Technical Memorandum

SunGuide® Software System

SunGuide Software Release 6.0 Independent Verification and Validation Test Procedures

Version 1.0

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Prepared for:

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Appendix A: Requirements Reference 1

List of Acronyms and Abbreviations

AVL ..... Automatic Vehicle Location
AVLRR ..... Automatic Vehicle Location Road Ranger
C2C ..... Center-to-Center
CAD ..... Computer-aided Dispatch
CMB ..... Change Management Board
CSV ..... Comma-Separated Values
DAR ..... Data Archive for RITIS
DMS ..... Dynamic Message Sign
EM ..... Event Management
FHP ..... Florida Highway Patrol
FL511 ..... Florida Advanced Travel Information System
FTP ..... File Transfer Protocol
GUI ..... Graphical User Interface
HAR ..... Highway Advisory Radio
HD ..... High Definition
IV&V ..... Independent Verification and Validation
MAS ..... Message Arbitration Subsystem
OOCEA ..... Orlando-Orange County Expressway Authority
PS ..... Pricing Subsystem
RITIS ..... Regional Integrated Transportation Information System
RSE ..... Roadside Equipment
SPARR ..... Smart Phone Application for Road Rangers
TAM ..... Traffic Advisory Message
TSS ..... Traffic Sensor Subsystem
UDP ..... User Datagram Protocol
UTC ..... Coordinated Universal Time

1 Scope

This document contains the testing procedures for the independent verification and validation (IV&V) of SunGuide® Software Release 6.0. Details for the testing times and locations, required equipment, and overall testing strategy can be found in the *SunGuide_Release_6-0_IVV_Test_Plan*.

1.1 Referenced Documents (http://sunguidesoftware.com/document-library)

- *SunGuide Software Integration Plan*
- *SunGuide-SIP-6.0-Draft*
- *SunGuide Release 6.0 Independent Verification and Validation Test Plan*
- *Independent Verification and Validation Test Procedures for Video on Desktop*

2 Test Case Detailed Procedures

This section provides the detailed test procedures. Each test case includes objectives, necessary setup and resources, and detailed steps to be followed. The starting and ending times of each test case are to be collected and recorded. Upon the successful completion of each test case, tester and witness signatures will confirm the complete execution of the test steps. Every test requires access to an operational SunGuide software workstation, so this resource is not listed below for any tests.

2.1 Release 6.0 Enhancement Test Cases

2.1.1 Test Case 1: SunGuide software and database upgrade

The objective of this test is to verify that the installation package and documentation is sufficient to perform the upgrade to the software and the database. This verification will include comparing the ERWin database model against the SunGuide software database to qualitatively view how the model conforms to the SunGuide software database design, while verifying that the items agreed upon in discussions between the Florida Department of Transportation (FDOT) and the contractor are included in the model documentation and applied to all appropriate database objects in the model. Also included will be verification that the database tools provided meet the needs of the installation technician to perform the conversion and other necessary database operations.

2.1.1.1 Test Resources and Setup Conditions

Requires access to:

- SunGuide 5.1.1 to 6.0 database upgrade script
- Oracle SQL Developer
- ERwin Data Modeler
- SunGuide 6.0 ERwin physical model
- SunGuide 5.1.1 Oracle database

2.1.1.2 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		On the SunGuide software 5.1.1.database server start SQL Developer.	[redacted] SGSQL60	

Step	Requirement	Procedure	Notes	Pass/Fail
2		Selected the SunGuide software 5.1.1 database from the list of connections; right click on the database, and click on connect.		
3		Click on file, select open and navigate to the SunGuide 5.1.1 to 6.0 database upgrade script.		
4		Open the script file and the contents will appear in the SQL Developer window. Click on the green arrow to begin execution of the script.		
5		Once the script completes, check the result window. There should be no errors.		
6		Did the script execute successfully?		**Pass☐ Fail☐**
7		On the SunGuide software 5.1.1.database server start ERwin Data Modeler.	[redacted] SunGuide Database Model from [redacted] POST-FAT 2013.05.03	
8		Click on Actions and select Reverse Engineer.		
9		On the dialogue, select Logical/Physical model and select Oracle as the target database. Click Next.		
10		Ensure Database is selected on the Reverse Engineer From Option and Click Next.		
11		On the new dialogue, select Database Authentication and enter the username (sys) and the password. Under Parameters Sysdba, check the box and click on connect. The action will import the upgraded SunGuide software 5.1.1 database into ERwin.		
12		Open the ERwin SunGuide software 6.0 Physical model. Click on File and select open. Navigate to the SunGuide		

Step	Requirement	Procedure	Notes	Pass/Fail
		software 6.0 ERwin Physical model, select the model and open it.		
13		Compare the two models. Are the two models the same?		**Pass□ Fail□**
14		Review the imported SunGuide 5.1.1 to 6.0 database for stored procedures and/or triggers.	This can be performed by inspection of the database itself and/or the imported ERwin model.	
15	DB023	Were any stored procedures or triggers present?	Yes indicates a potential failure.	**Yes□ No□**
16	DB023A	If there were stored procedures or triggers present, were they pre-approved by FDOT?	No indicates a failure.	**Yes□ No□**
17		Review tables from DB033 to verify that a state flag was added.		
18	DB033	Do all the tables from requirement DB033 have a state flag?		**Pass□ Fail□**
19		Review tables to ensure the unique identifier was added.		
20	DB022	Did all tables have a new unique identifier?		**Pass□ Fail□**
21		Log into SunGuide 6.0 that connects to the upgraded SunGuide 5.1.1 to 6.0 database and verify that the user entered names are editable.		
22		Are the user entered names editable?		**Pass□ Fail□**
23	DB031		Regression testing for the upgraded SunGuide 5.1.1 to 6.0 Oracle database is performed in test cases 3.62 and 3.63.	

2.1.2 Test Case 2: Oracle and MS SQL Server compatibility

The objective of this test is to verify that SunGuide software supports both MS SQL Server and Oracle. Also, the unique identifier for objects in the database will be modified to an uneditable numeric identifier instead of the currently used user entered name of the object. This test will verify that the name is now editable and no longer used as the identifier.

2.1.2.1 Test Resources and Setup Conditions

Requires access to:

- Oracle SQL Developer
- SQL Server Management Studio
- ERwin Data Modeler
- SunGuide 6.0 ERwin physical model
- SunGuide 5.1.1 Oracle database
- SunGuide 6.0 Oracle database
- SunGuide 6.0 SQL Server database

2.1.2.2 Test Script

Step	Requirement	Procedure	Notes	Pass/Fail
1		Start Erwin data modeler	These test steps will verify that the Erwin data model can successfully create and populate an Oracle database. [redacted] SunGuide Database Model from [redacted] POST-FAT 2013.05.03	
2		Click on file, select open and navigate to the SunGuide 6.0 ERwin Logical data model		
3		Click on Subject Areas from the list on the left hand side.		
4		Are there subject areas defined that relate to the SunGuide subsystems?		**Pass□ Fail□**
5		Click on file, select open and navigate to the SunGuide 6.0 ERwin Oracle Physical data model.	The data model will be displayed in graphical format.	

Step	Requirement	Procedure	Notes	Pass/Fail
6		Did the Oracle physical model successfully display?		**Pass Fail**
7		Review the data elements (e.g., tables, columns, etc.) descriptions		
8		Where the data elements descriptions complete?		**Pass Fail**
9		Click on Actions, select Forward Engineer and then select Schema.	Ensure the Physical model diagram is active (click in the diagram if necessary).	
10		A new window open "Forward Engineer Schema Generation". Select Report.	Take all the defaults.	
11		A new window opens to save the script to a file.		
12		Enter a filename. Click on the save button and save the script to a known location.	Note the location: _____	
13		Move the file to the Oracle database server	[redacted]	
14		Using SQLPLUS, execute the batch file to build the Oracle database.	Sqlplus sys/floridadot@sgd9ivv2 as sysdba @Oracle sg scripts.ddl P:\oradata\SGD9IVV1\SG P:\oradata\SGD9IVV1\ODS P:\oradata\SGD9IVV1\CVS	
15	DB025 & DB026	Did the script execute successfully?		**Pass Fail**
16		Using the Oracle physical model, verify that no stored procedures or triggers exist in the model.		
17	DB023	Were any stored procedures or triggers present?	Yes indicates a potential failure.	**Yes No**

Step	Requirement	Procedure	Notes	Pass/Fail
18	DB023A	If there were stored procedures or triggers present, were they pre-approved by FDOT?	No indicates a failure.	**Yes☐ No☐**
19		Review tables from DB033 to verify that a state flag was added.		
20	DB033	Do all the tables from requirement DB033 have a state flag?		**Pass☐ Fail☐**
21		Review tables to ensure the unique identifier was added.		
22	DB022	Did all tables have a new unique identifier?		**Pass☐ Fail☐**
23		Log into SunGuide 6.0 that connects to the Oracle SunGuide 6.0 database and verify that the user entered names are editable.		
24		Are the user entered names editable?		**Pass☐ Fail☐**
25	DB031		Regression testing for the SunGuide 6.0 Oracle database is performed in test cases 3.62 and 3.63.	
26		Click on the SunGuide 6.0 ERwin SQL Server physical data model.	The data model is displayed in graphical format.	
27		Did the SQL Server physical model successfully display?		**Pass☐ Fail☐**
28		Review the data elements (e.g., tables, columns, etc.) descriptions		
29		Where the data elements descriptions complete?		**Pass☐ Fail☐**
30		Click on Actions, select Forward Engineer and then select Schema.	Ensure the Physical model diagram is active (click in the diagram if necessary).	
31		A new window open “Forward Engineer Schema Generation”. Select Report.	Take defaults.	
32		A new window opens to save the script to a file.		

Step	Requirement	Procedure	Notes	Pass/Fail
33		Enter a filename. Click on the save button and save the script to a known location.	Note the location: _____	
34		Move the build file and the script file to the SQL Server database server.	Build filename: Sqlserverdb Script filename: create sunguide sqlserver.ddl	
35		Using SQLCMD, execute the build file to build the SQL Server database.		
36	DB025 & DB026	Did the script execute successfully?		**Pass□ Fail□**
37		Using the SQL Server physical model, verify that no stored procedures or triggers exist in the model.		
38	DB023	Were any stored procedures or triggers present?	Yes indicates a potential failure.	**Yes□ No□**
39	DB023A	If there were stored procedures or triggers present, were they pre-approved by FDOT?	No indicates a failure.	**Yes□ No□**
40		Review tables from DB033 to verify that a state flag was added.		
41	DB033	Do all the tables from requirement DB033 have a state flag?		**Pass□ Fail□**
42		Review tables to ensure the unique identifier was added.		
43	DB022	Did all tables have a new unique identifier?		**Pass□ Fail□**
44		Log into SunGuide 6.0 that connects to the SunGuide SQL Server 6.0 database and verify that the user entered names are editable.		
45		Are the user entered names editable?		**Pass□ Fail□**
46	DB031		Regression testing for SunGuide 6.0 SQL Server database is performed in test cases 3.62 and 3.63.	

2.1.2.3 Test Case 2-a: Database Model Verification

The objective of this test is to verify that the Erwin-created database model contains all the required elements of the original SunGuide software Oracle database along with the required modifications (additions and deletions). The required versions of Oracle and SQL Server are verified.

2.1.2.3.1 Test Resources and Setup Conditions

Requires access to:

- ERwin Data Modeler
- Oracle SQL Developer
- SunGuide 6.0 ERwin physical model
- SunGuide 5.1.1 Oracle database

2.1.2.3.2 Test Script

Step	Requirement	Procedure	Notes	Pass/Fail
1	DB024	Verify the Oracle database server version is 11.1.0.7		**Pass☐ Fail☐**
2	DB024	Verify the SQL Server is 2012 Standard Edition		**Pass☐ Fail☐**
3		Start Erwin data modeler	These test steps will verify that the Erwin data model can successfully create and populate an Oracle database	
4		Click on file, select open and navigate to the SunGuide 6.0 ERwin logical data model.	The data model will be displayed in graphical format.	
5		Start Oracle SQL Developer.		
6		Righti click on the SunGuide Oracle 5.1.1 database and select Connect.		
7		Expand the database to show the folders. Click on the + next to other users to expand.		
8		Click on + next to FDOT_OWN to expand the list.		
9		Click on + next to Tables to view the list of tables.		
10		Compare the tables from the FDOT_OWN list to the ones in		

Step	Requirement	Procedure	Notes	Pass/Fail
		the ERwin data model.		
11		Are the tables the same in both the data model and database		**Pass Fail**
12		Compare the tables' column definitions. Are the column definitions the same?		**Pass Fail**
13		Review the ERwin data model for stored procedures and/or triggers.	This can be performed by inspection of the database itself and/or the imported ERwin model.	
14	DB023	Were any stored procedures or triggers present?	Yes indicates a potential failure.	**Yes No**
15	DB023A	If there were stored procedures or triggers present, were they pre-approved by FDOT?	No indicates a failure.	**Yes No**
16		Review tables from DB033 to verify that a state flag was added.		
17	DB033	Do all the tables from requirement DB033 have a state flag?		**Pass Fail**
18		Review tables to ensure the unique identifier was added.		
19	DB022	Did all tables have a new unique identifier?		**Pass Fail**

2.1.2.4 Test Case 2-b: Database Tool Verification

The objective of this test is to verify that the software tools used to support database functions, such as import/export, perform the implemented functionality correctly.

2.1.2.4.1 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database tools
- SunGuide 6.0 Oracle database with data
- SunGuide 6.0 SQL Server database with data

2.1.2.4.2 Test Script

Step	Requirement	Procedure	Notes	Pass/Fail

Step	Requirement	Procedure	Notes	Pass/Fail
1		Verify the the SunGuide software tools function as designed		
2	DB027 & DB027A	Do the SunGuide software tools function as designed?		**Pass☐ Fail☐**

2.1.2.5 Test Case 2-c: Data Archive Batch Insert Verification

The objective of this test is to verify that batch inserts are used to archive data as needed.

2.1.2.5.1 Test Resources and Setup Conditions

Requires access to:

- SunGuide 6.0 source code

2.1.2.5.2 Test Script

Step	Requirement	Procedure	Notes	Pass/Fail
1		Review the SunGuide 6.0 source code where archiving is performed.		
2	DB029	Does the source code implement batch inserts for archiving?		**Pass☐ Fail☐**

2.1.2.6 Test Case 2-d: Database Performance Verification

The objective of this test is to verify the performance of Oracle and SQL Server databases.

2.1.2.6.1 Test Resources and Setup Conditions

Requires access to:

- SunGuide Release 5.1.1 District database with large number of sensors defined
- Tool to create 10,000 detector links
- SunGuide 6.0 software installed
- SQL Developer
- SQL Server Studio Management

2.1.2.6.2 Test Script

Step	Requirement	Procedure	Notes	Pass/Fail
1		Using an existing district 5.1.1 database, migrate the database to an Oracle 6.0 migrated database.		
2		Configure 10,000 detector links.		
3		Start the necessary subsystems including TSS to process the detectors data and connect the Oracle 6.0 migrated database.		
4		Configure and start TSS simulators to handle the 10,000 detector links.		
5	**DB030**	Verify that TSS data is archived no later that 2 batch insert time periods following the distribution of the data from TSS		**Pass Fail**
6		Migrate the Oracle 6.0 database with the configured detector links to an SQL Server 6.0 database.		
7		Start the necessary subsystems including TSS to process the detectors data and connect the SQL Server 6.0 migrated database.		
8		Configure and start TSS simulators to handle the 10,000 detector links.		
9	**DB030**	Verify that TSS data is archived no later that 2 batch insert time periods following the distribution of the data from TSS		**Pass Fail**

2.1.2.7 Test Case 2-e: High Availability and Disaster Recovery Verification

The objective of this test is to verify that Oracle and SQL Server provide the appropriate tools to maintain high availability and provide disaster recovery functions.

2.1.2.7.1 Test Resources and Setup Conditions

Requires access to:

- Oracle Database Management Tools

- SQL Server Database Management Tools

2.1.2.7.2 Test Script

Step	Requirement	Procedure	Notes	Pass/Fail
1		Review the Oracle Database Management Tools for high availability and disaster recovery tools.		
2	DB028	Does the Oracle provide the required tools?		**Pass Fail**
3		Review the SQL Server Database Management Tools for high availability and disaster recovery tools.		
4	DB028	Does the SQL Server provide the required tools?		**Pass Fail**

2.1.2.8 Test Case 2-f: Ceased Use Flag Record Not Deleted

The objective of this test is to verify that a database object can be deleted by a user, but it will not be deleted from the database table. A ceased use flag is implemented to mark whether the record has been logically deleted or not.

2.1.2.8.1 Test Resources and Setup Conditions

Requires access to:

- SunGuide 6.0 installed software
- SunGuide 6.0 Oracle database with data
- SunGuide 6.0 SQL Server database with data

2.1.2.8.2 Test Script

Step	Requirement	Procedure	Notes	Pass/Fail
1		If a browser on the SunGuide software workstation is not already connected to the desired Adiminstrative Editor (AE), perform the following: On the SunGuide software		

Step	Requirement	Procedure	Notes	Pass/Fail
		workstation, launch a browser and access the address of the web server of the desired SunGuide software system Click on the link for the AE		
2		Log in into the AE with your user name and password.		
3		For each of the items in Table 3.1.8-1, use AE to add the item.		
4		Upon successful addition of the item, delete the item.		
5		From the database client, navigate to the affected database table.		
6		Verify the ceased use flag is set and record the pass/fail results in the table below		

A database object that can be deleted by a user shall include a flag that signifies the state of the object.

This requirement shall apply to the following database tables:

Database Table	Pass/Fail
COUNTY	**Pass□ Fail□**
EM_LANEMAP	**Pass□ Fail□**
RS_REPORT_MENU	**Pass□ Fail□**
RS_COST	**Pass□ Fail□**
EM_VEHICLETYPE	**Pass□ Fail□**
EM_VEHICLEMODEL	**Pass□ Fail□**
EM_REFERENCEPOINT	**Pass□ Fail□**
EM_OFFSETTYPE	**Pass□ Fail□**

Database Table	Pass/Fail
EM_MAILLIST	**Pass** **Fail**
EM_LOOKUP	**Pass** **Fail**
EM_LOCATION	**Pass** **Fail**
EM_LANETYPE	**Pass** **Fail**
EM_INJURYTYPE	**Pass** **Fail**
EM_EVENTTYPE	**Pass** **Fail**
EM_EVENTSTATUS	**Pass** **Fail**
EM_CONTACT	**Pass** **Fail**
EM_CONDITION	**Pass** **Fail**
EM_AGENCY	**Pass** **Fail**
EM_ACTIVITY	**Pass** **Fail**

2.1.3 Test Case 3: Color DMSs

2.1.3.1 Test Objectives

The objective of this test is to verify that the dynamic message sign (DMS) subsystem and driver are updated to support National Transportation Communications for ITS Protocol (NTCIP) 1203 version 3 for color DMSs. Also, the functions of the new user interface controls for color DMSs will be tested and verified.

2.1.3.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler
- Center-to-center (C2C) client

2.1.3.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail

Step	Requirement	Procedure	Notes	Pass/Fail
1		Configure a color DMS in SunGuide. Send a message to the configured color DMS.		
2	**DM016**	Verify that communication is successful between SunGuide and the configured color DMS.		**Pass Fail**
3		Open a view to the database.	Visual Studio can be used for SQL Server. SQL Developer can be used to access Oracle.	
4	**DM018**	Verify that the message sent to the color DMS in the previous steps is stored in the database.		**Pass Fail**
5		Create a response plan message template for a color dms. Create an event and generate a response plan that will use the new message template.		
6		Verify that the message template is saved and is accessed by relevant reponse plans.		**Pass Fail**
7		Attempt to delete an color dms image file while it is in use by a DMS.		
8		Verify that the action was not successful and that a message is displayed as to the cause.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.4 Test Case 4: TvT scheduling

2.1.4.1 Test Objectives

The objective of this test is to verify that SunGuide software allows travel time (TvT) and camera presets to be scheduled depending on the time-of-day.

2.1.4.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.4.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Log into the Operator Map. Right click on the Operator Map to bring up the context menu. Select Scheduled Actions… Select “Add A New Schedule”. Change the name of the new schedule.		
2	**SAS007** **SAS007B** **SAS007C**	Verify that a new schedule is added with the name “New Schedule”, and that it could be renamed.		**Pass□ Fail□**
3		Add another new schedule, but use the default name. Add a third new schedule. Attempt to rename this schedule to “New Schedule”.		
4	**SAS007A** **SAS007C1**	Verify that the third new schedule defaults to the next available default name and that you are not able to rename it to “New Schedule.”		**Pass□ Fail□**

Step	Requirement	Procedure	Notes	Pass/Fail
5		Right click one of the schedules from the previous steps. Select “Add New Item to Schedule”. Modify the start and end times.		
6	**SAS005A**	Verify that the parameters include start times, end times, and an option to select days of the week when this item would run.		**Pass Fail**
7		Verify that the duration is altered when editing start and end times.		**Pass Fail**

Step	Requirement	Procedure	Notes	Pass/Fail
8		Give the schedule item from the previous step a name. Set the start time for 5 minutes from the current time. Set the end time for 1 minute after the start time. From the Devices tab, select an Action Type of “Travel Time Systemwide”. From the Actions tab, select “Enable Travel Times”. From the Actions tab, select “Disable Travel Times”. Save the Schedule Item. From the Operator Map, ensure the systemwide travel times are off. From the Schedule Actions dialog, enable the schedule containing the schedule item created above. Wait for the SAS to enable travel times. Wait for the SAS to disable travel times.		
9	**SAS004** **SAS004A** **TMT039** **SAS006B** **SAS009**	Verify that the scheduled item is created, appears in the calendar view, and enables and disables travel times accordingly.		**Pass☐ Fail☐**

Step	Requirement	Procedure	Notes	Pass/Fail
10		Create a new schedule. Set the start time for 5 minutes from the current time. Set the end time for 1 minute after the start time. From the Devices tab, select an Action Type of “Travel Time Devices”. Select a simulated DMS. From the Actions tab, select “Enable Travel Times”. From the Actions tab, select “Disable Travel Times”. Save the Schedule Item. From the Operator Map, ensure the systemwide travel times are off. From the Schedule Actions dialog, enable the schedule containing the schedule item created above. Wait for the SAS to enable travel times. Wait for the SAS to disable travel times.		
11	**SAS004** **SAS004A** **SAS006B** **TMT0310**	Verify that the scheduled item is created, appears in the calendar view, and enables and disables travel times accordingly.		**Pass□ Fail□**

Step	Requirement	Procedure	Notes	Pass/Fail
12		For a currently configured schedule, right click on the schedule and copy it.		
13	**SAS008** **SAS008A**	Verify that a schedule is created with the same name and “Copy” appended to the end.		**Pass□ Fail□**
14		Create a new schedule. Set the start time for 5 minutes from the current time. Set the end time for 1 minute after the start time. Add a recurrence pattern. From the Devices tab, select an Action Type of “CCTV PTZ/Preset”. Select an active camera. Add several actions for the camera to perform. Save the Schedule Item. From the Schedule Actions dialog, enable the schedule containing the schedule item created above. Open a view of the camera and wait for the actions to be executed.		
15	**SAS005** **SAS006** **SAS006A** **SAS006D**	Verify that the scheduled PTZ actions occur as scheduled		**Pass□ Fail□**

Test End Date and Time	

Tester	
Witness	

2.1.5 Test Case 5: FP 1498 – Ownership of DMS messages when using predefined and generated response plans

2.1.5.1 Test Objectives

The objective of this test is to verify that SunGuide software assocates the correct user as the owner of messages from predefined and generated response plans.

2.1.5.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.5.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Create an event. Generate a response plan Ensure the response plan contains at least one DMS. Activate the response plan.		
2	**EM031A**	Verify that the owner of the event has ownership over all DMS messages posted by the response plan.		**Pass□ Fail□**

Test End Date and Time	
Tester	
Witness	

2.1.6 Test Case 6: FP 1591 – Bulk updates for automated vehicle location (AVL) for Road Ranger

2.1.6.1 Test Objectives

The objective of this test is to verify that SunGuide software processes messages containing multiple updates from Road Ranger (RR) mobile applications.

2.1.6.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.6.2.1 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Log into the SPARR application and force a geo fence alert by choosing a route outside of the immediate area. Open SQL developer. Open the data view for the AVLRR_GEO_ALERT_LOG		
2	**AV014C**	Verify that that the alert was logged in the database.		**Pass☐ Fail☐**
3		Log into the SPARR application and force a stop alert by leaving the phone stationary for the configured length of time. Open SQL developer. Open the data view for the AVLRR_STOP_ALERT_LOG		
4	**AV014C**	Verify that that the alert was logged in the database.		**Pass☐ Fail☐**

Step	Requirement	Procedure	Notes	Pass/Fail
5		Put AVL in detail mode. Sever the connection between SunGuide and the SPARR. Allow for the application to build up a large number of postion updates. Restore the connection between the SunGuide and the SPARR.		
6	**SPARR031** **AV014A** **AV014B**	Verify that the bulk updates are stored in the database in the AVLRR_VEHICLE_HISTORY table.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.7 Test Case 7: FP 1455 – "Nearest closed-circuit television (CCTV)" doesn't populate with geographically closest cameras

2.1.7.1 Test Objectives

The objective of this test is to verify that the "Nearest CCTV" field is populated with the geographically closest camera.

2.1.7.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.7.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail

Step	Requirement	Procedure	Notes	Pass/Fail
1		Create an event and enter all required event data.		
2	**EM042**	Verify that when event location is selected, the "Nearest CCTV Camera" is set to the geographically closest camera to the event.		**Pass Fail**
3		Change the event location to one whose geographically closest camera is different than the one selected in steps 1 and 2.		
4	**EM042A**	Verify that the "Nearest CCTV Camera" does not change.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.8 Test Case 8: FP 1999 – AVL Alerts need to be logged

2.1.8.1 Test Objectives

The objective of this test is to verify that automated vehicle location (AVL) alerts will be stored in the database for historical reporting needs.

2.1.8.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.8.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1			This test case is verified as a part of Test Case 6.	

Test End Date and Time	
Tester	
Witness	

2.1.9 Test Case 9: FP 1634 – Populate contact phone numbers if contact is already defined in event management (EM)

2.1.9.1 Test Objectives

The objective of this test is to verify that if a predefined contact is selected, the phone field will allow for a dropdown selection of the contact's defined phone numbers.

2.1.9.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.9.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Open the admin editor. Navigate to the edit agency contacts page. Enter the first and last name for an existing contact. Select the drop down box for the phone number.		
2	**EM041**	Verify that the drop down box is populated with the contact's defined phone numbers.		**Pass☐ Fail☐**

Test End Date and Time	
Tester	
Witness	

2.1.10 Test Case 10: FP 1579 – Allow construction/planned construction events to have "zones" like congestion

2.1.10.1 Test Objectives

The objective of this test is to verify that special event, bridge work, visibility, weather, and flooding events support a starting and ending location as their affected area. This test will also verify that these starting and ending locations will be transmitted via C2C as the primary and secondary locations of the event.

2.1.10.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler
- C2C test client

2.1.10.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Create a new event in SunGuide. Set the event type to special event. Set the starting and ending point for the event.		
2	**EM040**	Verify that starting and ending point for the event appear in the C2C feed.		**Pass□ Fail□**
3		Set the event type to bridge work. Set the starting and ending point for the event.		
4	**EM040**	Verify that starting and ending point for the event appear in the		**Pass□ Fail□**

Step	Requirement	Procedure	Notes	Pass/Fail
		C2C feed.		
5		Set the event type to visibility. Set the starting and ending point for the event.		
6	**EM040**	Verify that starting and ending point for the event appear in the C2C feed.		**Pass Fail**
7		Set the event type to weather. Set the starting and ending point for the event.		
8	**EM040**	Verify that starting and ending point for the event appear in the C2C feed.		**Pass Fail**
9		Set the event type to flooding. Set the starting and ending point for the event.		
10	**EM040**	Verify that starting and ending point for the event appear in the C2C feed.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.11 Test Case 11: Add vehicle alert templates

2.1.11.1 Test Objectives

The objective of this test is to verify that there are unique vehicle alert templates for America's Missing: Broadcast Emergency Response (AMBER), Silver, and law enforcement officer (LEO) event types.

2.1.11.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.11.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Open the admin editor. Navigate to Event Management > Response Plans > Message Templates. Add or edit a new default template for an amber alert. Create an amber alert event in EM, and generate a response plan.		
2	**EM032A**	Verify that the default template for amber alerts is used in the response plan.		**Pass☐ Fail☐**
3		Open the admin editor. Navigate to Event Management > Response Plans > Message Templates. Add or edit a new default template for an leo alert. Create an leo alert event in EM, and generate a response plan.		
4	**EM032B**	Verify that the default template for leo alerts is used in the response plan.		**Pass☐ Fail☐**
5		Open the admin editor. Navigate to Event Management > Response Plans > Message Templates. Add or edit a new default template for an silver alert. Create an silver alert event in EM, and generate a response plan.		

Step	Requirement	Procedure	Notes	Pass/Fail
6	**EM032C**	Verify that the default template for silver alerts is used in the response plan.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.12 Test Case 12: TransCore Encompass driver update

2.1.12.1 Test Objectives

The objective of this test is to verify that SunGuide software communicates with the TransCore Encompass device via transmission control protocol over internet protocol. Also, SunGuide software will provide support for more than 256 TransCore devices within one software driver.

2.1.12.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.12.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Using the Administrative Editor, navigate to TSS >> Detectors and add a new detector. Configure the detector as normal, but select TranscoreAllegroTCP as the protocol and fill in the necessary information for a TCP Connection. Monitor the status of SunGuide connecting to the Transcore		

Step	Requirement	Procedure	Notes	Pass/Fail
		device.		
2	**TM005S7**	Verify that the settings in Admin Editor save successfully and that the log file indicates a successful connection with the device		**Pass Fail**
3		Create two sets of tag matches with different tag IDs.		
4		Verify that the vehicle count for “current” and “last 4 minutes” is two.		**Pass Fail**
5		Allow the matches from the previous step to “fall out” of the “last 4 minutes” count.		
6		Verify that the device status remains active when the device is not actively receiving tag reads		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.13 Test Case 13: Video on desktop

2.1.13.1 Test Objectives

The objective of this test is to verify that SunGuide software plays real-time camera feeds and allows for video management to enhance user experience.

The video on desktop document is available from FDOT.

2.1.14 Test Case 14: FP 2301 – Store priority in DMS message library

2.1.14.1 Test Objectives

The objective of this test is to verify that the DMS message library saves message priority with the stored message.

2.1.14.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.14.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Open SunGuide and navigate to the DMS message libraries dialogue. Add a new message and set its priority to “37”. Save the message. Send the saved message to a DMS.		
2	**DM002A**	Verify that the message is posted at a priority of “37”.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.15 Test Case 15: Detect no traffic conditions

2.1.15.1 Test Objectives

The objective of this test is to verify that speed is an optional value that will be excluded when volume is zero.

2.1.15.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.15.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1			This test case is tested through the volume weighted averages test case.	

Test End Date and Time	
Tester	
Witness	

2.1.16 Test Case 16: TvT message templates without units

2.1.16.1 Test Objectives

The objective of this test is to verify that SunGuide software allows TvT message templates to be configured to not have units of time automatically included.

2.1.16.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.16.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Open config.xml. Navigate to the tvt section. Alter the travel time messages without units tag so that units will not display in travel time messages. Restart TvT. Open the SunGuide operator map and monitor DMS messages.		
2	**TBD**	Verify that the TvT messages do not contain units.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.17 Test Case 17: EIS G4 detector support

2.1.17.1 Test Objectives

The objective of this test is to verify that SunGuide software supports the EIS G4 detector through the remote traffic microwave sensor driver.

2.1.17.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler
- C2C client

2.1.17.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Configure a new detector in SunGuide which uses the EIS G4 protocol.		
2	**TD020**	Verify that communication is established with the detector by checking the status logger.		**Pass□ Fail□**
3	**TD020A**	Verify through the C2C client that speed, volume, occupancy, and classification data is being received and transmitted.		**Pass□ Fail□**

Test End Date and Time	
Tester	
Witness	

2.1.18 Test Case 18: Texas A&M Transportation Institute's (TTI) Anonymous Wireless Address Matching (AWAM) Bluetooth support

This test case was withdrawn.

2.1.19 Test Case 19: Volume weighted averaging

2.1.19.1 Test Objectives

The objective of this test is to verify that when aggregating speed over any composing elements or time intervals, the composing speeds are weighted by volume. This includes link averages, rolling averages, and operational data store roll-ups.

2.1.19.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.19.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail

Step	Requirement	Procedure	Notes	Pass/Fail
1		Put TSS in detail logging mode. Open config.xml. Note the number of poll cycles used in the rolling average. Find a RTMS TSS link with exactly 4 lanes. Configure a new link if necessary. Alter the incoming simulated data for the link as follows: Lane 1-4 Speeds: 40 50 70 80 Lane 1-4 Volumes: 5 10 5 10 Wait for 4 poll cycles. Put TSS in info mode. Manually calculate the expected volume weighted average for lane 1 using the raw data.		
2	**TD021** **TD021A**	Verify that the manual calculations match those made by SunGuide.		**Pass□ Fail□**
3		Open the status logger. Find the link average reported by the system. Manually calculate the correct link average.		
4	**TD021B** **TD021C** **TD021E**	Verify that these two numbers match.		**Pass□ Fail□**
5		Put TSS in detail logging mode. Open config.xml. Note the number of poll cycles used in the rolling average. Find a RTMS TSS link with exactly 4 lanes. Configure a		

Step	Requirement	Procedure	Notes	Pass/Fail
		new link if necessary. Alter the incoming simulated data for the link as follows: Lane 1-4 Speeds: 40 50 70 80 Lane 1-4 Volumes: 5 10 5 10 Wait for 4 poll cycles. Randomly intersperse zero volume data into all lanes while waiting. Put TSS in info mode. Manually calculate the expected volume weighted average for lane 1 using the raw data.		
6	**TD021D** **TD021E1**	Verify that the manual calculations match those made by SunGuide.		**Pass Fail**
7		Open config.xml. Note the number of poll cycles used in the rolling average. Find a RTMS TSS link with exactly 4 lanes. Configure a new link if necessary. Alter the incoming simulated data for the link as follows: Lane 1-4 Speeds: 40 50 70 80 Lane 1-4 Volumes: 0 0 0 0 Wait for 4 poll cycles. Put TSS in info mode. Manually calculate the expected volume weighted average for the link using the raw data.		

Step	Requirement	Procedure	Notes	Pass/Fail
8	**TD021E2** **TD021E3**	Verify that the manual calculations match those made by SunGuide.		**Pass Fail**
9		Using SQL Developer, find the link data generated during this test case in the ODS_TSS_ROLLUP table.		
10	**DA03D1**	Verify that the data rollups also use volume weighted averageing.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.20 Test Case 20: Minimum volume threshold for alerts

2.1.20.1 Test Objectives

The objective of this test is to verify that traffic alerts respect a configurable minimum volume threshold for traffic sensor subsystem (TSS) alert generation.

2.1.20.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.20.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Open the sunguide config file, config.xml.		
2	**TD022**	Verify that the minimum volume threshold tag is present in the TSS section of config.xml.		**Pass Fail**
3		Set the minimum volume to 5.		

Step	Requirement	Procedure	Notes	Pass/Fail
		Place a detector link into an alert state by altering the simulator data being sent by Sunguide with a volume exceeding the minimum volume threshold.		
4	**TD022A**	Verify that an alert is generated.		**Pass Fail**
5		Place the same detector link into an alert state by altering the simulator data being sent by Sunguide with a volume below the minimum volume threshold.		
6	**TD022A**	Verify that no alert is generated.		**Pass Fail**

Test End Date and Time	
Tester	
Witness	

2.1.21 Test Case 21: BlueTOAD plug-in

2.1.21.1 Test Objectives

The objective of this test is to verify that the plug-in included with SunGuide software consumes the BlueTOAD third-party data feed and makes the data available to SunGuide software as well as the Florida 511 system.

2.1.21.2 Test Resources and Setup Conditions

Requires access to:

- SunGuide software database
- SunGuide software status logger and executive handler

2.1.21.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure	Notes	Pass/Fail
1		Turn on the blueTOAD		

Step	Requirement	Procedure	Notes	Pass/Fail
		simulator. Open the operator map. Ensure that blueTOAD data is enabled on the operator map. Disable any other data sources such as Inrix.		
2	**TBD**	Verify that blueTOAD data is displayed on the operator map.		**Pass□ Fail□**

Test End Date and Time	
Tester	
Witness	

2.2 Release 6.0 FP Test Cases

2.2.1 Test Case 22: FP 1492 – Unable to create new lane blockage records using audit function

2.2.1.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F

	Test Steps	Notes	P	F
1	1. Create a SunGuide event, wait one minute and then add lane blockage. 2. Save and get response. 3. Remove lane blockage. 4. Close event. 5. Audit event by adding new lane blockage with a timestamp occurring between the event creation timestamp and previously added lane blockage timestamp. 6. Verify new blockage record was added.		☐	☐

2.2.2 Test Case 23: FP 1595 – ODS_DMS_MESSAGES inconsistently failed to provided CURRENT_TVT value

2.2.2.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Start SQL Developer 2. Connect to SGD9 Database. 3. Navigate to user FDOT_ODS. 4. View ODS_DMS_Messages. 5. Verify correct values are set for TVT.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.3 Test Case 24: FP 1636 – Loop Detectors reporting zero speed

2.2.3.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Open config.xml file. 2. Locate and verify correct parameters for loop detectors are set with an accuracy of tenth place precision. 3. Confirm loop detectors are not reporting zero speeds.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.4 Test Case 25: FP 1958 – Floodgate issue

2.2.4.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Create new floodgate message. 3. Save 4. Verify messages are updated in C2C Feed. 5. Delete Floodgate message. 6. Verify message was successfully deleted.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.5 Test Case 26: FP 2095 – Unable to view floodgates

2.2.5.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Verify floodgates and banners are listed within SunGuide.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.6 Test Case 27: FP 2129 – Video cannot be switch via MCP

2.2.6.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Using the MCP controller/joystick switch a video destination. 2. Verify the video was switched. 3. Verify the camera can be moved by the joystick after the video was switched. 4. Lock a selected video within SunGuide. 5. Confirm the camera cannot be controlled by the joystick while the camera is locked.	.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.7 Test Case 28: FP 2138 – Find on map button not enabling when AVL vehicle is selected

2.2.7.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Start AVL simulator. 2. Dispatch a Road Ranger. 3. Verify find on map is active selection option.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.8 Test Case 29: FP 2150 – DMS subsystem and driver forced to restart

2.2.8.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Verify DMS xml interface and DMS statewide driver are loaded consistently without error.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.9 Test Case 30: FP 2154 – FL511 is not posting in the event chronology

2.2.9.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Create an event and publish it to FL511. 3. Generate an event chronology report for the created event. 4. Verify the event Publish to FL511 is reported in the report.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.10 Test Case 31: FP 2158 – Some subsystems take longer to load

2.2.10.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Observe the loading of subsystems behavior. 3. Verify all subsystems load without delays.	Defer to District. Unable to quantify “delays.”	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.11 Test Case 32: FP 2159 – Message arbitration subsystem (MAS) stuck on pending

2.2.11.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Select a DMS sign. 3. Post a new message to the sign. 4. Verify MAS reports complete (MAS is not stuck on pending).		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.12 Test Case 33: FP 2161 – AVL RR truck indicator

2.2.12.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Open the SunGuide operator map event list. 2. Select AVLRR. 3. Select a Road Ranger and set status to Patrolling. 4. After patrolling for a shot amount of time, place Road Ranger on break. 5. After a short break time, start Road ranger patrolling. 6. Verify Road Ranger status is moving not flashing after 15 minutes of patrolling.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.13 Test Case 34: FP 2163 – MAS is showing all DMS in a pending state

2.2.13.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Expected Result	P	F
1	1. Log into Sunguide Operator map. 2. Select a DMS sign and send new message. 3. Verify message was sent and displayed, MAS is reporting a “Complete” status, and no errors are reporting in the status logger.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.14 Test Case 35: FP 2172 – Unable to configure vehicle operator

2.2.14.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Expected Result	P	F
1	1. Stop the AVLRR driver. 2. Log into the SG Admin Editor. 3. Select AVLRR. 4. Select Vehicle Operator and a new operator. 5. Verify new operator was added and no errors were received.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.15 Test Case 36: FP 2195– EM/RPG "Input string was not in a correct format" error.

2.2.15.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Expected Result	P	F
1	1. Log into SG operator map. 2. Select DMS and create a new sequence. 3. Send and remove new sequence message from DMS. 4. Verify messages were sent and removed without errors in the Status Logger.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.16 Test Case 36: FP 2195 – EM/RPG "Input string was not in a correct format" error

2.2.17 Test Case 37: FP 2225 – Cannot generate response plan if a device template uses "(Use Default)"

2.2.17.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. In the Admin Editor, confirm "(Use Default)" is configured for the distance templates. 2. From the Operator Map, create a new event. 3. Generate a response plan. 4. From the response plan editor, get a new distance suggestion. 5. Verify new response was created without any errors.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.18 Test Case 38: FP 2243 – TSS Alerts Incidents

2.2.18.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. From the SG event list select a TSS alert message. 2. Create an event from the alert. 3. Verify created event type is congestion.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.19 Test Case 39: FP 2248 – MAS will not resend unmerged message

2.2.19.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Select a DMS sign and send a new message. 3. Merge messages. 4. Remove merged message. 5. Verify the message was removed from the queue and DMS is updated with the unmerged message.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.20 Test Case 40: FP 2254 – Floodgate: Issues saving recorded messages

2.2.20.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Select C2C floodgate messages. 3. Select floodgate main. 4. Save a floodgate WAV file to be posted to 511 later. 5. Open the pre-recorded WAV file (previously saved within SunGuide) in an external application so that it places a lock on the file. 6. Attempt to create new floodgate message by selecting the pre-recorded WAV file. 7. Verify the UI will not allow saving since the WAV file is locked.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.21 Test Case 41: FP 2273 – Floodgate dialog – Set Multiple Issues

2.2.21.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into SunGuide operator map. 2. Select C2C. 3. Select Floodgate messages 4. Set multiple floodgate messages in English, selecting specific regions and roadways. 5. Set multiple floodgate messages in Spanish, selecting the same regions and roadways that was selected in step 4.. 6. Verify all created floodgate messages are present at all selected regions and roadways.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.22 Test Case 42: FP 2294 – Audit Error - Chronology data outside bounds of neighbors

2.2.22.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Create and event with blocked lanes. 3. Close new event. 4. Select audit event from event list. 5. Attempt to audit another event with a lower event ID than the previously edited event. 6. Verify events can be edited without error.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.23 Test Case 42: FP 2294 – Audit Error - Chronology data outside bounds of neighbors

2.2.24 Test Case 43: FP 2299 – Wrong message template being used for SH-EXIT-SH lane configuration

2.2.24.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into SunGuide Admin editor. 2. From EM, add a new lane configuration. 3. Create an event using SH-EXIT-SH configuration. 4. Verify event is not recognized as "closed".		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.25 Test Case 44: FP 2307 – Populate EM dialog "Mile Marker" field with EM location mile marker, if defined

2.2.25.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Create an event with Mile Marker as the reference point. 2. Verify that the related Mile Marker is populated in the mile marker location of the event.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.26 Test Case 45: FP 2310 – Adding reports

2.2.26.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into SunGuide Admin Editor. 2. Add an updated report file with same name as previous version. 3. Verify an overwrite checkbox is available. 4. Add report and select not to overwrite. 5. Generate a report by selecting original template name and confirm original template is used. 6. Add an updated report file with same name as previous version. 7. Add report and select to overwrite. 8. Generate a report by selecting original template name and confirm new template is used.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.27 Test Case 46: FP 2336 – Additional Parameter for set "publish" flag for INRIX data

2.2.28 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Open the INRIX .dat configuration file 2. Add a publish flag for selected segments, some with trailing tab and others with no trailing tab. 3. Verify segments configured not to publish are not published to 511. (could be verified via C2C output)		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.29 Test Case 47: FP 2337 – Jupiter driver service fails to start

2.2.29.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into application Server hosting the Jupiter driver. 2. Start Jupiter Driver. 3. Verify driver starts without error.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.30 Test Case 48: FP 2345 – Null Reference using New Message Template.

2.2.30.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into SunGuide admin editor. 2. Create a new message template. 3. Link new message to device. 4. Log into the SunGuide operator map. 5. Create a new event with reference to new template and device 6. Generate Response Plan. 7. Verify new response plan is generated without errors.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.31 Test Case 49: FP 2347 – RR events are not showing up in status reports (ref FP 2211)

2.2.31.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Expected Result	P	F
1	1. Log into the SunGuide operator map. 2. Select Reports 3. Select Road ranger Reports 4. Run Road Ranger status report. 5. Verify Road Ranger events are present in the report.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.32 Test Case 50: FP 2352 – DMS stops sending status updates

2.2.32.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Select a DMS and send new messages. 3. Verify DMS is actively updating sent and attempted status.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.33 Test Case 51: FP 2354 – Error setting ramp metering controller active

2.2.33.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. Select and RMS controller and make "active". 3. Verify controller becomes active without errors.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.34 Test Case 52: FP 2355 – RR activity is not mandatory in SunGuide software release 5.1.1

2.2.34.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Create an event with lane blockage. 2. Dispatch a Road Ranger. 3. Arrive the Road Ranger. 4. Attempt to depart Road Ranger. Confirm Road Ranger cannot be departed without adding an activity. 4. Add an activity. 5. Depart Road Ranger.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.35 Test Case 53: FP 2361 – Approved words being check even though it's disabled

2.2.35.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Open the config.xml file 2. Set overridespellingConficts in the MAS section to true. 3. Send approved words to multiple DMS. 4. Verify unapproved words are sent without flagging the operator.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.36 Test Case 54: FP 2362 – TSS reporting "Value formatted incorrectly: class"

2.2.36.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Verify data is being reported by TSS Detectors that are not Wavetronix HD detectors. 2. Verify no TSS errors are reported in the Status Logger.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.37 Test Case 55: FP 2366 – Wavetronix high definition detector not available to be selected in Admin Editor and CRC check failing

2.2.37.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into Admin Editor. 2. Add a new Wavetronix HD detector and save. 3. Edit the new Detector by changing one or more of its parameters. 4. Verify changes were saved.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.38 Test Case 56: FP 2367 – Jupiter driver not connecting to Jupiter controller

2.2.38.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Open the config.xml file and verify Jupiter IP address. 2. Verify Jupiter parameters are correct on host application server. 3. Restart Jupiter driver. 4. Verify Jupiter driver is connecting with Jupiter controller.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.39 Test Case 57: FP 2368 – Beacons not set for variable speed limits

2.2.39.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Verify VSL Beacons are turned on. 2. Send a message to a VSL. 3. Verify message was received with beacons on.		☐	☐

2.2.40 Test Case 58: FP 2380 – None of our detectors on the Canoga driver seem to be working since the 5.1.1 upgrade

2.2.40.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into SunGuide Admin Editor. 2. Add new Conoga Driver detectors. 3. Log into SunGuide operator map and select Canoga detectors and make "active". 4. Verify detectors are active state and no errors.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.41 Test Case 59: FP 2396 – Unable to create new sequence.

2.2.41.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the SunGuide operator map. 2. From the DMS drop down menu select sequence library. 3. Add new sequence. 4. Verify new sequence was added and saved without errors.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.42 Test Case 60: FP 2417 – Traffic Detectors not being displayed in the Regional Integrated Transportation Information System (RITIS).

2.2.42.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into the State of Florida RITIS site 2. Verify districts detectors are present on map. 3. Select a detector. 4. Verify detector reporting current data.		☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.2.43 Test Case 61: FP 2423 – Allow sorting by Columns on TVT tab

2.2.43.1 Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Notes	P	F
1	1. Log into Operator map and select TravelTime 2. Click on each of the columns and verify columns can be filtered for sorting.		☐	☐

2.3 Release 6.0 Regression Test Cases

2.3.1 Test Case 62: Operator Map Regression Testing

2.3.1.1 Test Objectives

This test case verifies all functions provided through the operator map.

2.3.1.2 Test Resources and Setup Conditions

SunGuide software test systems and database clients identified in the test plan.

2.3.1.3 Test Script

Step	Requirement	Procedure
1		If a browser on the SunGuide software workstation is not already connected to the desired Operator Map do following: On the SunGuide software workstation, launch a browser and access the address of the web server of the desired SunGuide software system Click on the link for the Operator Map
2		Log in into the Operator Map with your user name and password which should be same as your windows log in information Once logged in the Subsystem Status Window will pop up; you may close the window
3		Right click anywhere on the map and choose the appropriate menu and sub menu to test
4		From the database client, navigate to the database table(s) affected by the desired module, object type, and action to be verified
5		Observe the presence and state of the object to be modified
6		Invoke the desired function
7		Verify the correct changes were made to the object(s) in the database and record the pass/fail results in the table below
8		Access the object that was modified in the previous steps
9		Verify that the desired modification was read into the subsystem and displayed correctly on the Operator Map and record the pass/fail results in the table below
10		Repeat the previous steps, for all of the functions within the Operator Map checklist

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
CCTV	Camera Blocking	Block Camera							Block desired camera than go to the FDOT_OWN, Tables, VS_SOURCE_BLOCK_HISTORY, Data and check that desired camera is blocked and stored in the History Block desired camera and go to FDOT_OWN, Tables, VS_DEVICE, Data and check that desired camera was blocked
		Unblock Camera							Unblock desired camera than go to the FDOT_OWN, Tables, VS_SOURCE_BLOCK_HISTORY, Data and check that desired camera is un-blocked and stored in the History unblock desired camera and go to FDOT_OWN, Tables, VS_DEVICE, Data and check that desired cameras's status
		System wide Detection							Block all cameras and check the status in the FDOT_OWN, Tables, VS_SOURCE_BLOCK_HISTORY, Data
	Camera Control	PTZ							GUI only
		Filter							GUI only

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
		OP Status							Change Camera Status and go to table FDOT_OWN, Tables, DA_DEVICE_STATUS, Data to check that desired function was invoked
		Presets							Set the preset and give it appropriate name, go to table CCTV_PRESETS and make sure that desired preset is stored
		Unlock/Unlock							Set the camera to locked go to FDOT_OWN, Tables, CCTV_LOCK_USAGE, Data and check that camera is locked Set the camera to unlock and repeat the same process
		Zoom Iris							GUI only
		Nudge							GUI only
	Desktop Video Dialogs	Place a tour							
DMS	Device Groups	Add							Create new group than go to DB table FDOT_OWN, Tables, DMS_GROUP, Data and check that the new group was created
		Edit							Edit Device Group than open table FDOT_OWN, Tables, DMS_GROUP, Data and check the changes

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
		Delete							Delete Device Group than open table FDOT_OWN, Tables, DMS_GROUP, Data and check that the action was stored
	Device Status	Put MSG up							Add a new message and check FDOT_ODS, Tables, DS_DMS_MESSAGES, Data sort the data in the table by the date to see most current message posted
		Blanks Sign							Set the DMS to blank sign and check FDOT_ODS, Tables, ODS_DMS_MESSAGES, Data
		OP Status							DMS_STATUS
		MAS Queue							MAS_QUEUE, check if message went into queue by copying text in DB and pasting it in the Notepad
	Massage Libraries	Add							FDOT_OWN, Tables, MESSAGE_LIBRARY, Data
		Edit							
		Delete							
	Trailblazer Status	Put MSG up							DMS where SIGN_USE like 'Trailblazer'. You must manipulate a sign in Admin Editor before you can do this and change sign use field to "Trailblazer"
		Blank Sign							same as above

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
		Brightness							same as above
		Filter							same as above
		OP Status							same as above
		Mas Queue							same as above
	Travel Time Msg	Set On/Off							TVT_OPTIONS
	VSL Status	Brightness							Unable to locate in DB
		Filter							GUI only not DB driven
		OP Status							FDOT_OWN, Tables, DMS_STATUS/check Operational Status
EM	Add New Event	Add Event							FDOT_OWN, Tables, EM_EVENT_LOCATION, Data
	Event List	Display Events							GUI only
	Predefined Response Plans	Add							FDOT_OWN, Tables, RPG_PLAN, Data
		Edit							
		Delete							
	Remove Events from FLATIS	Remove							N/A
	Republish Events to FLATIS	Republish							N/A
HAR	HAR Status	OP Status							FDOT_OWN, Tables, HAR_EQUIP
		Filter							GUI only

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
		Beacons							HAR_MSG.BEACON_STATE
	MSG Manager	Queue Manager							HAR_MSG
IDS	System wide VisioPaD Detection (context menu)	Set ON/Off							IDS_OPTIONS
	System wide VisioPaD Detection (Tab GUI)	Set ON/Off							IDS_OPTIONS
Ramp Meter (RMS)	Alarms	Alarms Display							FDOT_OWN, Tables, RMS_CONTROLLER
		Filter							GUI only
	Controls	Set Metering Status							RMS_CONTROLLER
		Set OP Status							RMS_CONTROLLER
		Filter							GUI only
		Set Range							RMS_FIRMWARE_PARAMS
		Set Rate							RMS_CONTROLLER

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
	Reset RMS	Reset Loops							GUI only
		Reset 170 SW							GUI only
		Reset Comms							GUI only
		Filter							GUI only not DB driven
	Status Overview	Filter							GUI only not DB driven
Roadside Weather Systems (RWIS)	Status Overview	Set OP Status							FDOT_OWN, Tables, RWIS_EQUIP
		Tabs							FDOT_OWN, Tables, RWIS_EQUIP
		Filter							GUI only
SB	Status Overview	Set OP Status							FDOT_OWN, Tables, SB_EQUIP
		Filter							GUI only
		Set Lamp Status							GUI only

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
		Set Switch Status							GUI only
Traffic Detector (TSS)	Detector Status	Set OP Status							TSS_DETECTOR.STATUS and FDOT_OWN, Tables, DA_DEVICE_STATUS, use filter "DEVICE_ID like '%device name %'
		Filter							GUI only not DB driven
	Dynamic Probe Linking	Set On/Off							TSS_SYSTEM_CONFIG, TSS_LINK.DYNAMIC_LINK
	Edit Link Placement	Place Points							ROADWAY_MIDPOINT, ROADWAY_NODE
		Zoom To Link							GUI only
		Remove							ROADWAY_LINK
		Add Non-TSS Link							ROADWAY_LINK, TSS_LINK. ARTERIAL_LINK
		Edit Non-TSS Link							TSS_LINK, ROADWAY_LINK
		Delete Non-TSS Link							TSS_LINK, ROADWAY_LINK
		Remove Unused Nodes							ROADWAY_NODE, ROADWAY_MIDPOINT

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
		Save Link Map							required action for above TSS link functions and their respective database tables
TVT	Travel Times	Select ALL							GUI only
		Enable Links							FDOT_OWN, Tables, TVT_LINK, Data
		Disable Links							FDOT_OWN, Tables, TVT_LINK, Data
		Highlight on Map							GUI only
		Alternate Routes							FDOT_ODS, Tables, ODS_TRAVEL_TIME_INFO, Data
		Matching Routes							GUI only
VS	Switching Control	Sources Displayed							GUI only
		Tours Displayed							GUI only
		Switching							GUI only
		Scale							GUI only
	Video Tours	Add							FDOT_OWN, Tables, VS_VIDEO_TOURS
		Edit							Wasn't able to Edit the Tour
		Delete							FDOT_OWN, Tables, VS_VIDEO_TOURS

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
	Virtual Wall Layout	Place							FDOT_OWN, Tables, VS_LAYOUTS
		Remove							FDOT_OWN, Tables, VS_LAYOUTS
		Save Layouts							FDOT_OWN, Tables, VS_LAYOUTS
VSL	Segment Status	Set Enabled							GUI only
		Set Plan							VSL_GROUP.CURRENT_PLAN

Event Management

Window	Action	Database Location	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
Operator Map	Create Event	EM_EVENT							
	Update Event Status and check in DB	EM_EVENT_CHRONO							
	Add/Update/Delete Responders to the right and check DB	EM_EVENT_CHRONO							
	Add/Delete/Update Agency Contact	EM_EVENT_CONTACT							

Window	Action	Database Location	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
	Add/Delete/Update location to the event	EM_EVENT_LOCATION							
	Block/Unblock a lane	EMAUDT_EVENT_LOCATION							
	Add/Delete/Update Anticipated Clearence Time	EM_EVENT							
	Add/Change FL-ATIS Severity Level	EM_EVENT EM_EVENT_CHRONO							
	Add/Delete/Update Vehicle Dispatch	EMAUDT_EVENT_DISPATCH							
	Add/Delete/Update Procedural Error	EM_EVENT_DISPATCH_PROCERR							
	Add/Delete/Update Vehicle Involved	EMAUDT_EVENT_INVOLVEDVEHICLE							
	Add/Delete/Update Weather Conditions	EM_EVENT_PERFMEASD							
	Add/Delete/Update a comment	EMAUDT_EVENT_COMMENT							
	Generate Chronology Report for the event created								
	Audit Event Status	EMAUDT_EVENT							

Window	Action	Database Location	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
	Modify Event under Event Status in Audit Window	EMAUDT_EVENT EM_EVENT							
	Modify Event Location and Congestion in Audit Window	EMAUDT_EVENT_LOCATION							
	Modify/Delete lane blockage under Audit Window	EMAUDT_EVENT_LOCATION							
	Set Vehicle Dispatch under Audit Window	EMAUDT_EVENT_DISPATCH							
	Modify Responder Time under Audit Window	EM_EVENT							
	Modify Vehicle Involved under Audit Window	EMAUDT_EVENT_INVOLVEDVEHICLE							

2.3.2 Test Case 63: Admin Editor Regression Testing

2.3.2.1 Test Objectives

This test case verifies the configuration functionality made available through Admin Editor. This configuration functionality should modify configuration data in the subsystem and the database for each device.

2.3.2.2 Test Resources and Setup Conditions

SunGuide test systems and database clients identified in the test plan.

2.3.2.3 Test Script

Test Start Date and Time	

Step	Requirement	Procedure
24		If a browser on the SunGuide software workstation is not already connected to the desired Admin Editor do following: On the SunGuide software workstation, launch a browser and access the address of the webserver of the desired SunGuide software system Click on the link for the Admin Editor
25		Use the menu on the left to navigate to the location in the Admin Editor corresponding to the desired module, object type, and action to be verified/tested
1		Launch a database client and navigate to the database for the SunGuide system under test
2		From the database client, navigate to the database table(s) affected by the desired module, object type, and action to be verified
3		Observe the presence and state of the object to be modified
4		Invoke the desired function
5		Verify the correct changes were made to the object(s) in the database and record the pass/fail results in the table below
6		Restart the subsystem containing the object
7		Refresh the Admin Editor and navigate to the same location using the menu on the left
8		Access the object that was modified in the previous steps
9		Verify that the desired modification was read into the subsystem and displayed correctly in the Admin Editor and record the pass/fail results in the table below

Step	Requirement	Procedure
10		Repeat the previous steps, for all functions within the Admin Editor checklist

Test End Date and Time	3/18/2013 11:00AM, 3/28/2013 2PM
Tester	Lexi
Witness	

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
AVL/RR	Availability Statues	Add							FDOT_Own, Tables, AVLRR_AVAIL_STATUS
		Edit							
		Delete							
	Beats	Add							FDOT_Own, Tables, AVLRR_BEAT
		Edit							
		Delete							
	Radios	Add							FDOT_Own, Tables,AVLRR_RADIO
		Edit							
		Delete							
	Telephone Numbers	Add							FDOT_Own, Tables, AVLRR_TELEPHONE
		Delete							
	Vehicle Agencies	Edit							FDOT_Own, Tables, AVLRR_VEHICLE_AGENCY
	Vehicle Operators	Add							FDOT_Own, Tables, AVLRR_OPERATOR
		Edit							
		Delete							
	Vehicles	Add							FDOT_Own, Tables,

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
									AVLRR_VEHICLE
		Edit							
		Delete							
CCTV/VS	Cameras	Add							FDOT_Own, Tables, CCTV_EQUIP
		Edit							
		Delete							
	Video Destinations	Add							VS_DEVICE where DEVICE_TYPE = (select REF_ID from VS_DEVICE_TYPES where TYPE like ‘destination’)
		Edit							
		Delete							
	Video Sources	Add							FDOT_Own, Tables, VS_DEVICE
		Edit							
		Delete							
Data Archive	Properties	Edit							DATA_ARCHIVE_SYSTEM_CONFIG
DMS	Approved Words	Add							FDOT_Own, Tables, APPROVED_WORDS_LIST
		Delete							
	Connection Type	Edit							No items to edit in the list of DMS Connection Types

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
	Fonts	Add							FDOT_Own, Tables, DMS_FONTS
		Edit							
		Delete							
	Manufacturers	Add							FDOT_Own, Tables, DMS_MANUFACTURERS
		Delete							
	Polling Process Names	Add							FDOT_Own, Tables, POLLING_NAMES
		Delete							
	Signs	Add							FDOT_Own, Tables, DMS Use address 2 type as UDP Port Server to enter Community name
		Edit							
		Delete							
Event Management	Activity Type	Add							FDOT_Own, Tables, EM_ACTIVITY
		Edit							
		Delete							
	Agencies	Add							FDOT_Own, Tables, EM_AGENCY
		Edit							
		Delete							
	Agencies Contacts	Edit							FDOT_Own, Tables,

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
									EM_CONTACT
	Comment Type	Add							EM_LOOKUP, use modified by to sort
		Edit							
		Delete							
	Event Status Type	Add							FDOT_Own, Tables, EM_EVENTSTATUS
		Edit							
		Delete							
	Event Type	Edit							FDOT_Own, Tables, EM_EVENTTYPE
	Injury Type	Add							FDOT_Own, Tables, EM_INJURYTYP
		Edit							
		Delete							
	Organizations	Add							EM_LOOKUP where CODE_TYPE like 'ORG_ID'
		Edit							
		Delete							
	Locations	Add							FDOT_Own, Tables, EM_LOCATION
		Edit							

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
		Delete							
	Counties	Add							FDOT_Own, Tables, COUNTY
		Edit							
		Delete							
	Lane Maps	Add							FDOT_Own, Tables, EM_LANEMAP where CEASED_USE = 0
		Edit							
		Delete							
	Lane Types	Add							FDOT_Own, Tables, EM_LANETYPE
		Edit							
		Delete							
	Reference Points	Add							FDOT_Own, Tables, EM_REFERENCEPOINT
		Edit							
		Delete							
	Roadways	Add							FDOT_Own, Tables, ROADWAY
		Edit							
	Mailing Lists	Add							FDOT_Own, Tables, EM_MAILLIST

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
		Edit							
		Delete							
	Mailing Lists Contacts	Add							FDOT_Own, Tables, EM_MAILLIST_CONTACTS
		Delete							
	Procedural Errors	Add							EM_LOOKUP where CODE_TYPE like 'PROCERR_ID'
		Edit							
		Delete							
	Abbreviations	Add							FDOT_Own, Tables, ABBREVIATIONS
		Edit							
		Delete							
	Device Templates	Add							FDOT_Own, Tables, RPG_DEVICE_TEMPLATES
		Edit							
		Delete							
	Message Templates	Add							FDOT_Own, Tables, RPG_MSG_TEMPLATES
		Edit							
		Delete							
	Vehicle Colors	Add							EM_LOOKUP where CODE_TYPE

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
									like 'COLOR_ID'
		Edit							
		Delete							
	Vehicle State	Add							EM_LOOKUP where CODE_TYPE like 'STATE_ID'
		Edit							
		Delete							
	Vehicle Make	Add							EM_LOOKUP where CODE_TYPE like ' VEHICLEMAKE_ID'
		Edit							
		Delete							
	Vehicle Models	Add							FDOT_Own, Tables, EM_VEHICLEMODE
		Edit							
		Delete							
	Vehicle Types	Add							Cannot be changed by SunGuide
		Edit							
		Delete							
Express Lanes	Holidays	Add							FDOT_Own, Tables, PS_HOLIDAY
		Edit							
		Delete							

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
	Segments	Add							FDOT_Own, Tables, PS_SEGMENT
		Edit							
		Delete							
	Daily Rate Schedule	Add							FDOT_Own, Tables, PS_DRS
		Edit							
		Delete							
	Segment/Rate Schedules	Add							FDOT_Own, Tables, PS_SRS
		Edit							
		Delete							
	Toll Rate Signs (DMS)	Add							FDOT_Own, Tables, PS_TRS
		Edit							
		Delete							
HAR	Radios	Add							FDOT_Own, Tables, HAR_EQUIP
		Edit							
		Delete							
Incident Detection	Citilog Camera	Add							FDOT_Own, Tables, IDS_CITILOG_CAMERA
		Edit							

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
		Delete							
Inventory/Maintenance	Equipment	Add							FDOT_Own, Tables, IMS_EQUIP
		Edit							
		Delete							
	Locations	Add							FDOT_Own, Tables, IMS_LOCATION
		Edit							
		Delete							
	Vendors	Add							FDOT_Own, Tables, IMS_VENDOR
		Edit							
		Delete							
Reporting	Report Groups	Add							RS_REPORT_MENU where CEASED_USE = 0 and ITEMOF_REPORT_MENU_ID = NULL
		Edit							
		Delete							
	Reports	Edit							RS_REPORT_MENU where CEASED_USE = 0 and NOT (ITEMOF_REPORT_MENU_ID = NULL)

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
RMS	Fuzzy Lanes	Edit							FDOT_Own, Tables, RMS_CONTROLLER
	Fuzzy Parameters	Edit							FDOT_Own, Tables, RMS_CONTROLLER
	RMC Controllers	Add							FDOT_Own, Tables, RMS_CONTROLLER
		Edit							
		Delete							
	Special Events	Add							FDOT_Own, Tables, RMS_SPECIAL_EVENT
		Edit							
		Delete							
	Groups	Add							FDOT_Own, Tables, EQUIP_GROUP
		Edit							
		Delete							
RWIS	Poll Cycle	Add							FDOT_Own, Tables, RWIS_DRIVER_DATA
		Edit							
		Delete							
	Stations	Add							FDOT_Own, Tables, RWIS_EQUIP
		Edit							

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
		Delete							
Safety Barrier	Stations	Add							FDOT_OWN, Tables, SB_EQUIP
		Edit							
		Delete							
Scheduled Actions	Schedules	Add							N/A – Redesigned in 6.0
		Edit							
		Delete							
	Sequences	Add							N/A – Redesigned in 6.0
		Edit							
		Delete							
TSS	Alarm Thresholds	Edit							FDOT_OWN, Tables, TSS_LANE
		Delete							
	Detector Map	Add							TSS_LINK, ROADWAY_LINK, ROADWAY_NODE, ROADWAY_MIDPOINT
		Edit							
		Delete							
	Detectors	Add							FDOT_Own, Tables, TSS_DETECTOR
		Edit							
	Detector Tresholds	Add							TSS_DETECTOR_DATA_ALERT_

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
									TSHLD
		Edit							
		Delete							
	Driver Configuration	Add							FDOT_OWN, Tables, TSS_BASE_DRIVERS, Data
		Edit							
		Delete							
	System Configuration	Edit							FDOT_OWN, Tables, TSS_SYSTEM_CONFIG, Data
TVT	Alternate Routes	Add							FDOT_Own, Tables, TVT_ALTERNATE_ROUTES, Data
		Edit							
		Delete							
	Destinations	Add							FDOT_Own, Tables, TVT_DESTINATIONS, Data
		Edit							
		Delete							
	Matching Routes	Add							FDOT_Own, Tables, TVT_MATCHING_ROUTES, Data
		Edit							
		Delete							

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
	Device Templates	Edit							TVT_DEVICE_TEMPLATES
	Message Templates	Add							FDOT_Own, Tables, TVT_TEMPLATES, Data
		Edit							
		Delete							
	Options	Edit							FDOT_Own, Tables, TVT_OPTIONS, Data
	Travel Time Links	Add							FDOT_Own, Tables, TVT_LINKS, Data
		Edit							
		Delete							
VSL	Groups	Add							FDOT_Own, Tables, VSL_GROUP, Data
		Edit							
		Delete							
	Plans	Add							FDOT_Own, Tables, VSL_PLAN, Data
		Edit							
	Zone settings	Edit							Change Treshold time and check FDOT_Own, Tables, VSL_ZONE_SETTING, Data
Misscellaneous	Centers	Add							FDOT_Own, Tables, CENTER_IDS, Data

Module	Object Type	Action	Version 5.1.1		Version 6.0 Oracle		Version 6.0 MSFT SQL SVR		Notes
			Pass	Fail	Pass	Fail	Pass	Fail	
		Delete							
	Device Drivers	Edit							Edit device driver you wish to test and enter new driver name than go back to DB and check that the new changes were saved in the FDOT_Own, Tables, RESOURCE_DRIVERS, Data
	Manufacturers	Add							FDOT_Own, Tables, MANUFACTURERS, Data
User Management	Groups	Add							FDOT_Own, Tables, PREMISSION_GROUPS, Data
		Edit							
		Delete							
	Operator Workstations	Add							FDOT_Own, Tables, WORKSTATIONS, Data
		Edit							
		Delete							
	Passwords	Add							N/A
	Users	Add							FDOT_Own, Tables, USERS, Data
		Edit							
		Delete							

Appendix A: Requirements Reference

FEAT Requirements Reference

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT1.2.22	DB022	Database ID	Database objects that have an ID within the software shall have an internal numeric identifier that is not used for naming of objects by the users of the system	USER	6
FEAT1.2.23	DB023	Business Logic	The software shall implement business logic (not sequences) within the Windows processes (not from within the Database itself)	USER	6
FEAT1.2.23.1	DB023A	Business Logic Exceptions	Exceptions will be made for sequences of primary key/IDs and for exceptionally performance intense operations upon approval by Central Office.	USER	6
FEAT1.2.24	DB024	Supported Databases	The software shall support the use of SQL Server 2012 Standard Edition and Oracle Database Server version 11.1.0.7.0.	USER	6
FEAT1.2.25	DB025	Database Model	The software shall have a database model from which a blank SQL Server and Oracle database can be created using ERWIN, a Commercial off the shelf database modeling tool	USER	6
FEAT1.2.26	DB026	Database Configuration Data	Static configuration data (such as subsystem permissions and system users) shall be included as a versioned data set.	USER	6
FEAT1.2.27	DB027	Database Management	The software shall be equipped with tools to import or export data from any SunGuide database	USER	6
FEAT1.2.27.1	DB027A	Configuable Options	The tool shall be configurable with the following optional parameters: 1) Database schemas to include in the import or export	USER	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT1.2.28	DB028	High Availability and Disaster Recovery	The software shall support the use of high availability and disaster recovery solutions for both Oracle and SQL Server (i.e. Failsafe/RAC/clustering, and DataGuard, respectively and the SQL Server equivalents)	USER	6
FEAT1.2.29	DB029	Batch Inserts	Periodic data archiving shall use batch inserts to insert data into the database, where possible and appropriate.	USER	6
FEAT1.2.30	DB030	Database Performance	When running against a system with 10,000 detector links configured, with appropriate hardware, the SQL Server database server shall archive TSS data to the database no later than two batch insert time periods following the distribution of the data from TSS.	USER	6
FEAT1.2.31	DB031	Regression Testing Oracle	A regression test of the software using Oracle will be performed after a change to the software is made	USER	6
FEAT1.2.32	DB032	Regression Testing SQL Server	A regression test of the software using SQL Server will be performed after a change to the software is made	USER	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT1.2.33	DB033	Ceased Use Flag	A database object that can be deleted by a user shall include a flag that signifies the state of the object. This requirement shall apply to the following tables: COUNTY EM_LANEMAP RS_REPORT_MENU RS_COST EM_VEHICLETYPE EM_VEHICLEMODEL EM_REFERENCEPOINT EM_OFFSETTYPE EM_MAILLIST EM_LOOKUP EM_LOCATION EM_LANETYPE EM_INJURYTYPE EM_EVENTTYPE EM_EVENTSTATUS EM_CONTACT EM_CONDITION EM_AGENCY EM_ACTIVITY	USER	6
FEAT1.2.33.1	DB033A	Ceased Use Not Deleted	Records no longer in use shall be flagged to indicate their usage as ceased, but they will not be deleted from the table	USER	6
FEAT7.14.29	EM040	Affected Area head/tail	When a Construction, Special Event, Bridge Work, Visibility, Weather or Flooding event is created, the user shall have the ability to set the head and tail of the affected area.	GUI	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT7.14.30	EM041	Populate Event Contact Phone Number	When an event contact is selected and a phone number for that contact has been configured, the software shall automatically populate the contact phone number field	GUI	6
FEAT7.14.31	EM042	Nearest CCTV Camera	When an event location is selected, the Nearest CCTV Camera will be set to the geographically closest camera to the event.	GUI	6
FEAT7.14.31.1	EM042A	Changing Nearest CCTV Camera	When changing an event location, if the Nearest CCTV Camera is not the geographically closest camera, the Nearest CCTV selection will not change.	GUI	6
FEAT7.27	VOD001	Video on Desktop	The software shall provide Video on Desktop capabilities	GUI	6
FEAT7.27.1	VOD002	Launch Window from context menus	The operator shall be able to launch the Window from the context menu of the operator map, closed-circuit television (CCTV) camera device icons, and the menu of another Window already open	GUI	6
FEAT7.27.2	VOD003	Drag and drop video sources	The software shall provide drag and drop operation of CCTV icons onto the Video on Desktop	GUI	6
FEAT7.27.3	VOD004	Launch to Viewer to last open Window	When video is launched via context menu, the user shall choose the Window in which the video should be displayed and the new Viewer shall be placed in the last position	GUI	6
FEAT7.27.4	VOD005	Auto-arrange Viewers	When a Viewer is added to, removed from, or moved within the Window, the Window will automatically arrange Viewers	GUI	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT7.27.5	VOD006	Auto-arrange Viewers in order	When a Viewer placement modification is made, the Window shall automatically rearrange Viewers by moving them on the right side of the placement modifications, filling positions in order towards the right and continuing towards the lower rows of the modification in the same order as they were prior to the placement modification	GUI	6
FEAT7.27.6	VOD006	Auto-arrange Viewers to maximize size	The auto-arrange behavior will resize and position the fewest number of Viewers on the same row and column as possible to maximize the area of each viewer	GUI	6
FEAT7.27.7	VOD007	Drag and drop tour creation	When a source is dragged and dropped on top of an existing Viewer within a Window, the source will combine with the source(s) already in the Viewer as an ad-hoc tour where each source dwells for a default time of 5 seconds before switching. The user may change the dwell time as desired.	GUI	6
FEAT7.27.8	VOD008	Drag and drop indicator	When a source is being dragged over the center area of a Window, the Window will visually indicate if the source would be placed inside another Viewer to create a tour or if the source would be added as a new Viewer	GUI	6
FEAT7.27.9	VOD009	Viewer center area for drag and drop	The center area of a Viewer used for a drag and drop location for combining sources in a tour will not consume the entire Viewer allowing room to drag and drop Viewers between or on the outside of existing Viewer's' center areas	GUI	6
FEAT7.27.10	VOD010	Move Viewers	The Window will allow users to drag and drop Viewers into different positions and into different Windows	GUI	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT7.27.11	VOD011	Maintain Viewer aspect ratio	The Viewer will maintain the aspect ratio of the video source	GUI	6
FEAT7.27.12	VOD012	Viewer source label	The top portion within the Viewer will contain a one-line label indicating the video source name or tour name	GUI	6
FEAT7.27.13	VOD013	Viewer sources in tour list	The Viewer shall provide a means for a Video on Desktop Viewer Tour List to appear listing the video sources that are in the tour	GUI	6
FEAT7.27.14	VOD014	Reorder and remove sources from tour	The list items in the Video on Desktop Viewer Tour List will allow the user to reorder and remove items in the tour list	GUI	6
FEAT7.27.15	VOD015	Edit tour	The Viewer tour list's name, viewer sources, and dwell time will be changeable from the Viewer tour list	GUI	6
FEAT7.27.16	VOD016	Save and cancel tour modifications	The Video on Desktop Window Viewer Tour list shall contain save and cancel buttons that will either update or not update the name, the video sources, and the dwell times in the tour, respectively, and will both close the list	GUI	6
FEAT7.27.17	VOD017	Store tours in database	The Video on Desktop Window Viewer Tours, including their name, sources, and dwell times, shall be saved as a user-specific preference when either the viewer tour list is saved or the Window configuration is saved	GUI	6
FEAT7.27.18	VOD018	Store Window layouts in SunGuide database	The Window shall allow the user to save the Window preset information in the SunGuide database as a user-specific preference	GUI	6
FEAT7.27.19	VOD019	Window layout data	The Window layout data shall include the Viewers and their positions, their video sources, and their saved or unsaved tours	GUI	6
FEAT7.27.20	VOD020	Recall Window layout information	The Window shall allow the user to recall the Window preset information from the menu	GUI	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT7.27.21	VOD021	Launch layout Window from Operator Map	The Operator Map context menu shall allow the user to launch a Window with any of the configured Window presets in addition to a no-preset option that launches an empty Window	GUI	6
FEAT7.27.22	VOD022	Resize Window	The Window shall be resizable by the user	GUI	6
FEAT7.27.23	VOD023	Maximize Window as full screen	The Window shall enter a full screen mode when maximized	GUI	6
FEAT7.27.24	VOD024	Exit full-screen mode of Window	The Window shall exit full-screen mode when the user presses the escape key or the restore window size control	GUI	6
FEAT7.27.25	VOD025	Translucent controls in Viewer	The Viewer shall have translucent command controls and translucent pan-tilt-zoom (PTZ) controls that can be animated to fade in to be revealed and fade out to be hidden	GUI	6
FEAT7.27.26	VOD026	Hide Viewer PTZ controls	The Viewer shall hide PTZ controls when the mouse pointer is not positioned over the Viewer.	GUI	6
FEAT7.27.27	VOD027	Reveal Viewer PTZ controls	The Viewer shall reveal PTZ controls when the mouse ponter is positioned over the Viewer and the user has a lock on the camera.	GUI	6
FEAT7.27.28	VOD028	Nudge controls	The Viewer PTZ controls shall include nudge buttons that command the camera to nudge in the selected direction	GUI	6
FEAT7.27.29	VOD029	PTZ visual indicator	The Viewer shall reveal a PTZ control that is a visual indicator that the Viewer is in PTZ mode and shall hide the visual indicator when, and only when, the Viewer is no longer in PTZ mode	GUI	6
FEAT7.27.30	VOD030	Engage panning in PTZ mode and left mouse down	Panning shall be engaged when the Viewer is in PTZ mode and the user drags the PTZ control in the desired direction.	GUI	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT7.27.31	VOD031	Pan using range of speeds	The Viewer PTZ controls shall allow the camera to be panned in a range of speeds, depending on how close to the center or the edge of the Viewer the mouse pointer is positioned	GUI	6
FEAT7.27.32	VOD032	Viewer zoom controls	The Viewer's PTZ controls shall include zoom controls.	GUI	6
FEAT7.27.33	VOD033	PTZ controls contain camera preset buttons	The Viewer's PTZ controls shall include preset buttons that command the camera to move to a stored preset	GUI	6
FEAT7.27.34	VOD034	PTZ controls allows save presets	The Viewer's PTZ controls shall include a save to preset control that, when clicked, allows the user to save to existing or new camera presets	GUI	6
FEAT7.27.35	VOD035	Launch CCTV details	The Viewer's command controls shall include a method of launching the CCTV detail status dialog	GUI	6
FEAT7.27.36	VOD036	Video on Desktop performance warning	The Viewer shall prompt the user with a warning and request for confirmation when attempting to launch additional viewers and the workstation resource utilization is high	GUI	6
FEAT7.27.37	VOD037	Performance of non-local user interface response	All user interface responses of adding video streams shall occur within 1 second of the completion of the user's command	GUI	6
FEAT7.27.38	VOD038	Non-blocking user interface	While the software is processing a user command, it shall not prevent the user from further interactions with the software while a previous command is being processed.	GUI	6
FEAT7.27.39	VOD039	Performance of user interface response	All local user interface responses that do not require adding video streams shall occur within 100 milliseconds of the completion of the user's command.	GUI	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT7.27.40		Snapshot over CCTV icons when mouse hovers	The Operator Map shall show a snapshot that is no older than one minute when the mouse hovers over the camera icon within 100 milliseconds.	GUI	6
FEAT7.27.41		Send Viewer contents to shared video	The Viewer shall have a context menu item named "Send to Shared Viewer" with child context menu items of shared destination video walls and virtual video walls from which to choose for placing the Viewer's video or video tour contents	GUI	6
FEAT7.27.42		Send Viewer contents to shared Video Wall Viewer	Once the operator selects the shared destination video wall to send the Viewer's video or tour to, the software shall launch a video wall control dialog video from which the operator can place the video or tour via one click on the desired viewer	GUI	6
FEAT9.4.1	DM002A	DMS Priority	When creating a DMS library message, the user shall be able to configure a message priority.	DMS	6
FEAT9.16	DM016	Color DMS	The software shall support the use of color DMSs.	DMS	6
FEAT9.17	DM017	Color DMS through C2C	The software shall support the transmission of the color DMS status via Center to Center.	SAS	6
FEAT9.18	DM018	Archival of Color DMS	The software shall support the archival of the transmission of color DMS messages in the database	SAS	6
FEAT10.25	TD020	EIS G4	The software shall allow the user to configure a detector to use the EIS G4 protocol	TSS	6
FEAT10.25.1	TD020A	Data Collection	The software shall support communicating to the detector using the EIS G4 protocol including receiving speed, volume, occupancy, and classification data.	TSS	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT10.26	TD021	Volume Weighted Average	TSS shall produce the average speed based on a volume weighted averaging method.	TSS	6
FEAT10.26.1	TD021A	Lane Average	The rolling average for a lane shall weight the speed on each vehicle in the rolling average period equally.	TSS	6
FEAT10.26.2	TD021B	Link Average	For a given poll cycle, the TSS link speed average shall weight the speed of each vehicle in each lane equally.	TSS	6
FEAT10.26.3	TD021C	Link Rolling Average	The rolling average for a TSS link shall weight the speed on each vehicle in the rolling average period equally.	TSS	6
FEAT10.26.4	TD021D	No Volume Condition	For a given poll cycle, if the volume reported 0, the lane shall not report a speed for that period	TSS	6
FEAT10.26.5	TD021E	Types of Link Averages	TSS links shall provide an average link speed based on raw data and an average based on a rolling average.	TSS	6
FEAT10.26.5.1	TD021E1	Discard Lane Average for 0 Volume	For a given poll cycle, if the volume reported 0, the lane shall not be included in the raw data link average	TSS	6
FEAT10.26.5.2	TD021E2	Discard Link Average for 0 Volume	For the rolling data link average, if the link reports 0 volume for a given poll cycle, that cycle shall not be include in the rolling data link average.	TSS	6
FEAT10.26.5.3	TD021E3	No Data Condition	If no data is available for the link average, the link average shall not report a speed for that period	TSS	6
FEAT10.27	TD022	Minimum Volume Threshold for alert generation	The software shall have a configuration parameter specifying the minimum volume needed for a lane in order to produce an alert.	TSS	6
FEAT10.27.1	TD022A	Non-alert Conditions	The software shall not generate an alert if the poll cycle reports a volume less than the minimum volume needed to produce an alert.	TSS	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT13.20	CC006	Head/Tail Location sent to FLATIS	When an "aafected area" event is selected and the user has set the head and tail of the event, the head of the event shall be sent as the primary event location and the tail of the event shall be sent as the secondary event location	C2C	6
FEAT18.3.9	TMT039	Enable/Disable Systemwide	The software shall accept a command from a user that will enable or disable travel time message generation on a system-wide basis	TVT	6
FEAT18.3.10	TMT0310	Enable/Disable for a single DMS	The software shall accept a command from a user that will enable or disable travel time message generation for a specified DMS	TVT	6
FEAT18.3.11	TMT040	No Units	The software shall have a configuration parameter that will allow travel times to be posted to DMS without including the units.	TVT	6
FEAT20.4	SAS004	Travel Time Message Scheduling	The software shall allow the scheduling of the enabling and disabling of travel time messages.	SAS	6
FEAT20.4.1	SAS004A	Scope of Enable/Disable	The travel time message scheduling shall allow for the invocation of a disable travel times messaging command and an enable travel times messaging command on a per DMS basis as well as a system wide basis.	SAS	6
FEAT20.5	SAS005	Schedules	The software shall allow the user to schedule a series of predefined actions within the system.	SAS	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT20.5.1	SAS005A	Schedule Parameters	The schedule shall have the following parameters: 1. The start and end time of the schedule shall be a date and time of day 2. The default value of the start time shall be the clock time ending in 0 or 30 minutes immediately after the current system time and the end time will default to one hour after the start time 3. When the start time is adjusted, the end time shall preserve the current duration of the event 4. The duration shall be displayed as a non-editable value near the end time 5. An all day event button shall be displayed near the start time and when clicked shall set the start time to 12:00:00 AM and the end time to 11:59:59 PM 6. The schedule shall allow the user to select the days on the week the schedule should execute when the schedule is active.	SAS	6
FEAT20.6	SAS006	Sequences	The software shall allow for sequences, or a set of actions, to be configured within the schedule configuration	SAS	6
FEAT20.6.1	SAS006A	Available Camera Actions	The software shall support the following actions against a user selected camera: pan for a user specified amount of time, tilt for a user specified amount of time, zoom for a user specified amount of time, and move to a user specified preset.	SAS	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT20.6.2	SAS006B	Available options for travel time scheduling	The software shall support the following actions for travel time message generation: 1. Enabling or disabling travel time message generation for a single DMS 2. Enabling or disabling travel time message generation for all DMS signs	SAS	6
FEAT20.6.3	SAS006C	Enable/Disable Schedule within a Schedule	The software shall support an action of invoking an enable command and a disable command on a user selected schedule, not including the schedule itself	SAS	6
FEAT20.6.4	SAS006D	Pausing schedule during execution of next item	The software shall support an action of pausing for a specified number of hours, minutes and seconds before performing the next action.	SAS	6
FEAT20.7	SAS007	Schedule Naming	The software shall allow the user to specify a name for the schedule	SAS	6
FEAT20.7.1	SAS007A	Unique Name	The name shall be required to be unique	SAS	6
FEAT20.7.2	SAS007B	Storing Schedule Name	The name shall be able to be modified and not be used as a primary key	SAS	6
FEAT20.7.3	SAS007C	Default Name	The name shall initially default to "New Schedule"	SAS	6
FEAT20.7.3.1	SAS007C1	If default name is in use	If the name "New Schedule" is in use, a space and the number one or the next available whole number will be appending to the default schedule name in order to make the name unique	SAS	6
FEAT20.8	SAS008	Schedule Copying	The software shall allow the user to copy a schedule from an existing schedule	SAS	6
FEAT20.8.1	SAS008A	Copied Schedule Default Naming	The name shall default to the exiting schedule's name appended with a space and the text "Copy"	SAS	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT20.8.1.1	SAS008A1	If default name is in use	If the default name is in use, a space and the number one or the next available whole number will be appending to the default schedule name in order to make the name unique	SAS	6
FEAT20.9	SAS009	Enable/Disable Schedule	The software shall allow the schedule to be enabled or disabled by the user	SAS	6
FEAT24.6.6	AV014A	Bulk Updates	AVL shall log vehicle positions messages sent in bulk directly to the database without generating updates to the Operator Map.	AVL	6
FEAT24.10	AV014B	Bulk Update for RRXML Driver	The RRXML driver will support a method for sending multiple position updates as a single request.	AVL	6
FEAT24.11	AV014C	Logging Alerts	The software shall log stop alerts and geofence alerts including operator responses to the database	AVL	6
FEAT26.2.6	EM030A	Construction Event Type	EM shall have an event type of "Construction"	EM	6
FEAT26.2.7	EM030B	Amber Alert Event Type	EM shall have an event type of "Amber Alert"	EM	6
FEAT26.2.8	EM030C	Leo Alert Event Type	EM shall have an event type of "Leo Alert"	EM	6
FEAT26.2.9	EM030D	Silver Alert Event Type	EM shall have an event type of "Silver Alert"	EM	6
FEAT27.2.6	EM026	Abbreviating Messages	The software shall support the abbreviation of phrases when automatically generating messages for a response plan	EM	6
FEAT27.2.6.1	EM026A	Multi Word Abbreviations	The software shall allow the user to configure a multiple word abbreviations	EM	6
FEAT27.2.6.2	EM026B	Abbreviation Priority Precedence	If two abbreviations have the same priority, abbreviations with multiple words shall take precedence over abbreviations consisting of a single word	EM	6
FEAT27.2.7	EM031A	Device Message Ownership	If an operator activates a response plan, the operator shall be the owner of any device messages posted due to the response plan	EM	6

FEAT	SunGuide ID	Name	Requirement text	Subsystem	Version
FEAT27.4.3	EM032A	Amber Alert template	When configuring a device template or a default device template, the user shall be able to configure a template for events with the event type of "Amber Alert"	EM	6
FEAT27.4.4	EM032B	Leo Alert Template	When configuring a device template or a default device template, the user shall be able to configure a template for events with the event type of "Leo Alert"	EM	6
FEAT27.4.5	EM032C	Silver Alert Template	When configuring a device template or a default device template, the user shall be able to configure a template for events with the event type of "Silver Alert"	EM	6

SUB Requirements Reference

SUB	SunGuide ID	Name	Requirement text	Traced-from	Subsystem	Version
SUB7.4	DMS04	Color DMS			DMS	6
SUB7.4.1	DMS041	NTCIPv2 Support	The software shall additionally support the NTCIP version 2 protocol		DMS	6
SUB7.4.2	DMS042	Color DMS Templates	The software shall have a standard color DMS layout for creating color DMS messages and templates		DMS	6
SUB7.4.2.1	DMS042A	Standard DMS layout	The standard color DMS layout shall include one graphic and one text message per phase		DMS	6
SUB7.4.2.2	DMS042B	Graphic Height	The graphic shall occupy the entire height of the sign		DMS	6
SUB7.4.2.3	DMS042C	Graphic Aspect Ratio	The graphic shall maintain its aspect ratio		DMS	6
SUB7.4.2.4	DMS042D	Graphic Left Justified	The graphic shall be left justified within the layout		DMS	6
SUB7.4.2.5	DMS042E	DMS Text Area	The text area shall be the remaining portion of the layout not occupied by the graphic		DMS	6

SUB	SunGuide ID	Name	Requirement text	Traced-from	Subsystem	Version
SUB7.4.2.6	DMS042F	Centered Text	The text message shall be centered within the text area		DMS	6
SUB7.4.2.7	DMS042G	Text Too Large	In the event that the text is too large to fit in the text area, text will be placed on the next phase on the DMS message.		DMS	6
SUB7.4.2.8	DMS042H	Removing the Graphic	When generating a response plan, if the text is too large to fit in the text area after abbreviations are applied a response plan shall remove the image and the text area will occupy the entire layout.		DMS	6
SUB7.4.2.8.1	DMS042H1	Adding sign to a response plan	If a message generated using templates within a response plan is unable to fit on the DMS sign, the user shall have the option of adding the sign to the response plan and manually specifying the message.		DMS	6
SUB7.4.3	DMS043	Graphics Library	The software shall have a graphics library with add and delete functionality for color DMS images to be used in the messages or templates.		DMS	6
SUB7.4.3.1	DMS043A	Icon type	The graphics shall have information stored with them to indicate if they are a shield of a roadway, an icon associated with an event type, or just an image with no association.		DMS	6
SUB7.4.3.2	DMS043B	Content of message to sign	The software shall verify images and messages each time a message is activated on the sign using a cyclic redundancy check on the message and on each image		DMS	6
SUB7.4.3.3	DMS043C	Deleting graphics in use	The software shall handle the scenario of a user attempting to delete a graphic that is associated to one or more stored or active messages.		DMS	6
SUB7.4.3.3.1	DMS043C1	User Notification	The user will be notified of the list of messages that have the graphic associated to them.		DMS	6
SUB7.4.3.3.2	DMS043C2	User Confirmation	DELTED- The software will confirm that the user still wants to delete the graphic.		DMS	6

SUB	SunGuide ID	Name	Requirement text	Traced-from	Subsystem	Version
SUB7.4.3.3.3	DMS043C3	Disassociate Graphic	DELETED-If the user confirms to delete the graphic, the software will first disassociate all references to the graphic and then delete the graphic.		DMS	6
SUB7.4.3.3.3.1	DMS043C3A	Unable to Disassociate Notification	If a subsystem which uses DMS graphics is not running when a user attempts to delete a graphic, the user shall be notified this check cannot be performed.		DMS	6
SUB7.4.3.3.4	DMS043C4	Notification of graphic use	If the graphic is in use in a stored or active message at the time the user tries to delete the graphic, the user shall be unable to delete the graphic and be notified of the locations where the graphic is in use.		DMS	6
SUB7.4.4	DMS044	Color DMS message template generation	The software shall support color DMS message and color DMS message template generation		DMS	6
SUB7.4.4.1	DMS044A	Background and Text Color	The software shall allow the user to change the default background and default text color of messages and message templates.		DMS	6
SUB7.4.4.1.1	DMS044A1	MUTCD Colors	For user defined color schemes, the software shall present the user with options of color that are allowed by the MUTCD.		DMS	6
SUB7.4.4.1.1.1	DMS044A1A	Text Color Options	Text color options are red, white, yellow, orange, fluorescent yellow-green, fluorescent pink, and amber.		DMS	6
SUB7.4.4.1.1.2	DMS044A1B	Background Color Options	Background color options are black, blue, green		DMS	6
SUB7.4.4.1.2	DMS044A2	Default Colors for EM templates	The software shall provide a default background color of black and default text color of yellow for event management templates.		DMS	6
SUB7.4.4.1.3	DMS044A3	Background Colors other than EM	The software shall provide a default background color of black and default text color of amber for all templates other than event management templates.		DMS	6

SUB	SunGuide ID	Name	Requirement text	Traced-from	Subsystem	Version
SUB7.4.4.1.4	DMS044A4	Using graphics in templates	The software shall generate color DMS messages from templates for events using graphics available in the graphic library		DMS	6
SUB7.4.4.1.4.1	DMS044A4A	Using Event Type Graphic	If the event type graphic is available, it shall be used		DMS	6
SUB7.4.4.1.4.2	DMS044A4B	Using Shield Graphic	If the event type graphic is not available and the shield corresponding to the incident's location is available, the shield graphic shall be used		DMS	6
SUB7.4.4.1.5	DMS044A5	Travel time template shield graphic	The software shall allow the user to select the appropriate shield graphic for a device's travel time template.		DMS	6
SUB7.4.5	DMS045	Color DMS Display	The software shall support color DMS message status display showing a visual representation of each pixel of the sign that shall appear in the short status, detailed status, and hover over of the DMS sign from the operator map.		DMS	6
SUB12.3.4.1	DA03D1	Rollup - Volume Weighted Speed Average	The rollup average for a TSS link shall weight the speed on each vehicle in the rollup interval equally.		DA	6
SUB27.2.10	SPARR031	Bulk Update	The driver will support a web service method for sending multiple position updates as a single request.		SPARR	6