNumber	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	fontHeight	3.6.3.3	fontHeight	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	fontCharSpacing	3.6.3.4	fontCharSpacing	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	fontLineSpacing	3.6.3.5	fontLineSpacing	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	fontVersionID	3.6.3.6	fontVersionID	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-element	fontStatus	3.6.3.7	fontStatus	ASN:dMSFontTableMsg XML:dms-font-table-item

¹⁰ Requirement 3.3.5.5.7.5.1 previously included a trace to data-element dmsMessageMemoryType, 3.6.3.20, message-memory-type, but now traces to data-element dmsMsgTableSource, 3.6.3.18, message-number. dmsMsgTableSource, 3.6.3.18, message-number is a message ID code consisting of several data elements, including dmsMessageMemoryType, 3.6.3.20, and thus dmsMessageMemoryType, 3.6.3.20 is redundant. However, this trace is maintained for backwards compatability.

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.5.8.3.1	Required DMS Font Table Response Content		data-frame	dMSCharacterTableEntry	3.3.6.1	characterTable	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.2.1	Restrictions - DMS Fonts		data-frame	restrictions	3.3.16.5	restrictions	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.8.3.2.2	Font Table Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:dMSFontTableMsg XML:dms-font-table-item
3.3.5.5.9.1	Send DMS Priority Queue Information Upon Request	2.4.1	dialog	dIDMSPriorityQueueRequest	3.1.6.8	dIDMSPriorityQueueRequest	
3.3.5.5.9.2	Contents of the DMS Priority Queue Request		message	devicePriorityQueueRequestMsg	3.2.5.5	devicePriorityQueueRequestMsg	
3.3.5.5.9.3	Contents of the DMS Priority Queue Response		message	dMSPriorityQueueMsg	3.2.6.9	dMSPriorityQueueMsg	
3.3.5.6.1.1	Send ESS Inventory Information Upon Request	2.4.1	dialog	dIESSInventoryRequest	3.1.7.1	dIESSInventoryRequest	
3.3.5.6.1.2	Publish ESS Inventory Information	2.4.3	dialog	dIESSInventoryUpdate	3.1.25.1	dIESSInventoryUpdate	
3.3.5.6.1.3	Subscribe to ESS Inventory Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.6.1.4	Contents of the ESS Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.6.1.5	Contents of the ESS Inventory Information		message	eSSInventoryMsg	3.2.7.1	eSSInventoryMsg	
3.3.5.6.1.5.1	Required ESS Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:eSSInventoryMsg XML:ess-inventory-item
3.3.5.6.1.5.1	Required ESS Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	ess-sensor-inventory-header	ASN:ess-inventory-list XML:ess-sensor
3.3.5.6.1.5.2.1	Lane Number - ESS		data-element	link-lane-number	3.4.14.11	lane-number	ASN:ess-inventory-list XML:ess-sensor
3.3.5.6.1.5.2.2	Device Elevation		data-element	device-location-elevation	3.4.5.8	sensor-location-elevation	ASN:ess-inventory-list XML:ess-sensor
3.3.5.6.1.5.2.3	Device Height		data-element	device-location-height	3.4.5.9	sensor-location-height	ASN:ess-inventory-list XML:ess-sensor
3.3.5.6.1.5.2.4	Device Type		data-element	ess-sensor-type	3.4.7.25	sensor-type	ASN:ess-inventory-list XML:ess-sensor
3.3.5.6.1.5.2.5	Device Operation Type		data-element	device-operation-type	3.4.5.12	sensor-operation-type	ASN:ess-inventory-list XML:ess-sensor

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.6.1.5.2.6	Device Mobility Type		data-element	device-mobility-type	3.4.5.10	sensor-mobility-type	ASN:ess-inventory-list XML:ess-sensor
3.3.5.6.2.1	Send ESS Status Information Upon Request	2.4.1	dialog	dlESSStatusRequest	3.1.7.2	dlESSStatusRequest	
3.3.5.6.2.2	Publish ESS Status Information	2.4.3	dialog	dlESSStatusUpdate	3.1.25.2	dlESSStatusUpdate	
3.3.5.6.2.3	Subscribe to ESS Status Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.6.2.4	Contents of the ESS Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.6.2.5	Contents of the ESS Status Information		message	eSSStatusMsg	3.2.7.4	eSSStatusMsg	
3.3.5.6.3.1	Send ESS Observation Data Information Upon Request	2.4.1	dialog	dlESSObservationReportRequest	3.1.7.4	dlESSObservationReportRequest	
3.3.5.6.3.2	Publish ESS Observation Data Information	2.4.3	dialog	dlESSObservationReportUpdate	3.1.25.3	dlESSObservationReportUpdate	
3.3.5.6.3.3	Subscribe to ESS Observation Data Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.6.3.4	Contents of the ESS Observation Data Information Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.6.3.5	Contents of the ESS Observation Data Information		message	eSSObservationReportMsg	3.2.7.3	eSSObservationReportMsg	
3.3.5.6.3.5.1	Required ESS Observation Data Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:eSSObservationReportMsg XML:ess-observation-report-item
3.3.5.6.3.5.1	Required ESS Observation Data Information Content		data-element	organization-resource-identifier	3.4.16.8	station-id	ASN:eSSObservationReportMsg XML:ess-observation-report-item
3.3.5.6.3.5.1	Required ESS Observation Data Information Content		data-frame	eSSObservationReportDetail	3.3.7.10	ess-data-list	ASN:eSSObservationReportMsg XML:ess-observation-report-item
3.3.5.6.3.5.2.1	Restrictions - ESS Data		data-frame	restrictions	3.3.16.5	restrictions	ASN:eSSObservationReportMsg XML:ess-observation-report-item
3.3.5.6.4.1	Send ESS Metadata Information Upon Request	2.4.1	dialog	dlESSObservationMetadataRequest	3.1.7.3	dlESSObservationMetadataRequest	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.6.4.2	Contents of the ESS Metadata Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.6.4.3	Contents of the ESS Metadata Information		message	eSSObservationMetadataMsg	3.2.7.2	eSSObservationMetadataMsg	
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-data-set-file-name	3.4.7.6	ess-data-set-file-name	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-data-set-file-path	3.4.7.7	ess-data-set-file-directory-path	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-data-set-file-access-protocol	3.4.7.3	ess-data-set-file-access-protocol	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-data-set-file-host	3.4.7.5	ess-data-set-file-access-address	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-data-set-file-access-protocol-port-address	3.4.7.4	ess-data-set-file-access-port-address	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-time-span-minutes	3.4.7.33	ess-observation-collection-frequency	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-time-span-minutes	3.4.7.33	ess-observation-collection-offset	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-time-span-minutes	3.4.7.33	ess-host-server-offset-minutes	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	ess-observation-time-zone	3.4.7.18	ess-host-server-time-zone	ess-observation-data-set-metadata
3.3.5.6.4.3.1	Required ESS Metadata Information Content		data-element	binary-flag	3.4.10.1	ess-host-server-daylight-savings-in-effect-flag	ess-observation-data-set-metadata
3.3.5.6.4.3.2.1	Username		data-element	organization-resource-identifier	3.4.16.8	user-id	ess-observation-data-set-metadata
3.3.5.6.4.3.2.2	Password		data-element	security-password	3.4.3.3	password	ess-observation-data-set-metadata
3.3.5.6.4.3.3	Collector Configuration Information		data-element	ess-observation-positional-order	3.4.7.16	ess-observation-positional-order	ASN:ess-collector-configuration XML:ess-collector-metadata
3.3.5.6.4.3.3	Collector Configuration Information		data-element	ess-object-label	3.4.7.10	ess-observation-label	ASN:ess-collector-configuration XML:ess-collector-metadata
3.3.5.6.4.3.3	Collector Configuration Information		data-element	ess-observation-units	3.4.7.19	ess-observation-units	ASN:ess-collector-configuration XML:ess-collector-metadata
3.3.5.6.4.3.3	Collector Configuration Information		data-element	ess-observation-decimal-scaling-factor	3.4.7.13	ess-observation-decimal-scaling-factor	ASN:ess-collector-configuration XML:ess-collector-metadata
3.3.5.6.4.3.4.1	Observation Type		data-element	ess-object-name	3.4.7.11	ess-observation-type	ASN:ess-collector-configuration XML:ess-collector-metadata

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.6.4.3.4.2	Null Value		data-element	ess-object-null-value	3.4.7.12	ess-observation-null-value	ASN:ess-collector-configuration XML:ess-collector-metadata
3.3.5.6.4.3.5	Owner Organization - ESS Metadata		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:eSSObservationMetadata Msg XML:ess-observation- metadata-item
3.3.5.6.4.3.6.1	Required Sensor Specific Metadata Information		data-element	organization-resource-identifier	3.4.16.8	station-id	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.1	Required Sensor Specific Metadata Information		data-element	organization-resource-identifier	3.4.16.8	sensor-id	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.1	Required Sensor Specific Metadata Information		data-element	ess-distribution-group	3.4.7.9	sensor-information-distribution-group	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.1	Required Sensor Specific Metadata Information		data-element	ess-object-name	3.4.7.11	ess-observation-type	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.1	Required Sensor Specific Metadata Information		data-element	organization-resource-name	3.4.16.9	sensor-manufacturer	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.1	Required Sensor Specific Metadata Information		data-element	organization-resource-identifier	3.4.16.8	sensor-model-number	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.1	Required Sensor Specific Metadata Information		data-element	ess-observation-sensor-index	3.4.7.17	sensor-index	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.1	Sensor Description		data-element	event-description-notes-and-comments	3.4.8.10	sensor-description	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.2	Minimum Value of the Sensor Range		data-element	ess-observation-value-range-number	3.4.7.20	sensor-min-value-range	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.3	Maximum Value of the Sensor Range		data-element	ess-observation-value-range-number	3.4.7.20	sensor-max-value-range	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.4	Maximum Positive Rate of Change		data-element	ess-observation-rate-of-change	3.4.7.21	sensor-max-positive-rate-of-change	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.5	Maximum Negative Rate of Change		data-element	ess-observation-rate-of-change	3.4.7.21	sensor-max-negative-rate-of-change	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.6	Rate Interval		data-element	ess-time-span-seconds	3.4.7.34	sensor-rate-of-change-interval	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.7	Persistence Interval		data-element	ess-time-span-seconds	3.4.7.34	sensor-persistence-interval	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.6.4.3.6.2.8	Persistence Threshold		data-element	ess-observation-rate-of-change	3.4.7.21	sensor-persistence-threshold	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.9	Like Instrument Threshold		data-element	ess-sensor-resolution	3.4.7.24	sensor-like-instrument-threshold	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.10	Date of Calibration		data-frame	dateTimeZone	3.3.10.1	sensor-maintenance-calibration-date	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.11	Date of Last Maintenance		data-frame	dateTimeZone	3.3.10.1	sensor-last-maintenance-date	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.12	Serial Number		data-element	organization-resource-identifier	3.4.16.8	sensor-serial-number	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.13	Sensor Resolution		data-element	ess-sensor-resolution	3.4.7.24	sensor-resolution	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.14	Sensor Accuracy		data-element	ess-sensor-accuracy	3.4.7.23	sensor-accuracy	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.15	Minimum Value Output		data-element	ess-observation-value-range-number	3.4.7.20	sensor-min-value-output	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.16	Maximum Value Output		data-element	ess-observation-value-range-number	3.4.7.20	sensor-max-value-output	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.17	Sensor to Station North South Offset		data-element	ess-distance-meters	3.4.7.8	sensor-to-station-north-south-offset	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.18	Sensor to Station East West Offset		data-element	ess-distance-meters	3.4.7.8	sensor-to-station-east-west-offset	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.19	Sensor to Station Elevation Offset		data-element	ess-distance-meters	3.4.7.8	sensor-to-station-elevation-offset	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.20	Sensor to Surface Offset		data-element	ess-distance-meters	3.4.7.8	sensor-to-surface-elevation-offset	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.21	Embedded Material Description		data-element	event-description-notes-and-comments	3.4.8.10	sensor-embedded-material-description	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.22	Output Average Interval		data-element	ess-time-span-milliseconds	3.4.7.32	sensor-output-average-interval	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.23	Output Internal Units		data-element	ess-observation-units	3.4.7.19	sensor-output-internal-units	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.24	Initial Installation Date - ESS Sensor		data-frame	dateTimeZone	3.3.10.1	sensor-installation-date	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.6.4.3.6.2.25	Begin Date/Time of Out of Service Period		data-frame	dateTimeZone	3.3.10.1	sensor-last-out-of-service-begin-date-time	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.26	End Date/Time of Out of Service Period		data-frame	dateTimeZone	3.3.10.1	sensor-last-out-of-service-end-date-time	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.6.2.27	Sampling Interval		data-element	ess-time-span-seconds	3.4.7.34	sensor-sampling-interval	ASN:ess-sensor-metadata-list XML:ess-sensor-metadata
3.3.5.6.4.3.7.1	Required Site Specific Metadata Information		data-element	event-description-notes-and-comments	3.4.8.10	site-description	site-information
3.3.5.6.4.3.7.2	Roadway Name		data-element	transportation-network-name	3.4.21.1	site-roadway-name	site-information
3.3.5.6.4.3.7.3	Linear Reference - ESS Metadata		data-element	link-location-linear-reference	3.4.14.15	site-roadway-linear-reference	site-information
3.3.5.6.4.3.7.3	Linear Reference - ESS Metadata		data-element	link-location-linear-reference-version	3.4.14.16	site-roadway-linear-reference-version	site-information
3.3.5.6.4.3.7.4	Linear Reference Units		data-element	IRMethod	3.6.6.11	site-roadway-linear-reference-units	site-information
3.3.5.6.4.3.7.5	Distance to Roadway		data-element	ess-distance-meters	3.4.7.8	site-roadway-to-station-distance	site-information
3.3.5.6.4.3.7.6	Elevation from Roadway		data-element	ess-distance-meters	3.4.7.8	site-roadway-to-station-elevation	site-information
3.3.5.6.4.3.7.7	Jurisdiction		data-element	organization-resource-name	3.4.16.9	site-jurisdiction-name	site-information
3.3.5.6.4.3.7.8	State		data-element	contact-mailing-address-state	3.4.16.3	site-state-code	site-information
3.3.5.6.4.3.7.9	Country		data-element	ess-site-country-code	3.4.7.26	site-country-code	site-information
3.3.5.6.4.3.7.10	Access Directions		data-element	event-description-notes-and-comments	3.4.8.10	site-directions-description	site-information
3.3.5.6.4.3.7.11	Site Representativeness		data-element	event-description-notes-and-comments	3.4.8.10	site-representativeness	site-information
3.3.5.6.4.3.7.12	Site Obstructions		data-element	event-description-notes-and-comments	3.4.8.10	site-obstructions-description	site-information
3.3.5.6.4.3.7.13	Site Landscape		data-element	event-description-notes-and-comments	3.4.8.10	site-landscape-description	site-information
3.3.5.6.4.3.7.14	Site Access Control		data-element	binary-flag	3.4.10.1	site-has-access-control-flag	site-information
3.3.5.6.4.3.7.15	Site Slope		data-element	ess-angle-degrees	3.4.7.1	site-slope-angle	site-information
3.3.5.6.4.3.7.16	Site Grade Direction		data-element	ess-angle-degrees	3.4.7.1	site-grade-direction	site-information
3.3.5.6.4.3.7.17	Site Wind Roughness		data-element	ess-observation-percent	3.4.7.15	site-wind-roughness-from-north	site-information
3.3.5.6.4.3.7.17	Site Wind Roughness		data-element	ess-observation-percent	3.4.7.15	site-wind-roughness-from-south	site-information
3.3.5.6.4.3.7.17	Site Wind Roughness		data-element	ess-observation-percent	3.4.7.15	site-wind-roughness-from-east	site-information
3.3.5.6.4.3.7.17	Site Wind Roughness		data-element	ess-observation-percent	3.4.7.15	site-wind-roughness-from-west	site-information
3.3.5.6.4.3.7.18	Site Soil Type		data-element	organization-resource-name	3.4.16.9	site-soil-description	site-information

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.6.4.3.7.18	Site Soil Type		data-element	ess-observation-percent	3.4.7.15	site-soil-percent-sand	site-information
3.3.5.6.4.3.7.18	Site Soil Type		data-element	ess-observation-percent	3.4.7.15	site-soil-percent-silt	site-information
3.3.5.6.4.3.7.18	Site Soil Type		data-element	ess-observation-percent	3.4.7.15	site-soil-percent-clay	site-information
3.3.5.6.4.3.7.19	Unique Site Identifier		data-element	organization-resource-identifier	3.4.16.8	site-id	site-information
3.3.5.6.4.3.8.1	Required Station Specific Metadata Information		data-element	essNtcipCategory	3.6.4.1	station-category	station-information
3.3.5.6.4.3.8.1	Required Station Specific Metadata Information		data-element	organization-resource-identifier	3.4.16.8	station-id	station-information
3.3.5.6.4.3.8.1	Required Station Specific Metadata Information		data-frame	geoLocation	3.6.9.4	station-location	station-information
3.3.5.6.4.3.8.1	Required Station Specific Metadata Information		data-element	essReferenceHeight	3.6.4.7	station-elevation	station-information
3.3.5.6.4.3.8.2	Station Description		data-element	event-description-notes-and-comments	3.4.8.10	station-description	station-information
3.3.5.6.4.3.8.3	Station Operation Type		data-element	essTypeofStation	3.6.4.2	station-type	station-information
3.3.5.6.4.3.8.4	Station Geo-coordinate Referencing Model		data-element	horizontalDatum	3.6.6.8	station-horizontal-datum	station-information
3.3.5.6.4.3.8.4	Station Geo-coordinate Referencing Model		data-element	verticalDatum	3.6.6.12	station-vertical-datum	station-information
3.3.5.6.4.3.8.5	Station Power Source		data-element	ess-station-power-source	3.4.7.30	station-power-source	station-information
3.3.5.6.4.3.8.6	Door Status		data-element	essDoorStatus	3.6.4.3	station-door-status	station-information
3.3.5.6.4.3.8.7	Battery Status		data-element	essBatteryStatus	3.6.4.4	station-battery-status	station-information
3.3.5.6.4.3.8.8	Line Volts		data-element	essLineVolts	3.6.4.5	station-line-volts	station-information
3.3.5.6.4.3.8.9	Station Maintenance Group Name		data-element	organization-resource-name	3.4.16.9	station-maintenance-group-name	station-information
3.3.5.6.4.3.8.10	Preventive Maintenance Interval		data-element	ess-time-span-days	3.4.7.31	station-maintenance-frequency	station-information
3.3.5.6.4.3.8.11	Maintenance Calibration Interval		data-element	ess-time-span-days	3.4.7.31	station-maintenance-calibration-frequency	station-information
3.3.5.6.4.3.8.12	Maintenance Status		data-element	ess-station-maintenance-status	3.4.7.28	station-maintenance-status	station-information
3.3.5.6.4.3.8.13	Initial Installation Date		data-frame	dateTimeZone	3.3.10.1	station-installation-date	station-information
3.3.5.6.4.3.8.14	Number of Devices		data-element	ess-station-number-of-devices	3.4.7.29	station-number-of-devices	station-information
3.3.5.6.4.3.8.15	Communications Method		data-element	ess-station-comm-method	3.4.7.27	station-comm-method	station-information
3.3.5.6.4.3.8.16	Station Phone Number		data-element	organization-resource-identifier	3.4.16.8	station-telephone-number	station-information
3.3.5.6.4.3.8.17	Station IP Address		data-element	organization-resource-identifier	3.4.16.8	station-ip-address	station-information
3.3.5.6.4.3.8.18	Station Manufacturer		data-element	organization-resource-name	3.4.16.9	station-manufacturer	station-information
3.3.5.6.4.3.8.19	Observation Collection Interval		data-element	ess-time-span-minutes	3.4.7.33	station-observation-collection-frequency	station-information

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.6.4.3.8.20	Observation Collection Offset		data-element	ess-time-span-minutes	3.4.7.33	station-observation-collection-offset	station-information
3.3.5.6.4.3.8.21	Transmission Interval		data-element	ess-time-span-minutes	3.4.7.33	station-transmission-frequency	station-information
3.3.5.6.4.3.8.22	Transmission Offset		data-element	ess-time-span-minutes	3.4.7.33	station-transmission-offset	station-information
3.3.5.6.4.3.8.23	Transmission Format		data-element	organization-resource-name	3.4.16.9	station-transmission-format	station-information
3.3.5.6.4.3.8.24	Station Maintenance Contact Information		data-frame	contactDetails	3.3.16.1	station-maintenance-contact-information	station-information
3.3.5.6.4.3.9	Climate Record Information		data-frame	eSSClimateRecordDetail	3.3.7.1	climate-record-information	ASN:eSSObservationMetadataMsg XML:ess-observation-metadata-item
3.3.5.6.4.3.10	Data Collector Information		data-frame	eSSDataCollectorInformation	3.3.7.2	data-collector-information	ASN:eSSObservationMetadataMsg XML:ess-observation-metadata-item
3.3.5.6.4.3.11	Image Information		data-frame	eSSImageInformation	3.3.7.3	image-information	ASN:eSSObservationMetadataMsg XML:ess-observation-metadata-item
3.3.5.6.4.3.12	Restrictions - ESS Metadata		data-frame	restrictions	3.3.16.5	restrictions	ASN:eSSObservationMetadataMsg XML:ess-observation-metadata-item
3.3.5.7.1.1	Send Gate Inventory Information Upon Request	2.4.1	dialog	dIGateInventoryRequest	3.1.9.1	dIGateInventoryRequest	
3.3.5.7.1.2	Publish Gate Inventory Information	2.4.3	dialog	dIGateInventoryUpdate	3.1.27.1	dIGateInventoryUpdate	
3.3.5.7.1.3	Subscribe to Gate Inventory Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.7.1.4	Contents of the Gate Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.7.1.5	Contents of the Gate Inventory Information		message	gateInventoryMsg	3.2.9.3	gateInventoryMsg	
3.3.5.7.1.5.1	Required Gate Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:gateInventoryMsg XML:gate-inventory-item
3.3.5.7.1.5.2.1	Number of Lanes - Gate Inventory		data-element	link-lanes-count	3.4.14.12	link-lane-count	ASN:gateInventoryMsg XML:gate-inventory-item
3.3.5.7.2.1	Send Gate Status Information Upon Request	2.4.1	dialog	dIGateStatusRequest	3.1.9.2	dIGateStatusRequest	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.7.2.2	Publish Gate Status Information	2.4.3	dialog	dlGateStatusUpdate	3.1.27.2	dlGateStatusUpdate	
3.3.5.7.2.3	Subscribe to Gate Status Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.7.2.4	Contents of the Gate Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.7.2.5	Contents of the Gate Status Information		message	gateStatusMsg	3.2.9.4	gateStatusMsg	
3.3.5.7.3.1	Send Gate Control Response Upon Request	2.4.1	dialog	dlGateControlRequest	3.1.9.3	dlGateControlRequest	
3.3.5.7.3.2	Contents of Gate Control Request		message	gateControlRequestMsg	3.2.9.1	gateControlRequestMsg	
3.3.5.7.3.3	Contents of Gate Control Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.7.4.1	Send Gate Control Status Upon Request	2.4.1	dialog	dlDeviceControlStatusRequest	3.1.5.2	dlDeviceControlStatusRequest	
3.3.5.7.4.2	Contents of the Gate Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.7.4.3	Contents of the Gate Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.7.5.1	Send Cancel Gate Control Response Upon Request	2.4.1	dialog	dlDeviceCancelControlRequest	3.1.5.1	dlDeviceCancelControlRequest	
3.3.5.7.5.2	Contents of Cancel Gate Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.7.5.3	Contents of Cancel Gate Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.7.6.1	Send Gate Schedule Information Upon Request	2.4.1	dialog	dlGateControlScheduleRequest	3.1.9.4	dlGateControlScheduleRequest	
3.3.5.7.6.2	Publish Gate Schedule Information	2.4.3	dialog	dlGateControlScheduleUpdate	3.1.27.3	dlGateControlScheduleUpdate	
3.3.5.7.6.3	Subscribe to Gate Schedule Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.7.6.4	Contents of the Gate Schedule Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.7.6.5	Contents of the Gate Schedule Information		message	gateControlScheduleMsg	3.2.9.2	gateControlScheduleMsg	
3.3.5.8.1.1	Send HAR Inventory Information Upon Request	2.4.1	dialog	dlHARInventoryRequest	3.1.10.1	dlHARInventoryRequest	
3.3.5.8.1.2	Publish HAR Inventory Information	2.4.3	dialog	dlHARInventoryUpdate	3.1.28.1	dlHARInventoryUpdate	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.8.1.3	Subscribe to HAR Inventory Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.8.1.4	Contents of the HAR Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.8.1.5	Contents of the HAR Inventory Information		message	hARInventoryMsg	3.2.10.3	hARInventoryMsg	
3.3.5.8.1.5.1	Required HAR Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:hARInventoryMsg XML:har-inventory-item
3.3.5.8.1.5.1	Required HAR Inventory Content		data-element	device-beacon	3.4.5.2	device-beacon	ASN:hARInventoryMsg XML:har-inventory-item
3.3.5.8.1.5.2.1	HAR Characteristics		data-element	har-characteristics	3.4.11.2	har-characteristics	ASN:hARInventoryMsg XML:har-inventory-item
3.3.5.8.1.5.2.2	Transmission Frequency Description		data-element	organization-resource-name	3.4.16.9	har-frequency-description	ASN:hARInventoryMsg XML:har-inventory-item
3.3.5.8.1.5.2.3	Call Sign		data-element	har-call-sign	3.4.11.1	har-call-sign	ASN:hARInventoryMsg XML:har-inventory-item
3.3.5.8.2.1	Send HAR Status Information Upon Request	2.4.1	dialog	dIHARStatusRequest	3.1.10.3	dIHARStatusRequest	
3.3.5.8.2.2	Publish HAR Status Information	2.4.3	dialog	dIHARStatusUpdate	3.1.28.3	dIHARStatusUpdate	
3.3.5.8.2.3	Subscribe to HAR Status Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.8.2.4	Contents of the HAR Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.8.2.5	Contents of the HAR Status Information		message	hARStatusMsg	3.2.10.6	hARStatusMsg	
3.3.5.8.2.5.1	Required HAR Status Content		data-frame	deviceStatusHeader	3.3.5.13	device-status-header	ASN:hARStatusMsg XML:har-status-item
3.3.5.8.2.5.1	Required HAR Status Content		data-element	har-message	3.4.11.3	har-current-message	ASN:hARStatusMsg XML:har-status-item
3.3.5.8.2.5.2.1	Beacon Status		data-element	dmsMessageBeacon	3.6.3.17	message-beacon	ASN:hARStatusMsg XML:har-status-item
3.3.5.8.2.5.2.2	Current Message Number - HAR		data-element	dmsMsgTableSource	3.6.3.18	message-number	ASN:hARStatusMsg XML:har-status-item
3.3.5.8.3.1	Send HAR Control Response Upon Request	2.4.1	dialog	dIHARControlRequest	3.1.10.4	dIHARControlRequest	
3.3.5.8.3.2	Contents of HAR Control Request		message	hARControlRequestMsg	3.2.10.1	hARControlRequestMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.8.3.2.1	Required HAR Control Request Content		data-frame	deviceControlRequestHeader	3.3.5.2	device-control-request-header	hARControlRequestMsg
3.3.5.8.3.2.1	Required HAR Control Request Content		data-element	har-request-command	3.4.11.4	har-request-command	hARControlRequestMsg
3.3.5.8.3.2.1	Required HAR Control Request Content		data-element	har-message	3.4.11.3	har-message	har-command-parameters
3.3.5.8.3.2.1	Required HAR Control Request Content		data-element	organization-resource-identifier	3.4.16.8	har-message-number	har-command-parameters
3.3.5.8.3.3	Contents of HAR Control Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.8.4.1	Send HAR Control Status Upon Request	2.4.1	dialog	dlDeviceControlStatusRequest	3.1.5.2	dlDeviceControlStatusRequest	
3.3.5.8.4.2	Contents of the HAR Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.8.4.3	Contents of the HAR Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.8.5.1	Send Cancel HAR Control Response Upon Request	2.4.1	dialog	dlDeviceCancelControlRequest	3.1.5.1	dlDeviceCancelControlRequest	
3.3.5.8.5.2	Contents of Cancel HAR Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.8.5.3	Contents of Cancel HAR Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.8.6.1	Send HAR Schedule Information Upon Request	2.4.1	dialog	dlHARControlScheduleRequest	3.1.10.5	dlHARControlScheduleRequest	
3.3.5.8.6.2	Publish HAR Schedule Information	2.4.3	dialog	dlHARControlScheduleUpdate	3.1.28.4	dlHARControlScheduleUpdate	
3.3.5.8.6.3	Subscribe to HAR Schedule Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.8.6.4	Contents of the HAR Schedule Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.8.6.5	Contents of the HAR Schedule Information		message	hARControlScheduleMsg	3.2.10.2	hARControlScheduleMsg	
3.3.5.8.7.1	Send HAR Messages Upon Request	2.4.1	dialog	dlHARMessageInventoryRequest	3.1.10.2	dlHARMessageInventoryRequest	
3.3.5.8.7.2	Publish HAR Messages Information	2.4.3	dialog	dlHARMessageInventoryUpdate	3.1.28.2	dlHARMessageInventoryUpdate	
3.3.5.8.7.3	Subscribe to HAR Messages Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.8.7.4	Contents of the HAR Message Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.8.7.5	Contents of HAR Message Inventory Response		message	hARMessageInventoryMsg	3.2.10.4	hARMessageInventoryMsg	
3.3.5.8.7.5.1	Required HAR Message Inventory Response Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:hARMessageInventoryMsg XML:har-message-inventory-item
3.3.5.8.7.5.1	Required HAR Message Inventory Response Content		data-element	organization-resource-identifier	3.4.16.8	device-id	ASN:hARMessageInventoryMsg XML:har-message-inventory-item
3.3.5.8.7.5.1	Required HAR Message Inventory Response Content		data-element	organization-resource-identifier	3.4.16.8	message-number	ASN:hARMessageInventoryMsg XML:har-message-inventory-item
3.3.5.8.7.5.1	Required HAR Message Inventory Response Content		data-element	har-message	3.4.11.3	current-message	ASN:hARMessageInventoryMsg XML:har-message-inventory-item
3.3.5.8.7.5.2.1	Restrictions - HAR Message Inventory		data-frame	restrictions	3.3.16.5	restrictions	ASN:hARMessageInventoryMsg XML:har-message-inventory-item
3.3.5.8.7.5.2.2	HAR Message Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:hARMessageInventoryMsg XML:har-message-inventory-item
3.3.5.8.8.1	Send HAR Priority Queue Information Upon Request	2.4.1	dialog	dlHARPriorityQueueRequest	3.1.10.6	dlHARPriorityQueueRequest	
3.3.5.8.8.2	Contents of the HAR Priority Queue Request		message	devicePriorityQueueRequestMsg	3.2.5.5	devicePriorityQueueRequestMsg	
3.3.5.8.8.3	Contents of the HAR Priority Queue Response		message	hARPriorityQueueMsg	3.2.10.5	hARPriorityQueueMsg	
3.3.5.9.1.1	Send LCS Inventory Information Upon Request	2.4.1	dialog	dlLCSInventoryRequest	3.1.12.1	dlLCSInventoryRequest	
3.3.5.9.1.2	Publish LCS Inventory Information	2.4.3	dialog	dlLCSInventoryUpdate	3.1.30.1	dlLCSInventoryUpdate	
3.3.5.9.1.3	Subscribe to LCS Inventory Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.9.1.4	Contents of the LCS Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.9.1.5	Contents of the LCS Inventory Information		message	ICSInventoryMsg	3.2.12.3	ICSInventoryMsg	
3.3.5.9.1.5.1	Required LCS Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:ICSInventoryMsg XML:lcs-inventory-item
3.3.5.9.1.5.1	Required LCS Inventory Content		data-element	link-lane-number	3.4.14.11	controlled-lane-number	ASN:ICSInventoryMsg XML:lcs-inventory-item
3.3.5.9.1.5.2.1	Number of Lanes - LCS Inventory		data-element	link-lanes-count	3.4.14.12	link-lane-count	ASN:ICSInventoryMsg XML:lcs-inventory-item
3.3.5.9.2.1	Send LCS Status Information Upon Request	2.4.1	dialog	dILCSStatusRequest	3.1.12.2	dILCSStatusRequest	
3.3.5.9.2.2	Publish LCS Status Information	2.4.3	dialog	dILCSStatusUpdate	3.1.30.2	dILCSStatusUpdate	
3.3.5.9.2.3	Subscribe to LCS Status Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.9.2.4	Contents of the LCS Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.9.2.5	Contents of the LCS Status Information		message	ICSStatusMsg	3.2.12.4	ICSStatusMsg	
3.3.5.9.3.1	Send LCS Control Response Upon Request	2.4.1	dialog	dILCSControlRequest	3.1.12.3	dILCSControlRequest	
3.3.5.9.3.2	Contents of LCS Control Request		message	ICSControlRequestMsg	3.2.12.1	ICSControlRequestMsg	
3.3.5.9.3.3	Contents of LCS Control Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.9.4.1	Send LCS Control Status Upon Request	2.4.1	dialog	dIDeviceControlStatusRequest	3.1.5.2	dIDeviceControlStatusRequest	
3.3.5.9.4.2	Contents of the LCS Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.9.4.3	Contents of the LCS Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.9.5.1	Send Cancel LCS Control Response Upon Request	2.4.1	dialog	dIDeviceCancelControlRequest	3.1.5.1	dIDeviceCancelControlRequest	
3.3.5.9.5.2	Contents of Cancel LCS Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.9.5.3	Contents of Cancel LCS Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.9.6.1	Send LCS Schedule Information Upon Request	2.4.1	dialog	dILCSControlScheduleRequest	3.1.12.4	dILCSControlScheduleRequest	
3.3.5.9.6.2	Publish LCS Schedule Information	2.4.3	dialog	dILCSControlScheduleUpdate	3.1.30.3	dILCSControlScheduleUpdate	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.9.6.3	Subscribe to LCS Schedule Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.9.6.4	Contents of the LCS Schedule Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.9.6.5	Contents of the LCS Schedule Information		message	ICSControlScheduleMsg	3.2.12.2	ICSControlScheduleMsg	
3.3.5.10.1.1	Send Ramp Meter Inventory Information Upon Request	2.4.1	dialog	dlRampMeterInventoryRequest	3.1.16.1	dlRampMeterInventoryRequest	
3.3.5.10.1.2	Publish Ramp Meter Inventory Information	2.4.3	dialog	dlRampMeterInventoryUpdate	3.1.32.1	dlRampMeterInventoryUpdate	
3.3.5.10.1.3	Subscribe to Ramp Meter Inventory Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.10.1.4	Contents of the Ramp Meter Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.10.1.5	Contents of the Ramp Meter Inventory Information		message	rampMeterInventoryMsg	3.2.16.3	rampMeterInventoryMsg	
3.3.5.10.1.5.1	Required Ramp Meter Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:rampMeterInventoryMsg XML:ramp-meter-inventory-item
3.3.5.10.1.5.1	Required Ramp Meter Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	metered-lane-inventory-header	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.1	Required Ramp Meter Inventory Content		data-element	transportation-network-name	3.4.21.1	ramp-exit-roadway-name	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.2.1	Lane Number - Ramp Meters		data-element	link-lane-number	3.4.14.11	lane-number	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.2.2	Lane Type - Ramp Meters		data-element	ramp-lane-type	3.4.17.3	lane-type	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.2.3	Associated Detectors Identifiers		data-element	organization-resource-identifier	3.4.16.8	associated-detectors	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.2.4	Absolute Minimum Metering Rate		data-element	rmcAbsoluteMinMeterRate	3.6.8.1	absolute-minimum-metering-rate	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.2.5	Absolute Maximum Metering Rate		data-element	rmcAbsoluteMaxMeterRate	3.6.8.2	absolute-maximum-metering-rate	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.2.6	System Minimum Metering Rate		data-element	rmcSystemMinMeterRate	3.6.8.3	system-minimum-metering-rate	ASN:metered-inventory-list XML:metered-lane
3.3.5.10.1.5.2.7	System Maximum Metering Rate		data-element	rmcSystemMaxMeterRate	3.6.8.4	system-maximum-metering-rate	ASN:metered-inventory-list XML:metered-lane

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.10.2.1	Send Ramp Meter Status Information Upon Request	2.4.1	dialog	dlRampMeterStatusRequest	3.1.16.2	dlRampMeterStatusRequest	
3.3.5.10.2.2	Publish Ramp Meter Status Information	2.4.3	dialog	dlRampMeterStatusUpdate	3.1.32.2	dlRampMeterStatusUpdate	
3.3.5.10.2.3	Subscribe to Ramp Meter Status Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.10.2.4	Contents of the Ramp Meter Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.10.2.5	Contents of the Ramp Meter Status Information		message	rampMeterStatusMsg	3.2.16.6	rampMeterStatusMsg	
3.3.5.10.2.5.1	Required Ramp Meter Status Content		data-frame	deviceStatusHeader	3.3.5.13	device-status-header	ASN:rampMeterStatusMsg XML:ramp-meter-status-item
3.3.5.10.2.5.1	Required Ramp Meter Status Content		data-frame	deviceStatusHeader	3.3.5.13	metered-lane-status-header	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.1	Required Ramp Meter Status Content		data-element	rmclImplementAction	3.6.8.21	meter-implemented-action	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.1	Requested Metering Command Source		data-element	rmcRequestCommandSource	3.6.8.15	requested-meter-command-source	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.2	Implemented Metering Command Source		data-element	rmclImplementCommandSource	3.6.8.16	implemented-meter-command-source	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.3	Implemented Plan		data-element	rmclImplementPlan	3.6.8.22	meter-implemented-plan	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.4	Implemented Rate		data-element	rmclImplementRate	3.6.8.23	meter-implemented-rate	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.5	Implemented Vehicles Per Green		data-element	rmclImplementVehiclesPerGrn	3.6.8.24	meter-implemented-vehicles-per-green	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.6	Requested Action		data-element	rmcRequestAction	3.6.8.17	meter-requested-action	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.7	Requested Plan - Ramp Meter Status		data-element	rmcRequestPlan	3.6.8.18	meter-requested-plan	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.8	Requested Rate - Ramp Meter Status		data-element	rmcRequestRate	3.6.8.19	meter-requested-rate	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.9	Requested Vehicles Per Green		data-element	rmcRequestVehiclesPerGrn	3.6.8.20	meter-requested-vehicles-per-green	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.10	Operational Minimum Metering Rate		data-element	rmcOperMinMeterRateStatus	3.6.8.14	operational-min-meter-rate	ASN:metered-status-list XML:metered-lane

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.10.2.5.2.11	Operational Maximum Metering Rate		data-element	rmcOperMaxMeterRateStatus	3.6.8.13	operational-max-meter-rate	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.12	Demand Detector Status		data-element	rmcDemandStatus	3.6.8.10	meter-demand-detector-status	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.13	Passage Detector Status		data-element	rmcPassageStatus	3.6.8.12	meter-passage-detector-status	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.14	Queue Detector Status		data-element	rmcQueueStatus	3.6.8.11	meter-queue-detector-status	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.15	Cycle Count		data-element	meter-greens-per-cycle	3.4.17.1	meter-cycle-count	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.16	Passenger Vehicle Count		data-element	detector-vehicle-count	3.4.4.4	metered-lane-vehicle-count	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.17	Queue Detected Flag		data-element	binary-flag	3.4.10.1	meter-queue-detected-flag	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.18	Violation Vehicle Count		data-element	detector-vehicle-count	3.4.4.4	metered-lane-violation-count	ASN:metered-status-list XML:metered-lane
3.3.5.10.2.5.2.19	Mainline Flow Rate		data-element	rmcAverageFlowRate	3.6.8.7	mainline-flow-rate	ASN:rampMeterStatusMsg XML:ramp-meter-status-item
3.3.5.10.2.5.2.20	Mainline Vehicle Occupancy		data-element	rmcAverageOccupancy	3.6.8.8	mainline-vehicle-occupancy	ASN:rampMeterStatusMsg XML:ramp-meter-status-item
3.3.5.10.2.5.2.21	Mainline Vehicle Speed		data-element	rmcAverageSpeed	3.6.8.9	mainline-vehicle-speed	ASN:rampMeterStatusMsg XML:ramp-meter-status-item
3.3.5.10.3.1	Send Ramp Meter Response Upon Request	2.4.1	dialog	dlRampMeterControlRequest	3.1.16.3	dlRampMeterControlRequest	
3.3.5.10.3.2	Contents of Ramp Meter Control Request		message	rampMeterControlRequestMsg	3.2.16.1	rampMeterControlRequestMsg	
3.3.5.10.3.2.1	Required Ramp Meter Control Request Content		data-frame	deviceControlRequestHeader	3.3.5.2	device-control-request-header	rampMeterControlRequestMsg
3.3.5.10.3.2.1	Required Ramp Meter Control Request Content		data-element	link-lane-number	3.4.14.11	metered-lane-identifier	ASN:metered-lane-list XML:metered-lane
3.3.5.10.3.2.1	Required Ramp Meter Control Request Content		data-element	rmcRequestAction	3.6.8.17	meter-request-command	ASN:metered-lane-list XML:metered-lane
3.3.5.10.3.2.2.1	Requested Plan - Ramp Meter Control		data-element	rmcManualPlan	3.6.8.5	meter-requested-plan	meter-command-parameters
3.3.5.10.3.2.2.2	Requested Rate - Ramp Meter Control		data-element	rmcManualRate	3.6.8.6	meter-requested-rate	meter-command-parameters

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.10.3.3	Contents of Ramp Meter Control Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.10.4.1	Request Ramp Meter Control Status		dialog	dlDeviceControlStatusRequest	3.1.5.2	dlDeviceControlStatusRequest	
3.3.5.10.4.2	Contents of the Ramp Meter Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.10.4.3	Contents of the Ramp Meter Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.10.5.1	Cancel Control Requests for Remote Ramp Meter		dialog	dlDeviceCancelControlRequest	3.1.5.1	dlDeviceCancelControlRequest	
3.3.5.10.5.2	Contents of Cancel Ramp Meter Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.10.5.3	Contents of Cancel Ramp Meter Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.10.6.1	Send Ramp Meter Schedule Information Upon Request	2.4.1	dialog	dlRampMeterControlScheduleRequest	3.1.16.4	dlRampMeterControlScheduleRequest	
3.3.5.10.6.2	Publish Ramp Meter Schedule Information	2.4.3	dialog	dlRampMeterControlScheduleUpdate	3.1.32.3	dlRampMeterControlScheduleUpdate	
3.3.5.10.6.3	Subscribe to Ramp Meter Schedule Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.10.6.4	Contents of the Ramp Meter Schedule Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.10.6.5	Contents of the Ramp Meter Schedule Information		message	rampMeterControlScheduleMsg	3.2.16.2	rampMeterControlScheduleMsg	
3.3.5.10.6.5.1	Required Ramp Meter Schedule Content		data-frame	deviceControlScheduleHeader	3.3.5.4	device-control-schedule-header	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.1	Required Ramp Meter Schedule Content		data-element	link-lane-number	3.4.14.11	metered-lane-identifier	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.1	Required Ramp Meter Schedule Content		data-element	rmcActionNum	3.6.8.32	action-number	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.2.1	Metered Lane Action Control		data-element	rmcTBActionCtrl	3.6.8.25	meter-action-control	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.10.6.5.2.2	Timebase Plan Control		data-element	rmcTBPlanCtrl	3.6.8.26	meter-requested-plan	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.2.3	Timebase Rate Control		data-element	rmcTBRateCtrl	3.6.8.27	meter-requested-rate	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.2.4	Timebase Vehicles Per Green Control		data-element	rmcTBVehiclesPerGrnCtrl	3.6.8.28	meter-vehicles-per-green	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.2.5	Timebase Control Minimum Metering Rate		data-element	rmcTBCMinMeterRateCtrl	3.6.8.29	min-meter-rate	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.2.6	Timebase Control Maximum Metering Rate		data-element	rmcTBCMaxMeterRateCtrl	3.6.8.30	max-meter-rate	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.6.5.2.7	Timebase Control Lane Usage Mode		data-element	rmcTBMLUsageMode	3.6.8.31	meter-lane-usage-mode	ASN:rampMeterControlScheduleMsg XML:ramp-meter-control-schedule-item
3.3.5.10.7.1	Send Metering Plan Upon Request	2.4.1	dialog	dlRampMeterPlanInventoryRequest	3.1.16.6	dlRampMeterPlanInventoryRequest	
3.3.5.10.7.2	Publish Metering Plan Information	2.4.3	dialog	dlRampMeterPlanInventoryUpdate	3.1.32.4	dlRampMeterPlanInventoryUpdate	
3.3.5.10.7.3	Subscribe to Metering Plan Information	2.4.2	dialog	dlRampMeterPlanInventorySubscription	3.1.16.7	dlRampMeterPlanInventorySubscription	
3.3.5.10.7.4	Contents of the Metering Plan Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.10.7.5	Contents of the Metering Plan Inventory Response		message	rampMeterPlanInventoryMsg	3.2.16.4	rampMeterPlanInventoryMsg	
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-element	organization-resource-identifier	3.4.16.8	device-id	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-element	organization-resource-identifier	3.4.16.8	meter-plan	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-element	rmcMeteringLevel	3.6.8.33	meter-level	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-element	rmcMeteringRate	3.6.8.34	meter-rate	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-element	rmcFlowRateThreshold	3.6.8.35	flow-rate-threshhold	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-element	rmcOccupancyThreshold	3.6.8.36	occupancy-threshold	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.1	Required Metering Plan Inventory Response Content		data-element	rmcSpeedThreshold	3.6.8.37	speed-threshold	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.2.1	Restrictions - Metering Plan Inventory		data-frame	restrictions	3.3.16.5	restrictions	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.7.5.2.2	Metering Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:rampMeterPlanInventoryMsg XML:ramp-meter-plan-inventory-item
3.3.5.10.8.1	Send Ramp Meter Priority Queue Information Upon Request	2.4.1	dialog	dIRampMeterPriorityQueueRequest	3.1.16.5	dIRampMeterPriorityQueueRequest	
3.3.5.10.8.2	Contents of the Ramp Meter Priority Queue Request		message	devicePriorityQueueRequestMsg	3.2.5.5	devicePriorityQueueRequestMsg	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.10.8.3	Contents of the Ramp Meter Priority Queue Response		message	rampMeterPriorityQueueMsg	3.2.16.5	rampMeterPriorityQueueMsg	
3.3.5.10.8.3.1	Required Ramp Meter Priority Queue Response Content		data-frame	devicePriorityQueueHeader	3.3.5.9	device-priority-queue-header	ASN:rampMeterPriorityQueueMsg XML:ramp-meter-priority-queue-item
3.3.5.10.8.3.1	Required Ramp Meter Priority Queue Response Content		data-element	meter-operational-mode	3.4.17.2	meter-request-command	ASN:rampMeterPriorityQueueMsg XML:ramp-meter-priority-queue-item
3.3.5.10.8.3.2.1	Metered Lane Identifier		data-element	organization-resource-identifier	3.4.16.8	metered-lane-identifier	ASN:rampMeterPriorityQueueMsg XML:ramp-meter-priority-queue-item
3.3.5.10.8.3.2.2	Requested Plan - Ramp Meter Queue		data-element	rmcManualPlan	3.6.8.5	meter-requested-plan	meter-queue-parameters
3.3.5.10.8.3.2.3	Requested Rate - Ramp Meter Queue		data-element	rmcManualRate	3.6.8.6	meter-requested-rate	meter-queue-parameters
3.3.5.11.1.1	Send Signal Inventory Information Upon Request	2.4.1	dialog	dIIntersectionSignalInventoryRequest	3.1.11.1	dIIntersectionSignalInventoryRequest	
3.3.5.11.1.2	Publish Signal Inventory Information	2.4.3	dialog	dIIntersectionSignalInventoryUpdate	3.1.29.1	dIIntersectionSignalInventoryUpdate	
3.3.5.11.1.3	Subscribe to Signal Inventory Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.11.1.4	Contents of the Signal Inventory Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.11.1.5	Contents of the Signal Inventory Information		message	intersectionSignalInventoryMsg	3.2.11.4	intersectionSignalInventoryMsg	
3.3.5.11.1.5.1	Required Signal Inventory Content		data-frame	deviceInventoryHeader	3.3.5.8	device-inventory-header	ASN:intersectionSignalInventoryMsg XML:intersection-signal-inventory-item
3.3.5.11.1.5.1	Required Signal Inventory Content		data-element	transportation-network-name	3.4.21.1	intersection-name	ASN:intersectionSignalInventoryMsg XML:intersection-signal-inventory-item
3.3.5.11.1.5.2.1	Master Controller		data-element	organization-resource-identifier	3.4.16.8	controller-master-id	ASN:intersectionSignalInventoryMsg XML:intersection-signal-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.1.5.2.2	Link Identifiers		data-element	transportation-network-identifier	3.4.20.1	link-id	ASN:intersection-link-list XML:link
3.3.5.11.1.5.2.3	Direction of Traffic		data-element	link-direction	3.4.14.9	link-direction	ASN:intersection-link-list XML:link
3.3.5.11.1.5.2.4	Movement Identifier		data-element	organization-resource-identifier	3.4.16.8	movement-identifier	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.5	Vehicle Movement Approach Link		data-element	organization-resource-identifier	3.4.16.8	approach-link-id	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.6	Pedestrian Movement Approach Link		data-element	organization-resource-identifier	3.4.16.8	approach-link-id	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.7	Departing Link		data-element	organization-resource-identifier	3.4.16.8	departing-link-id	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.8	Crossing Point		data-element	geoLocation	3.6.9.4	crossing-point	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.9	Turning Movement Approach Vector		data-element	intersection-turning-movement-angle	3.4.12.9	approach-vector	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.10	Turning Movement Type		data-element	intersection-turning-movement-code	3.4.12.8	turning-movement-code	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.11	Turning Movement Lanes		data-element	link-lane-number	3.4.14.11	turning-movement-lanes	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.12	Turning Movement Description		data-element	organization-resource-name	3.4.16.9	turning-movement-text	ASN:movement-list XML:intersection-movements
3.3.5.11.1.5.2.13	Phase Identifier		data-element	phaseNumber	3.6.7.17	phase-identifier	ASN:phase-list XML:phases
3.3.5.11.1.5.2.14	Coordinated Phase		data-element	splitCoordPhase	3.6.7.19	coordinated-phase	ASN:phase-list XML:phases
3.3.5.11.1.5.2.15	Concurrent Phases		data-element	phaseNumber	3.6.7.17	concurrent-phases-list	ASN:phase-list XML:phases
3.3.5.11.1.5.2.16	Active Movements		data-element	organization-resource-identifier	3.4.16.8	active-movements-list	ASN:phase-list XML:phases
3.3.5.11.1.5.2.16	Active Movements		data-element	organization-resource-identifier	3.4.16.8	active-movements-list	ASN:overlap-phase-list XML:overlap-phases
3.3.5.11.1.5.2.17	Overlap Phase		data-element	overlapNumber	3.6.7.3	overlap-identifier	ASN:overlap-phase-list XML:overlap-phases

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.1.5.2.18	Overlap Included Phases		data-element	phaseNumber	3.6.7.17	overlap-included-phases	ASN:overlap-phase-list XML:overlap-phases
3.3.5.11.1.5.2.19	Ring Identifier		data-element	organization-resource-identifier	3.4.16.8	ring-identifier	ASN:ring-list XML:rings
3.3.5.11.1.5.2.20	Ring-Phase Assignment		data-element	phaseNumber	3.6.7.17	ring-phase-assignment	ASN:ring-list XML:rings
3.3.5.11.1.5.2.21	Special Function Identifier		data-element	specialFunctionOutputNumber	3.6.7.22	special-function-identifier	ASN:special-functions-list XML:special-functions
3.3.5.11.1.5.2.22	Special Function Description		data-element	organization-resource-name	3.4.16.9	special-function-description	ASN:special-functions-list XML:special-functions
3.3.5.11.1.5.2.23	Time Reference		data-element	time-reference-code	3.4.12.11	time-reference-code	ASN:intersectionSignalInventoryMsg XML:intersection-signal-inventory-item
3.3.5.11.1.5.2.24	Pattern Sync Reference		data-element	timebaseAscPatternSync	3.6.7.23	pattern-sync-reference	ASN:intersectionSignalInventoryMsg XML:intersection-signal-inventory-item
3.3.5.11.2.1	Send Intersection Status Information Upon Request	2.4.1	dialog	dllIntersectionSignalStatusRequest	3.1.11.2	dllIntersectionSignalStatusRequest	
3.3.5.11.2.2	Publish Intersection Status Information	2.4.3	dialog	dllIntersectionSignalStatusUpdate	3.1.29.3	dllIntersectionSignalStatusUpdate	
3.3.5.11.2.3	Subscribe to Signal Status Information	2.4.2	dialog	dllDeviceInformationSubscription	3.1.5.3	dllDeviceInformationSubscription	
3.3.5.11.2.4	Contents of the Intersection Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.11.2.5	Contents of the Intersection Status Information		message	intersectionSignalStatusMsg	3.2.11.6	intersectionSignalStatusMsg	
3.3.5.11.2.5.1	Required Intersection Status Content		data-frame	deviceStatusHeader	3.3.5.13	device-status-header	ASN:intersectionSignalStatusMsg XML:intersection-signal-status-item
3.3.5.11.2.5.1	Required Intersection Status Content		data-element	intersection-signal-control-source	3.4.12.5	signal-control-source	ASN:intersectionSignalStatusMsg XML:intersection-signal-status-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.2.5.1	Required Intersection Status Content		data-element	intersection-planned-signal-timing-mode	3.4.12.3	planned-signal-timing-mode	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.1	Required Intersection Status Content		data-element	intersection-signal-timing-mode	3.4.12.7	current-signal-timing-mode	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.1	Section Identifier - Signal Status		data-element	organization-resource-identifier	3.4.16.8	section-id	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.2	Planned Signal Timing Mode Description		data-element	organization-resource-name	3.4.16.9	planned-signal-timing-mode- description	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.3	Timing Pattern Identifier - Current		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id-current	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.4	Timing Pattern Description		data-element	organization-resource-name	3.4.16.9	timing-pattern-description	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.5	Actuation Mode		data-element	intersection-actuation-mode	3.4.12.1	actuation-mode	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.6	Plan Mode		data-element	splitMode	3.6.7.21	timing-phase-plan-mode	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.7	Cycle Length - Planned		data-element	patternCycleTime	3.6.7.8	cycle-length-planned	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.8	Cycle Length - Current		data-element	patternCycleTime	3.6.7.8	cycle-length-current	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.2.5.2.9	Cycle Length - Previous		data-element	patternCycleTime	3.6.7.8	cycle-length-previous	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.10	Master Cycle Length - Actual		data-element	patternCycleTime	3.6.7.8	cycle-length-master	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.11	Controller Cycle Counter		data-element	coordCycleStatus	3.6.7.1	cycle-counter	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.12	Master Cycle Counter		data-element	coordSyncStatus	3.6.7.2	cycle-counter-master	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.13	Offset Reference		data-element	intersection-offset-reference	3.4.12.2	offset-reference	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.14	Offset - Planned		data-element	patternOffsetTime	3.6.7.9	offset-time-planned	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.15	Offset - Actual		data-element	patternOffsetTime	3.6.7.9	offset-time-current	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.16	Offset - Previous		data-element	patternOffsetTime	3.6.7.9	offset-time-previous	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.17	Controller Timestamp		data-frame	dateTimeZone	3.3.10.1	controller-timestamp	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.18	Phase Split		data-frame	intersectionSignalPhaseSplit	3.3.12.11	phase-split-list	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.2.5.2.19	Ring Status		data-frame	intersectionSignalRingStatus	3.3.12.15	ring-status-list	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.20	Active Phases		data-element	phaseStatusGroupNumber	3.6.7.10	phase-status-group-number	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.20	Active Phases		data-element	phaseStatusGroupGreens	3.6.7.12	phase-status-group-greens	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.20	Active Phases		data-element	phaseStatusGroupWalks	3.6.7.15	phase-status-group-walks	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.21	Phase Status Greens		data-element	phaseStatusGroupNumber	3.6.7.10	phase-status-group-number	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.21	Phase Status Greens		data-element	phaseStatusGroupGreens	3.6.7.12	phase-status-group-greens	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.22	Phase Status Yellows		data-element	phaseStatusGroupNumber	3.6.7.10	phase-status-group-number	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.22	Phase Status Yellows		data-element	phaseStatusGroupYellows	3.6.7.16	phase-status-group-yellows	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.23	Phase Status Reds		data-element	phaseStatusGroupNumber	3.6.7.10	phase-status-group-number	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.23	Phase Status Reds		data-element	phaseStatusGroupReds	3.6.7.14	phase-status-group-reds	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.24	Phase Status Walks		data-element	phaseStatusGroupNumber	3.6.7.10	phase-status-group-number	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.24	Phase Status Walks		data-element	phaseStatusGroupWalks	3.6.7.15	phase-status-group-walks	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.25	Phase Status Pedestrian Clearance		data-element	phaseStatusGroupNumber	3.6.7.10	phase-status-group-number	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.25	Phase Status Pedestrian Clearance		data-element	phaseStatusGroupPedClears	3.6.7.13	phase-status-group-pedclears	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.26	Phase Status Dont Walks		data-element	phaseStatusGroupNumber	3.6.7.10	phase-status-group-number	ASN:phase-status XML:phase-status-group
3.3.5.11.2.5.2.26	Phase Status Dont Walks		data-element	phaseStatusGroupDontWalks	3.6.7.11	phase-status-group-dontwalks	ASN:phase-status XML:phase-status-group

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.2.5.2.27	Overlap Phase Status Greens		data-element	overlapStatusGroupNumber	3.6.7.4	overlap-status-group-number	ASN:overlap-status XML:overlap-status-group
3.3.5.11.2.5.2.27	Overlap Phase Status Greens		data-element	overlapStatusGroupGreens	3.6.7.5	overlap-status-group-greens	ASN:overlap-status XML:overlap-status-group
3.3.5.11.2.5.2.28	Overlap Phase Status Yellows		data-element	overlapStatusGroupNumber	3.6.7.4	overlap-status-group-number	ASN:overlap-status XML:overlap-status-group
3.3.5.11.2.5.2.28	Overlap Phase Status Yellows		data-element	overlapStatusGroupYellows	3.6.7.7	overlap-status-group-yellows	ASN:overlap-status XML:overlap-status-group
3.3.5.11.2.5.2.29	Overlap Phase Status Reds		data-element	overlapStatusGroupNumber	3.6.7.4	overlap-status-group-number	ASN:overlap-status XML:overlap-status-group
3.3.5.11.2.5.2.29	Overlap Phase Status Reds		data-element	overlapStatusGroupReds	3.6.7.6	overlap-status-group-reds	ASN:overlap-status XML:overlap-status-group
3.3.5.11.2.5.2.30	Special Functions		data-element	organization-resource-identifier	3.4.16.8	active-special-functions-list	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.2.5.2.31	Preemption / Priority Description		data-element	organization-resource-name	3.4.16.9	preempt-priority-description	ASN:intersectionSignalStatusM sg XML:intersection-signal-status- item
3.3.5.11.3.1	Send Signal Control Response Upon Request	2.4.1	dialog	dllIntersectionSignalControlRequest	3.1.11.5	dllIntersectionSignalControlReque st	
3.3.5.11.3.2	Contents of Signal Control Request		message	intersectionSignalControlRequestM sg	3.2.11.1	intersectionSignalControlRequest Msg	
3.3.5.11.3.2.1	Required Signal Control Request Content		data-frame	deviceControlRequestHeader	3.3.5.2	device-control-request-header	intersectionSignalControlReque stMsg
3.3.5.11.3.2.1	Required Signal Control Request Content		data-element	intersection-signal-request- command	3.4.12.6	intersection-request-command	intersectionSignalControlReque stMsg
3.3.5.11.3.2.2.1	Signal Timing Mode - Signal Control Request		data-element	intersection-signal-control-mode	3.4.12.4	request-timing-mode	intersection-command- parameters
3.3.5.11.3.2.2.2	Signal Timing Pattern - Signal Control Request		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	intersection-command- parameters
3.3.5.11.3.2.2.3	Offset Adjustment - Signal Control Request		data-element	patternOffsetTime	3.6.7.9	offset-adjustment	intersection-command- parameters
3.3.5.11.3.3	Contents of Signal Control Response		message	intersectionSignalControlResponse Msg	3.2.11.2	intersectionSignalControlRespons eMsg	
3.3.5.11.3.3.1	Required Signal Control Response Content		data-frame	deviceControlResponse	3.3.5.3	device-control-response-header	intersectionSignalControlRespo nseMsg

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.3.3.2.1	Section Identifier - Signal Control		data-element	organization-resource-identifier	3.4.16.8	section-id	intersectionSignalControlResponseMsg
3.3.5.11.3.3.2.2	Timing Mode - Signal Control		data-element	intersection-signal-control-mode	3.4.12.4	request-control-mode	intersectionSignalControlResponseMsg
3.3.5.11.3.3.2.3	Timing Pattern Identifier - Signal Control		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	intersectionSignalControlResponseMsg
3.3.5.11.3.3.2.4	Offset Adjustment - Signal Control Response		data-element	patternOffsetTime	3.6.7.9	offset-adjustment	intersectionSignalControlResponseMsg
3.3.5.11.4.1	Send Signal Control Status Upon Request	2.4.1	dialog	dIDeviceControlStatusRequest	3.1.5.2	dIDeviceControlStatusRequest	
3.3.5.11.4.2	Contents of the Signal Control Status Request		message	deviceControlStatusRequestMsg	3.2.5.3	deviceControlStatusRequestMsg	
3.3.5.11.4.3	Contents of the Signal Control Status Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.11.5.1	Send Cancel Signal Control Response Upon Request	2.4.1	dialog	dIDeviceCancelControlRequest	3.1.5.1	dIDeviceCancelControlRequest	
3.3.5.11.5.2	Contents of Cancel Signal Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.11.5.3	Contents of Cancel Signal Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.11.6.1	Send Signal Timing Pattern Schedule Information Upon Request	2.4.1	dialog	dIIntersectionSignalControlScheduleRequest	3.1.11.6	dIIntersectionSignalControlScheduleRequest	
3.3.5.11.6.2	Publish Signal Timing Pattern Schedule Information	2.4.3	dialog	dIIntersectionSignalControlScheduleUpdate	3.1.29.4	dIIntersectionSignalControlScheduleUpdate	
3.3.5.11.6.3	Subscribe to Signal Timing Pattern Schedule Information	2.4.2	dialog	dIDeviceInformationSubscription	3.1.5.3	dIDeviceInformationSubscription	
3.3.5.11.6.4	Contents of the Signal Timing Pattern Schedule Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.11.6.5	Contents of the Signal Timing Pattern Schedule Information		message	intersectionSignalControlScheduleMsg	3.2.11.3	intersectionSignalControlScheduleMsg	
3.3.5.11.6.5.1	Required Signal Timing Pattern Schedule Content		data-frame	deviceControlScheduleHeader	3.3.5.4	device-control-schedule-header	ASN:intersectionSignalControlScheduleMsg XML:intersection-signal-control-schedule-item
3.3.5.11.6.5.1	Required Signal Timing Pattern Schedule Content		data-element	intersection-signal-control-mode	3.4.12.4	request-control-mode	ASN:intersectionSignalControlScheduleMsg XML:intersection-signal-control-schedule-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.6.5.1	Required Signal Timing Pattern Schedule Content		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	ASN:intersectionSignalControlScheduleMsg XML:intersection-signal-control-schedule-item
3.3.5.11.7.1	Send Signal Timing Pattern Upon Request	2.4.1	dialog	dllIntersectionSignalTimingPatternInventoryRequest	3.1.11.3	dllIntersectionSignalTimingPatternInventoryRequest	
3.3.5.11.7.2	Publish Signal Timing Pattern Information	2.4.3	dialog	dllIntersectionSignalTimingPatternInventoryUpdate	3.1.29.2	dllIntersectionSignalTimingPatternInventoryUpdate	
3.3.5.11.7.3	Subscribe to Signal Timing Pattern Information	2.4.2	dialog	dllIntersectionSignalTimingPatternInventorySubscription	3.1.11.4	dllIntersectionSignalTimingPatternInventorySubscription	
3.3.5.11.7.4	Contents of the Signal Timing Pattern Inventory Request		message	intersectionSignalTimingPatternInventoryRequestMsg	3.2.11.8	intersectionSignalTimingPatternInventoryRequestMsg	
3.3.5.11.7.4.1	Required Signal Timing Pattern Information Inventory Request		data-frame	deviceInformationRequest	3.3.5.6	device-information-request-header	intersectionSignalTimingPatternInventoryRequestMsg
3.3.5.11.7.4.2.1	Timing Pattern Identifier		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	intersectionSignalTimingPatternInventoryRequestMsg
3.3.5.11.7.5	Contents of the Signal Timing Pattern Inventory Information Response		message	intersectionSignalTimingPatternInventoryMsg	3.2.11.7	intersectionSignalTimingPatternInventoryMsg	
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:intersectionSignalTimingPatternInventoryMsg XML:intersection-signal-timing-pattern-inventory-item
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	organization-resource-identifier	3.4.16.8	device-id	ASN:intersectionSignalTimingPatternInventoryMsg XML:intersection-signal-timing-pattern-inventory-item
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	ASN:intersectionSignalTimingPatternInventoryMsg XML:intersection-signal-timing-pattern-inventory-item
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	patternCycleTime	3.6.7.8	cycle-length	ASN:intersectionSignalTimingPatternInventoryMsg XML:intersection-signal-timing-pattern-inventory-item
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	patternOffsetTime	3.6.7.9	offset-time	ASN:intersectionSignalTimingPatternInventoryMsg XML:intersection-signal-timing-pattern-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	phaseNumber	3.6.7.17	phase-identifier	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	splitCoordPhase	3.6.7.19	coordinated-phase	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	splitMode	3.6.7.21	split-mode	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.1	Required Signal Timing Pattern Information Response Content		data-element	splitTime	3.6.7.20	phase-split	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.1	Restrictions - Timing Pattern		data-frame	restrictions	3.3.16.5	restrictions	ASN:intersectionSignalTimingP atternInventoryMsg XML:intersection-signal-timing- pattern-inventory-item
3.3.5.11.7.5.2.2	Description of Timing Pattern		data-element	organization-resource-name	3.4.16.9	timing-pattern-name	ASN:intersectionSignalTimingP atternInventoryMsg XML:intersection-signal-timing- pattern-inventory-item
3.3.5.11.7.5.2.3	Maximum Green Duration		data-element	intersection-timing-duration	3.4.12.10	maximum-green-duration	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.4	Minimum Green Duration		data-element	intersection-timing-duration	3.4.12.10	minimum-green-duration	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.5	Vehicle Clearance Duration		data-element	intersection-timing-duration	3.4.12.10	vehicle-clearance-duration	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.6	Vehicle Red Duration		data-element	intersection-timing-duration	3.4.12.10	vehicle-red-duration	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.7	Minimum Walk Duration		data-element	intersection-timing-duration	3.4.12.10	minimum-walk-duration	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.8	Pedestrian Clearance Duration		data-element	intersection-timing-duration	3.4.12.10	pedestrian-clearance-duration	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.9	Steady-dont-walk Duration		data-element	intersection-timing-duration	3.4.12.10	steady-dont-walk-duration	ASN:phase-tp-list XML:phases
3.3.5.11.7.5.2.10	Phase Sequence Information		data-frame	intersectionSignalSequenceData	3.3.12.16	sequence-information	ASN:intersectionSignalTimingP atternInventoryMsg XML:intersection-signal-timing- pattern-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.7.5.2.11	Timing Pattern Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:intersectionSignalTimingPatternInventoryMsg XML:intersection-signal-timing-pattern-inventory-item
3.3.5.11.8.1	Send Section Status Information Upon Request	2.4.1	dialog	dlSectionStatusRequest	3.1.18.1	dlSectionStatusRequest	
3.3.5.11.8.2	Publish Section Status Information	2.4.3	dialog	dlSectionStatusUpdate	3.1.33.1	dlSectionStatusUpdate	
3.3.5.11.8.3	Subscribe to Section Status Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.11.8.4	Contents of the Section Status Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.11.8.5	Contents of the Section Status Information		message	sectionStatusMsg	3.2.18.6	sectionStatusMsg	
3.3.5.11.8.5.1	Required Section Status Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.1	Required Section Status Content		data-element	organization-resource-identifier	3.4.16.8	section-id	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.1	Required Section Status Content		data-element	organization-resource-identifier	3.4.16.8	node-id-list	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.1	Required Section Status Content		data-element	section-signal-control-mode	3.4.19.1	section-control-mode	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.1	Required Section Status Content		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.2.1	Restrictions - Section Status		data-frame	restrictions	3.3.16.5	restrictions	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.2.2	Section Name		data-element	organization-resource-name	3.4.16.9	section-name	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.2.3	Description of Timing Pattern - Section Status		data-element	organization-resource-name	3.4.16.9	timing-pattern-name	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.2.4	Cycle Length - Section Status		data-element	patternCycleTime	3.6.7.8	cycle-time	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.2.5	Operator Identifier - Section Status		data-element	organization-resource-identifier	3.4.16.8	operator-id	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.2.6	Event Identifier - Section Status		data-element	organization-resource-identifier	3.4.16.8	event-id	ASN:sectionStatusMsg XML:section-status-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.8.5.2.7	Event Response Plan - Section Status		data-element	organization-resource-identifier	3.4.16.8	response-plan-id	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.8.5.2.8	Section Status Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-comm-time	ASN:sectionStatusMsg XML:section-status-item
3.3.5.11.9.1	Send Signal Section Control Response Upon Request	2.4.1	dialog	dlSectionControlRequest	3.1.18.2	dlSectionControlRequest	
3.3.5.11.9.2	Contents of Signal Section Control Request		message	sectionControlRequestMsg	3.2.18.1	sectionControlRequestMsg	
3.3.5.11.9.2.1	Required Signal Section Control Request Content		data-frame	authentication	3.3.3.1	authentication	sectionControlRequestMsg
3.3.5.11.9.2.1	Required Signal Section Control Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	sectionControlRequestMsg
3.3.5.11.9.2.1	Required Signal Section Control Request Content		data-element	organization-resource-identifier	3.4.16.8	section-id	sectionControlRequestMsg
3.3.5.11.9.2.1	Required Signal Section Control Request Content		data-element	organization-resource-identifier	3.4.16.8	request-id	sectionControlRequestMsg
3.3.5.11.9.2.1	Required Signal Section Control Request Content		data-element	section-request-command	3.4.19.2	section-request-command	sectionControlRequestMsg
3.3.5.11.9.2.2.1	Operator Identifier - Section Control		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.5.11.9.2.2.2	Event Identifier - Section Control		data-element	organization-resource-identifier	3.4.16.8	event-id	sectionControlRequestMsg
3.3.5.11.9.2.2.3	Event Response Plan - Section Control		data-element	organization-resource-identifier	3.4.16.8	response-plan-id	sectionControlRequestMsg
3.3.5.11.9.2.2.4	Request Priority - Section Control		data-element	device-command-request-priority	3.4.5.3	command-request-priority	sectionControlRequestMsg
3.3.5.11.9.2.2.5	Signal Timing Mode - Section Control		data-element	intersection-signal-control-mode	3.4.12.4	request-control-mode	section-command-parameters
3.3.5.11.9.2.2.6	Signal Timing Pattern - Section Control		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	section-command-parameters
3.3.5.11.9.2.2.7	Offset Adjustment - Section Control		data-element	patternOffsetTime	3.6.7.9	section-offset-adjustment	section-command-parameters
3.3.5.11.9.2.2.8	Command Begin Time		data-frame	dateTimeZone	3.3.10.1	command-begin-time	sectionControlRequestMsg
3.3.5.11.9.2.2.9	Command End Time		data-frame	dateTimeZone	3.3.10.1	command-end-time	sectionControlRequestMsg
3.3.5.11.9.2.2.10	Section Control Request Date and Time Information		data-frame	dateTimeZone	3.3.10.1	command-request-time	sectionControlRequestMsg
3.3.5.11.9.3	Contents of Signal Section Control Response		message	sectionControlResponseMsg	3.2.18.2	sectionControlResponseMsg	
3.3.5.11.9.3.1	Required Signal Section Control Response Content		data-frame	organizationInformation	3.3.16.3	organization-information	sectionControlResponseMsg

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.9.3.1	Required Signal Section Control Response Content		data-element	organization-resource-identifier	3.4.16.8	section-id	sectionControlResponseMsg
3.3.5.11.9.3.1	Required Signal Section Control Response Content		data-element	organization-resource-identifier	3.4.16.8	request-id	sectionControlResponseMsg
3.3.5.11.9.3.1	Required Signal Section Control Response Content		data-element	device-acknowledge-control	3.4.5.1	request-status	sectionControlResponseMsg
3.3.5.11.9.3.2.1	Restrictions - Section Control		data-frame	restrictions	3.3.16.5	restrictions	sectionControlResponseMsg
3.3.5.11.9.3.2.2	Operator Identifier - Section Control Acknowledge		data-element	organization-resource-identifier	3.4.16.8	operator-id	sectionControlResponseMsg
3.3.5.11.9.3.2.3	Operator Last Revised Date and Time - Section Control		data-frame	dateTimeZone	3.3.10.1	operator-last-revised	sectionControlResponseMsg
3.3.5.11.9.3.2.4	Timing Mode - Section Control		data-element	intersection-signal-control-mode	3.4.12.4	request-control-mode	sectionControlResponseMsg
3.3.5.11.9.3.2.5	Timing Pattern Identifier - Section Control		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	sectionControlResponseMsg
3.3.5.11.10.1	Send Section Control Status Upon Request	2.4.1	dialog	dISectionControlStatusRequest	3.1.18.4	dISectionControlStatusRequest	
3.3.5.11.10.2	Contents of the Section Control Status Request		message	sectionControlStatusRequestMsg	3.2.18.4	sectionControlStatusRequestMsg	
3.3.5.11.10.2.1	Required Section Control Status Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	sectionControlStatusRequestMsg
3.3.5.11.10.2.1	Required Section Control Status Request Content		data-element	organization-resource-identifier	3.4.16.8	section-id	sectionControlStatusRequestMsg
3.3.5.11.10.2.1	Required Section Control Status Request Content		data-element	organization-resource-identifier	3.4.16.8	request-id	sectionControlStatusRequestMsg
3.3.5.11.10.2.2.1	Authentication - Section Control Status		data-frame	authentication	3.3.3.1	authentication	sectionControlStatusRequestMsg
3.3.5.11.10.2.2.1.1	Operator Identifier - Section Control Status		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.5.11.10.3	Contents of the Section Control Status Response		message	sectionControlResponseMsg	3.2.18.2	sectionControlResponseMsg	
3.3.5.11.11.1	Cancel Control Requests for Remote Signal Sections		dialog	dIDeviceCancelControlRequest	3.1.5.1	dIDeviceCancelControlRequest	
3.3.5.11.11.2	Contents of Cancel Section Control Request		message	deviceCancelControlRequestMsg	3.2.5.1	deviceCancelControlRequestMsg	
3.3.5.11.11.3	Contents of Cancel Section Control Request Response		message	deviceControlResponseMsg	3.2.5.2	deviceControlResponseMsg	
3.3.5.11.12.1	Send Section Timing Pattern Schedule Information Upon Request	2.4.1	dialog	dISectionControlScheduleRequest	3.1.18.3	dISectionControlScheduleRequest	

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.12.2	Publish Section Timing Pattern Schedule Information	2.4.3	dialog	dlSectionControlScheduleUpdate	3.1.33.2	dlSectionControlScheduleUpdate	
3.3.5.11.12.3	Subscribe to Section Timing Pattern Schedule Information	2.4.2	dialog	dlDeviceInformationSubscription	3.1.5.3	dlDeviceInformationSubscription	
3.3.5.11.12.4	Contents of the Section Timing Pattern Schedule Request		message	deviceInformationRequestMsg	3.2.5.4	deviceInformationRequestMsg	
3.3.5.11.12.5	Contents of the Section Timing Pattern Schedule Information		message	sectionControlScheduleMsg	3.2.18.3	sectionControlScheduleMsg	
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	organization-resource-identifier	3.4.16.8	section-id	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	timeBaseScheduleNumber	3.6.6.1	time-base-schedule-number	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	timeBaseScheduleMonth	3.6.6.2	time-base-schedule-month	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	timeBaseScheduleDay	3.6.6.3	time-base-schedule-day	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	timeBaseScheduleDate	3.6.6.4	time-base-schedule-date	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	timeBaseScheduleDayPlan	3.6.6.5	time-base-schedule-day-plan	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	dayPlanHour	3.6.6.6	day-plan-hour	ASN:sectionControlScheduleMsg XML:section-control-schedule-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	dayPlanMinute	3.6.6.7	day-plan-minute	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	organization-resource-identifier	3.4.16.8	node-id-list	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	intersection-signal-control-mode	3.4.12.4	request-control-mode	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.1	Required Section Timing Pattern Schedule Content		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.12.5.2.1	Restrictions - Section Schedule		data-frame	restrictions	3.3.16.5	restrictions	ASN:sectionControlScheduleMsg XML:section-control-schedule-item
3.3.5.11.13.1	Send Signal Control Priority Queue Information Upon Request	2.4.1	dialog	dllIntersectionSignalPriorityQueueRequest	3.1.11.7	dllIntersectionSignalPriorityQueueRequest	
3.3.5.11.13.2	Contents of the Signal Control Priority Queue Request		message	devicePriorityQueueRequestMsg	3.2.5.5	devicePriorityQueueRequestMsg	
3.3.5.11.13.3	Contents of the Signal Control Priority Queue Response		message	intersectionSignalPriorityQueueMsg	3.2.11.5	intersectionSignalPriorityQueueMsg	
3.3.5.11.13.3.1	Required Signal Control Priority Queue Response Content		data-frame	devicePriorityQueueHeader	3.3.5.9	device-priority-queue-header	ASN:intersectionSignalPriorityQueueMsg XML:intersection-signal-priority-queue-item
3.3.5.11.13.3.1	Required Signal Control Priority Queue Response Content		data-element	intersection-signal-request-command	3.4.12.6	intersection-request-command	ASN:intersectionSignalPriorityQueueMsg XML:intersection-signal-priority-queue-item
3.3.5.11.13.3.2.1	Signal Timing Mode - Signal Queue		data-element	intersection-signal-control-mode	3.4.12.4	request-timing-mode	intersection-queue-parameters

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.13.3.2.2	Signal Timing Pattern - Signal Queue		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	intersection-queue-parameters
3.3.5.11.13.3.2.3	Offset Adjustment - Signal Queue		data-element	patternOffsetTime	3.6.7.9	offset-adjustment	intersection-queue-parameters
3.3.5.11.14.1	Send Section Control Priority Queue Information Upon Request	2.4.1	dialog	dISectionPriorityQueueRequest	3.1.18.5	dISectionPriorityQueueRequest	
3.3.5.11.14.2	Contents of the Section Control Priority Queue Request		message	devicePriorityQueueRequestMsg	3.2.5.5	devicePriorityQueueRequestMsg	
3.3.5.11.14.3	Contents of the Section Control Priority Queue Response		message	sectionPriorityQueueMsg	3.2.18.5	sectionPriorityQueueMsg	
3.3.5.11.14.3.1	Required Section Control Priority Queue Response Content		data-frame	devicePriorityQueueHeader	3.3.5.9	device-priority-queue-header	sectionPriorityQueueMsg
3.3.5.11.14.3.1	Required Section Control Priority Queue Response Content		data-element	section-request-command	3.4.19.2	section-request-command	sectionPriorityQueueMsg
3.3.5.11.14.3.2.1	Signal Timing Mode - Section Queue		data-element	intersection-signal-control-mode	3.4.12.4	request-control-mode	section-queue-parameters
3.3.5.11.14.3.2.2	Timing Pattern Identifier - Section Queue		data-element	organization-resource-identifier	3.4.16.8	timing-pattern-id	section-queue-parameters
3.3.5.11.14.3.2.3	Offset Adjustment - Section Queue		data-element	patternOffsetTime	3.6.7.9	section-offset-adjustment	section-queue-parameters
3.3.5.11.15.1	Send Section Timing Pattern Upon Request	2.4.1	dialog	dISectionSignalTimingPatternInventoryRequest	3.1.18.6	dISectionSignalTimingPatternInventoryRequest	
3.3.5.11.15.2	Publish Section Timing Pattern Information	2.4.3	dialog	dISectionSignalTimingPatternInventoryUpdate	3.1.33.3	dISectionSignalTimingPatternInventoryUpdate	
3.3.5.11.15.3	Subscribe to Section Timing Pattern Information	2.4.2	dialog	dISectionSignalTimingPatternInventorySubscription	3.1.18.7	dISectionSignalTimingPatternInventorySubscription	
3.3.5.11.15.4	Contents of the Section Timing Pattern Inventory Request		message	sectionSignalTimingPatternInventoryRequestMsg	3.2.18.8	sectionSignalTimingPatternInventoryRequestMsg	
3.3.5.11.15.4.1	Required Section Timing Pattern Information Inventory Request		data-frame	deviceInformationRequest	3.3.5.6	device-information-request-header	SectionSignalTimingPatternInventoryRequestMsg
3.3.5.11.15.4.2.1	Section Timing Pattern Identifier		data-element	organization-resource-identifier	3.4.16.8	section-timing-pattern-id	SectionSignalTimingPatternInventoryRequestMsg
3.3.5.11.15.5	Contents of the Section Timing Pattern Inventory Information Response		message	sectionSignalTimingPatternInventoryMsg	3.2.18.7	sectionSignalTimingPatternInventoryMsg	
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:sectionSignalTimingPatternInventoryMsg XML:signal-section-timing-pattern-inventory-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	organization-resource-identifier	3.4.16.8	section-id	ASN:sectionSignalTimingPatternInventoryMsg XML:signal-section-timing-pattern-inventory-item
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	organization-resource-identifier	3.4.16.8	section-timing-pattern-id	ASN:sectionSignalTimingPatternInventoryMsg XML:signal-section-timing-pattern-inventory-item
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	patternCycleTime	3.6.7.8	section-cycle-length	ASN:sectionSignalTimingPatternInventoryMsg XML:signal-section-timing-pattern-inventory-item
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	organization-resource-identifier	3.4.16.8	intersection-id	ASN:intersection-tp-list XML:intersection-timing
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	patternCycleTime	3.6.7.8	cycle-length	ASN:intersection-tp-list XML:intersection-timing
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	patternOffsetTime	3.6.7.9	offset-time	ASN:intersection-tp-list XML:intersection-timing
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	phaseNumber	3.6.7.17	phase-identifier	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	splitCoordPhase	3.6.7.19	coordinated-phase	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	splitMode	3.6.7.21	split-mode	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.1	Required Section Timing Pattern Information Response Content		data-element	splitTime	3.6.7.20	phase-split	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.2.1	Restrictions - Section Timing Pattern		data-frame	restrictions	3.3.16.5	restrictions	ASN:sectionSignalTimingPatternInventoryMsg XML:signal-section-timing-pattern-inventory-item
3.3.5.11.15.5.2.2	Description of Section Timing Pattern		data-element	organization-resource-name	3.4.16.9	section-timing-pattern-name	ASN:sectionSignalTimingPatternInventoryMsg XML:signal-section-timing-pattern-inventory-item
3.3.5.11.15.5.2.3	Maximum Green Duration - Section Timing Pattern		data-element	intersection-timing-duration	3.4.12.10	maximum-green-duration	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.2.4	Minimum Green Duration - Section Timing Pattern		data-element	intersection-timing-duration	3.4.12.10	minimum-green-duration	ASN:phase-tp-list XML:phases

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.5.11.15.5.2.5	Vehicle Clearance Duration - Section Timing Pattern		data-element	intersection-timing-duration	3.4.12.10	vehicle-clearance-duration	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.2.6	Vehicle Red Duration - Section Timing Pattern		data-element	intersection-timing-duration	3.4.12.10	vehicle-red-duration	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.2.7	Minimum Walk Duration - Section Timing Pattern		data-element	intersection-timing-duration	3.4.12.10	minimum-walk-duration	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.2.8	Pedestrian Clearance Duration - Section Timing Pattern		data-element	intersection-timing-duration	3.4.12.10	pedestrian-clearance-duration	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.2.9	Steady-dont-walk Duration - Section Timing Pattern		data-element	intersection-timing-duration	3.4.12.10	steady-dont-walk-duration	ASN:phase-tp-list XML:phases
3.3.5.11.15.5.2.10	Phase Sequence Information - Section Timing Pattern		data-frame	intersectionSignalSequenceData	3.3.12.16	sequence-information	ASN:intersection-tp-list XML:intersection-timing
3.3.5.11.15.5.2.11	Section Timing Pattern Inventory Date and Time Change Information		data-frame	dateTimeZone	3.3.10.1	last-update-time	ASN:sectionSignalTimingPatternInventoryMsg XML:signal-section-timing-pattern-inventory-item
3.3.6.1.1.1	Send Traffic Monitoring Data Inventory Information Upon Request	2.4.1	dialog	dlArchivedDataTrafficMonitoringMetadataRequest	3.1.1.1	dlArchivedDataTrafficMonitoringMetadataRequest	
3.3.6.1.1.2	Contents of the Traffic Monitoring Data Inventory Request		message	archivedDataTrafficMonitoringMetadataRequestMsg	3.2.1.4	archivedDataTrafficMonitoringMetadataRequestMsg	
3.3.6.1.1.2.1	Required Traffic Monitoring Data Inventory Request Content		data-frame	organizationInformation	3.3.16.3	organization-information	archivedDataTrafficMonitoringMetadataRequestMsg
3.3.6.1.1.2.1	Required Traffic Monitoring Data Inventory Request Content		data-frame	organizationInformation	3.3.16.3	organization-requesting	archivedDataTrafficMonitoringMetadataRequestMsg
3.3.6.1.1.2.2.1	Authentication - Traffic Monitoring Data		data-frame	authentication	3.3.3.1	authentication	archivedDataTrafficMonitoringMetadataRequestMsg
3.3.6.1.1.2.2.1.1	Operator Identifier - Traffic Monitoring Data		data-element	organization-resource-identifier	3.4.16.8	operator-id	authentication
3.3.6.1.1.2.2.2	Data Set Type		data-element	archived-data-set-type	3.4.1.3	filter-data-set-type	archivedDataTrafficMonitoringMetadataRequestMsg
3.3.6.1.1.2.2.3	Data Collection Period		data-frame	dateTimeZone	3.3.10.1	filter-collection-period-start	archivedDataTrafficMonitoringMetadataRequestMsg
3.3.6.1.1.2.2.3	Data Collection Period		data-frame	dateTimeZone	3.3.10.1	filter-collection-period-end	archivedDataTrafficMonitoringMetadataRequestMsg
3.3.6.1.1.2.2.4	Geographic Location - Traffic Monitoring Data		data-element	organization-resource-name	3.4.16.9	filter-location-county	archivedDataTrafficMonitoringMetadataRequestMsg

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.6.1.1.2.2.4	Geographic Location - Traffic Monitoring Data		data-element	contact-mailing-address-state	3.4.16.3	filter-location-state	archivedDataTrafficMonitoringMetadataRequestMsg
3.3.6.1.1.3	Contents of the Traffic Monitoring Data Inventory Information		message	archivedDataTrafficMonitoringMetadataMsg	3.2.1.3	archivedDataTrafficMonitoringMetadataMsg	
3.3.6.1.1.3.1	Required Traffic Monitoring Data Inventory Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.1	Required Traffic Monitoring Data Inventory Content		data-element	archived-data-set-type	3.4.1.3	data-set-type	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.1	Required Traffic Monitoring Data Inventory Content		data-element	event-description-notes-and-comments	3.4.8.10	data-set-description	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.1	Required Traffic Monitoring Data Inventory Content		data-frame	dateTimeZone	3.3.10.1	data-collection-time-period-start	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.1	Required Traffic Monitoring Data Inventory Content		data-frame	dateTimeZone	3.3.10.1	data-collection-time-period-end	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.1	Required Traffic Monitoring Data Inventory Content		data-frame	dateTimeZone	3.3.10.1	data-set-publication-date-time	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.1	Restrictions - Traffic Monitoring Data		data-frame	restrictions	3.3.16.5	restrictions	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.2	Purpose of the Data Set		data-element	event-description-notes-and-comments	3.4.8.10	data-set-purpose	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.3	Title of the Data Set		data-element	organization-resource-name	3.4.16.9	data-set-title	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.6.1.1.3.2.4	Version of the Data Set		data-element	organization-resource-identifier	3.4.16.8	data-set-version	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.5	Publication Information of the Data Set		data-element	event-description-notes-and-comments	3.4.8.10	data-set-publication-information	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.6	Progress of the Data Set		data-element	archived-data-set-progress-status	3.4.1.2	data-set-progress-status	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.7	Maintenance of the Data Set		data-element	archived-data-set-maintenance-frequency	3.4.1.1	data-set-maintenance-frequency	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.8	Data Set Uniform Resource Locator (URL)		data-element	url-reference	3.4.10.5	data-set-url	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.9	Data Set URL Reference Medium		data-element	url-reference-type	3.4.10.6	url-reference-medium	data-set-url
3.3.6.1.1.3.2.10	Roadway Network Identifier - Traffic Monitoring Data		data-element	transportation-network-identifier	3.4.20.1	data-set-roadway-network-id-list	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.11	Link Identifier - Traffic Monitoring Data		data-element	transportation-network-identifier	3.4.20.1	data-set-link-id-list	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.12	Route Designator - Traffic Monitoring Data		data-element	link-route-designator	3.4.14.29	data-set-route-designator-list	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.1.1.3.2.13	Linear Reference - Traffic Monitoring Data		data-element	link-location-linear-reference	3.4.14.15	data-set-linear-reference-list	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.6.1.1.3.2.13	Linear Reference - Traffic Monitoring Data		data-element	link-location-linear-reference-version	3.4.14.16	data-set-linear-reference-version	ASN:archivedDataTrafficMonitoringMetadataMsg XML:archived-data-traffic-monitoring-metadata-item
3.3.6.2.1	Send Processing Documentation Metadata Information Upon Request	2.4.1	dialog	dlArchivedDataProcessingDocumentationMetadataRequest	3.1.1.2	dlArchivedDataProcessingDocumentationMetadataRequest	
3.3.6.2.2	Contents of the Processing Documentation Metadata Information Request		message	archivedDataProcessingDocumentationMetadataRequestMsg	3.2.1.2	archivedDataProcessingDocumentationMetadataRequestMsg	
3.3.6.2.2.1	Required Processing Documentation Metadata Information Request Content		data-frame	authentication	3.3.3.1	authentication	archivedDataProcessingDocumentationMetadataRequestMsg
3.3.6.2.2.1	Required Processing Documentation Metadata Information Request Content		data-frame	organizationInformation	3.3.16.3	organization-information	archivedDataProcessingDocumentationMetadataRequestMsg
3.3.6.2.3	Contents of the Processing Documentation Metadata Information		message	archivedDataProcessingDocumentationMetadataMsg	3.2.1.1	archivedDataProcessingDocumentationMetadataMsg	
3.3.6.2.3.1	Required Processing Documentation Metadata Information Content		data-frame	organizationInformation	3.3.16.3	organization-information	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.1	Required Processing Documentation Metadata Information Content		data-frame	dateTimeZone	3.3.10.1	last-update-date	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.1	Required Processing Documentation Metadata Information Content		data-element	organization-resource-name	3.4.16.9	processing-metadata-name	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.1	Required Processing Documentation Metadata Information Content		data-element	organization-resource-identifier	3.4.16.8	processing-metadata-version	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.2.1	Restrictions - Archive Metadata		data-frame	restrictions	3.3.16.5	restrictions	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item

Req ID (Vol. I)	Requirement	Dialog	DC Type	Definition Class Name	DC ID (Vol. II)	Data Concept Instance Name	Reference DC
3.3.6.2.3.2.2	Publication Date and Time		data-frame	dateTimeZone	3.3.10.1	publication-date-time	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.2.3	Processing Method		data-element	organization-resource-name	3.4.16.9	processing-method-name	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.2.4	Processing Method Description		data-element	event-description-notes-and-comments	3.4.8.10	processing-method-description	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.2.5	Application Rules		data-element	event-description-notes-and-comments	3.4.8.10	processing-method-application-rules	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item
3.3.6.2.3.2.6	Enumeration		data-element	event-description-notes-and-comments	3.4.8.10	processing-method-results	ASN:archivedDataProcessingDocumentationMetadataMsg XML:archived-data-processing-documentation-metadata-item