SunGuide®:

Software Integration Case Procedures

SunGuide-SICP-7.0

Prepared for:

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List of Acronyms

AVL .....Automatic Vehicle Location
BMS……....Beacon Management Subsystem
C2C……...Center to Center
CCTV.....Closed Circuit Television
CF……...Configuration File
DMS.....Dynamic Message Sign
EH……...Executive Handler
EM……..Event Management
FAT.....Factory Acceptance Test
FDOT .....Florida Department of Transportation
FP…….. .Footprints
GUI .....Graphical User Interface
IC.....Integration Case
ICD.....Interface Control Document
IDS……..Incident Detection Subsystem
IN……....Installer
ITN.....Invitation to Negotiate
ITS.....Intelligent Transportation Systems
MLS……Managed Lanes Subsystem
NTCIP…….Nation Transportation Communication for ITS Protocol
ONVIF……....Open Network Video Interface Forum
RWIS.....Roadside Weather Information Sensor
SAA……Software Administration Application
SAS…….Scheduled Action Subsystem
SE……....Small Enhancements
SICP .....Software Integration Case Procedures
SIP.....Software Integration Plan
SPARR.....Smartphone Application for Road Rangers
SQL.....Structured Query Language
SRS .....Software Requirements Specification
SwRI .....Southwest Research Institute
TCP .....Transmission Control Protocol
TCS…….Traffic Control Subsystem
TMC.....Transportation Management Center
TPS…….Truck Parking Subsystem
TSS.....Traffic Sensor Subsystem
TVT……Travel Times Subsystem
WWD…….Wrong Way Driving

REVISION HISTORY

Revision	Date	Changes
7.0 -Draft	January 26, 2017	Initial release for Release 7.0 functionality

1. Scope

1.1 Document Identification

This document serves as the Software Integration Case Procedure (SICP) for Release 6.2 of the SunGuide® software. This version is implementing

- Alarm Sound Configuration
- Auto Merge and Travel Time Messages
- Disabling Response Plan Items
- Travel Time Message Expiration
- Travel Time Multiple Device Templates
- Unconfirmed Lane Blockages
- Truck Parking Subsystem
- System Messages Filtering
- Managed Lanes Subsystem
- Traffic Control Subsystem
- CCTV Polling
- Ramp Meter Scheduling
- Ramp Meter Archive
- CCTV Preset Lock
- PTZ Control of Tour Cameras
- Removal of Non-TSS Links
- User Interface

The SICP contains the detail test procedures for conducting Factory Integration Testing (FAT).

1.2 Project Overview

The Florida Department of Transportation (FDOT) SunGuide Support, Maintenance and Development Contract, contract number BDQ69, addresses the necessity of supporting, maintaining and performing enhancement development efforts to the SunGuide software. The SunGuide software was developed by the FDOT in a contract starting in October 2003. The SunGuide software is a set of Intelligent Transportation System (ITS) software that allows the control of roadway devices as well as information exchange across a variety of transportation agencies and is deployed throughout the state of Florida. The SunGuide software is based on ITS software available from the state of Texas; with significant customization and development of new software modules to meet the needs of the FDOT. The following figure provides a graphical view of the SunGuide software:

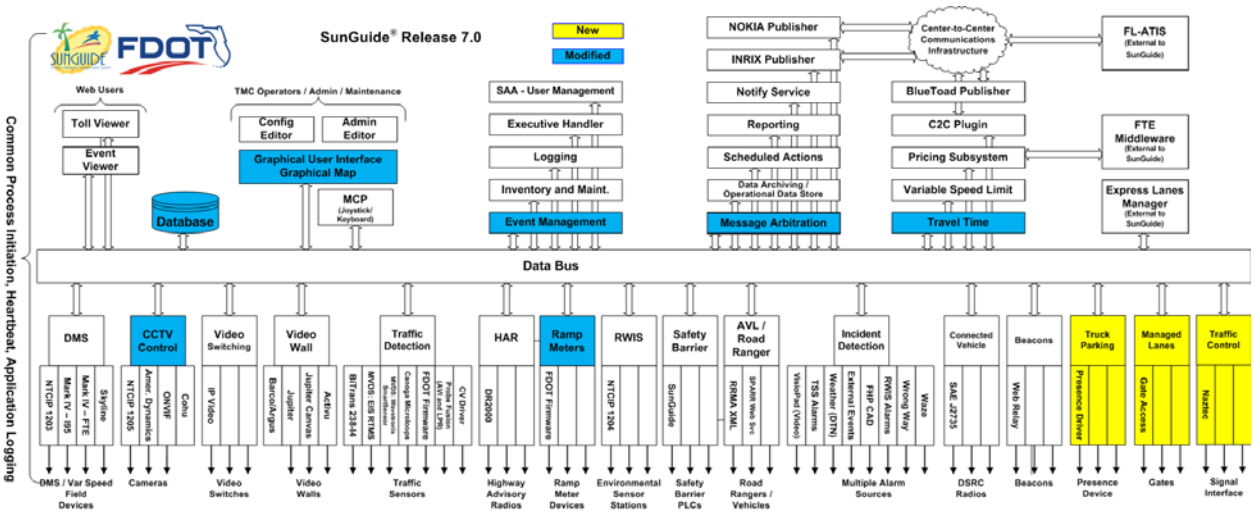

Figure 1-1 - High-Level Architectural Concept

The SunGuide development effort began in October 2003, seven major releases have been developed and this document is addressing an incremental update of seventh release of the software. After the development, the software will be deployed to a number of districts and expressway authorities throughout Florida and support activities will be performed.

1.3 Related Documents

Additional information regarding the SunGuide project can be found in the following documents and electronic publications:

- FDOT Scope of Services: *BDQ69, Standard Written Agreement for SunGuide Software Support, Maintenance, and Development, Exhibit A: Scope of Services.* July 1, 2010.
- Notice to Proceed: Letter to Southwest Research Institute® (SwRI®) for BDQ69, July 1, 2010
- Letter of Authorization 015: Letter to SwRI for BDQ69, June 18, 2015.
- Letter of Authorization 015: Supplement #1: Letter to SwRI for BDQ69, June 7, 2016.
- Letter of Authorization 015: Supplement #2: Letter to SwRI for BDQ69, Dec 3, 2016.
- SunGuide Project website: http://www.sunguidesoftware.com.

1.4 Contacts

The following are contact persons for the SunGuide software project:

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- Tucker Brown, SwRI Project Manager, tbrown@swri.com, 210-522-3035
- Roger Strain, SwRI Software Project Manager, rstrain@swri.com, 210-522-6295

2. Test Descriptions

The requirements contained in the following sections were extracted from the Software Requirements Specification (SRS), identifier: SunGuide-SRS-7.0.

2.1 Test Description Organization.

2.1.1 Integration Cases

The following integration cases have been created for the purposes of acceptance testing. The test cases are organized by the integration cases. Additionally, each test case is given both a descriptive name and test case number. The test case number has a prefix which denotes which SunGuide subsystem is being tested. The integration cases and test case prefixes are listed below:

- IC-1: Alarm Sound Configuration
- IC-2: Auto Merge and Travel Time Messages
- IC-3: Disabling Response Plan Items
- IC-4: Travel Time Message Expiration
- IC-5: Travel Time Multiple Device Templates
- IC-6: Unconfirmed Lane Blockages
- IC-7: Truck Parking Subsystem
- IC-8: System Messages Filtering
- IC-9: Managed Lanes Subsystem
- IC-10: Traffic Control Subsystem
- IC-11: CCTV Polling
- IC-12: Ramp Meter Scheduling
- IC-13: Ramp Meter Archive
- IC-14: CCTV Preset Lock
- IC-15: PTZ Control of Tour Cameras
- IC-16: Removal of Non-TSS Links
- IC-17: User Interface
- IC-18: Footprints

2.1.2 Test Case Organization

Each test case consists of

- A statement describing the test case
- The requirements to be tested by the test case
- Preconditions which must be satisfied prior to running the test
- The test procedure itself in table format with space for marking pass / fail

2.1.3 SunGuide System Installation

The test cases are intended to be to be performed and demonstrated on a SunGuide system at the SwRI development laboratory. This section describes the minimal configuration that is utilized for these integration cases. Individual *Test Procedures* which have additional equipment requirements or conditions which must be met before running the test procedure have been noted within the description of the *Test Procedure*.

2.1.4 Equipment Needed

The tests described within this document are written with the assumption that the described testing will occur in SwRI ITS testing facilities. The following sections further describe the hardware and software that are necessary for the testing.

2.1.5 Hardware Preparation

These test procedures are designed to be generic for any SunGuide testing activity. The tests that will be performed at SwRI during the Factory Acceptance Test (FAT) will utilize the Operator Map, XML Test Client, hardware devices such as cameras and DMSs, and various simulators to feed data into SunGuide. The figure below provides a high-level overview of the software/hardware that will be used to perform the Release 7.0 testing. All testing will be completed against a SunGuide server with a SQL Server database and a SunGuide server with an Oracle database. There will also be a SunGuide 6.2 application available for comparison to older dialogs during the GUI testing portion of the testing. Note that each integration case uses the same hardware setup so this diagram is not duplicated at the beginning of each test case.

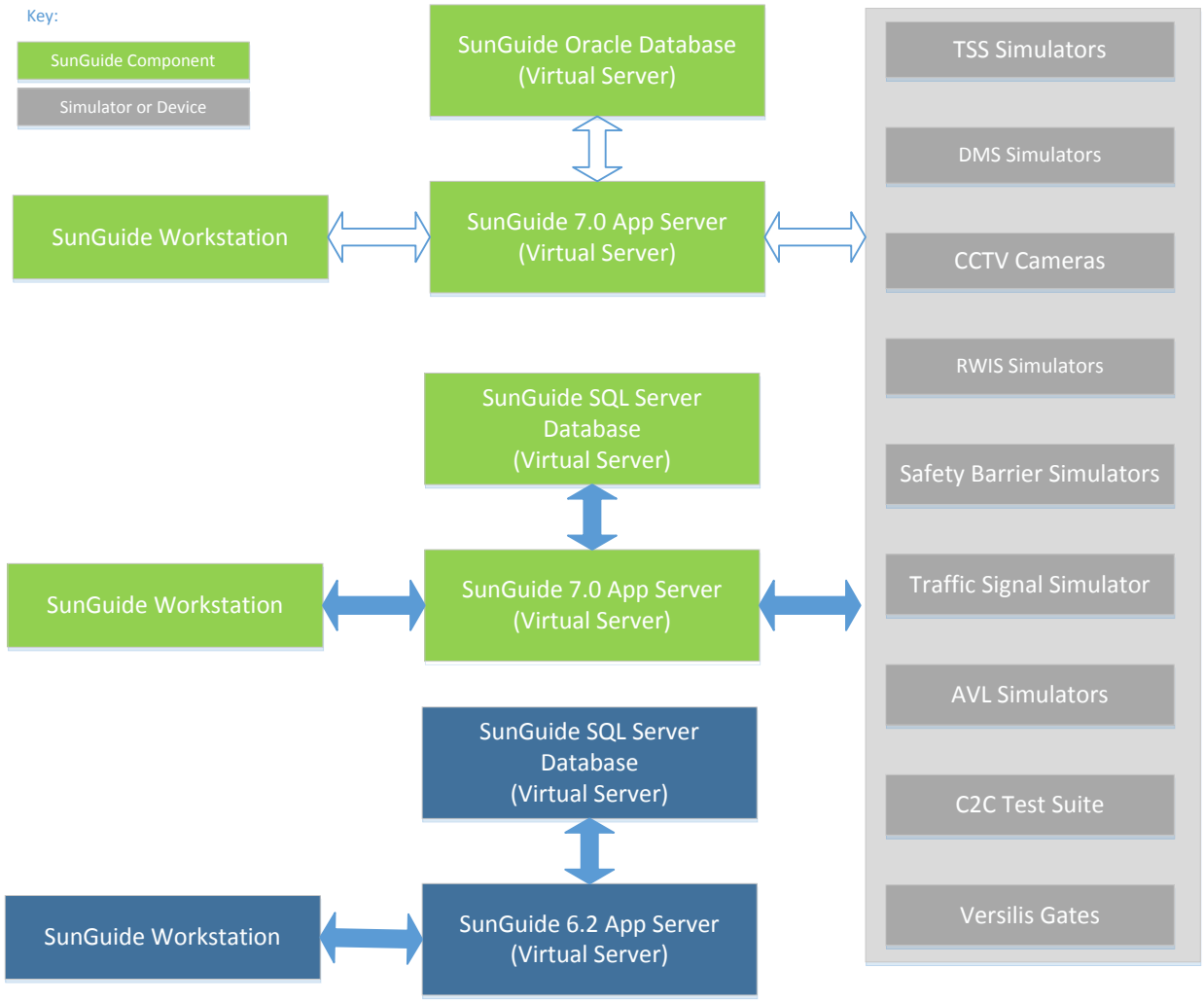

Figure 2-1. Hardware/Software Testing Environment

2.1.6 Software Preparation

Software needs to be installed as shown in the following table. The SunGuide software installation makes use of two configuration files, one for the non-Internet Information Service (IIS) applications, and one for the IIS applications[1].

Software Installation	**SunGuide Application Servers**	**SunGuide Database Servers**	**SunGuide Workstation A**	**SunGuide Workstation B**	**SunGuide Workstation C**
Minimum of Windows 2008 Server with current service packs and hot fixes	✓	✓			
IIS	✓				
Oracle RDBMS		✓			
SQL Server		✓			
SunGuide software	✓				
Windows 7			✓	✓	✓
ODP.NET	✓	✓	✓	✓	✓
SQL Developer		✓	✓	✓	✓
Status Logger (SL) Viewer	✓		✓	✓	✓
Executive Handler Viewer	✓		✓	✓	✓
TSS Simulator	✓				
DMS Simulator	✓				
RWIS Simulator	✓				
Safety Barrier Simulator	✓				
Traffic Signal Simulator	✓				
C2C Test Suite	✓				
AVL Simulator	✓				
Alert Simulator	✓				
Versilis Gate Test System	✓				
CCTV Cameras	✓				

[1] This is due to the inability of the IIS applications (administrative subsystem) to access files outside the IIS directory structure.

2.1.7 Record Keeping

Each test step within this test procedure includes a space to note whether a specific test step passed or failed. This shall be maintained in both hardcopy and softcopy form. The hardcopy will be signed by witnesses from FDOT and SwRI respectively. Witnesses will note the start time and stop time for each test.

2.2 IC-1: Alarm Sound Configuration

2.2.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements to the Operator Map and the IDS and AVL subsystems to allow the user to configure whether or not to receive audible alarms and to select the sound file to play for each type of audible alarm.

2.2.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 1: Alarm Sound Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
GUI005	FEAT7.28.5	Audible Alarm Configuration	The software shall allow the user to configure whether or not to receive audible alarms for the following types of alerts: • Road Ranger Geofence Alerts • Road Ranger Stop Alerts • WWD alerts • FHP Alerts • Waze Alerts • TSS Alerts • VisioPad Alerts • RWIS Alerts
GUI005A	FEAT7.28.5.1	Sound Files	The software shall allow the user to select the sound file to play for each type of audible alarm.

2.2.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- Users will configure the sounds for each alarm type and hear them as new alarms are created.

2.2.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- SAA
- AVL
- IDS
- TSS
- RWIS

- SB
- C2C

Devices Required

The following devices will be used during the test:

- N/A

Configuration Required

The following will be setup/configured before the test is performed:

- The Alert Simulator will be configured to allow sending each type of alert specified in the requirements for this test.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT7.28.5	Log into Operator Map and navigate to the Configuration > System Settings dialog > Alert Sounds tab. The initial state of this tab should have all alert sounds enabled, and no custom values defined for the Sound File URI. Using the “Preview” column buttons, play the Default sound and note that the default provided alert sound is played. For each alert type, send an alert using the Alert Simulator and verify that the Default sound is played. After testing all alert types, dismiss all alerts from the System > System Alerts tab. Finally, test each alert type one at a time by unchecking the Enabled checkbox, saving, sending an alert with the simulator, and verifying that an audible alarm is not played. After testing all alert types, dismiss all	Audible alarms for each of the specified types are heard when they are enabled and not heard when they are disabled.	☐	☐

		alerts from the System > System Alerts tab.			
2	FEAT7.28.5.1	Log into Operator Map and navigate to the Configuration > System Settings dialog > Alert Sounds tab. If not already enabled, enable all alert sounds. Add a custom Default sound by entering a Sound File URI for the Default sound. Ensure that all other Sound File URI's are blank. Save the system sound settings dialog. Using the "Preview" column button, play the Default sound and note that the Custom Default sound is played. For each alert type, send an alert using the Alert Simulator and verify that the Custom Default sound is played. After testing all alert types, dismiss all alerts from the System > System Alerts tab. Individually test each alert type by assigning it a sound file that is not the default sound. Ensure that no other alert uses the same sound. Save the system settings dialog. Using the "Preview" column button, play each sound and note that the correct sound is played. Using the Alert Simulator, send an alert and verify that the correct sound is played. Repeat for all alert types.	The user can specify a sound file for each type of audible alarm.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.3 IC-2: Auto Merge Event and Travel Time Messages

2.3.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements to the MAS, EM, DMS, and TVT subsystems to allow event messages and travel time messages to automatically merge on a message queue.

2.3.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 2: Travel Time Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
TMT046	FEAT18.3.13	Auto Merge Travel Times	When configuring a DMS sign, the software shall allow the user to select whether or not travel time messages sent to the sign should attempt to automatically merge with other messages.
TMT046A	FEAT18.3.13.1	Default Auto Merge Status	The software shall default all signs to not auto-merge messages.
TMT042	FEAT18.2.15	Preferred Travel Time Phase	When a user configures a travel time message, the travel time configured on the 1st phase shall be the preferred travel time.
TMT042A	FEAT18.2.15.1	Merge Messages	If a DMS message on the top of the message queue is only displaying one phase and the next highest priority message is a travel time message, the software shall auto-merge the travel time message with the message on top of the queue.
TMT042A1	FEAT18.2.15.1.1	Merging Multi-Phase Messages	If the resulting merge of the message would be more than 2 phases, the software shall merge the top level message and the preferred travel time message.
TMT043A	FEAT18.2.16.1	Response Plan Override Auto Merge Setting	The software shall allow the user to override the auto merge setting of the DMS.
TMT043	FEAT18.2.16	Response Plan Auto Merge Setting	When activating a response plan and viewing the currently active message of a DMS sign, the user shall view the result based on the auto-merge setting of the DMS.

2.3.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- Different situations will be introduced to show cases in which travel time templates are merged.

2.3.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- SAA
- TSS
- TVT
- EM
- DMS
- MAS

Devices Required

The following devices will be used during the test:

- Multiple simulated TSS links to provide travel time data for multiple TVT links
- At least one DMS sign (real or simulated)

Configuration Required

The following will be setup/configured before the test is performed:

- At least two TVT links will be defined and configured to provide travel times.
- The TSS Driver Simulator will be configured to run and provide data for all TSS links that comprise the TVT links.
- The DMS Simulator will be configured to run for each DMS sign.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT18.3. FEAT18.3.13.1	Log into Operator Map. In the Configuration > DMS > Signs dialog, create a new DMS and verify that the Auto Merge checkbox is blank. Now check the Auto Merge box and fill in any other necessary fields and save the DMS. Close the dialog, log out of Operator Map, and restart the DMS subsystem.	The software defaults all signs to not auto-merge messages. The user can configure the Auto Merge flag of a DMS.	☐	☐

		Log into Operator Map again and open the dialog. Verify that the new DMS exists and the Auto Merge box is checked.			
2	FEAT18.2.15 FEAT18.2.15.1 FEAT18.2.15.1.1 FEAT18.2.16.1 FEAT18.2.16	Find the DMS sign from Step 1 or any other DMS sign whose Auto Merge box is checked. Open the Event Management > Event List dialog. Choose an existing event or create a new event. Open the response plan for that event. Using the Add Item button, add the DMS sign to the response plan. Select the DMS sign and click Edit Item. Verify that the Auto-Merge Enabled box is checked. Ensure that the response plan message is a single phase. Activate the response plan. Close the Response Plan dialog. Open the DMS > Device Status dialog and verify that the event message appears on the message queue for the sign. Create a single-phase TVT device template for that DMS sign and configure the necessary TVT link(s) to provide travel time messages. Monitor the queue and verify that the travel time message appears and gets merged with the event message at the top of the queue. Now modify the TVT device template created above to create a two-phase message. Make sure the first phase is different from the message created above. Continue monitoring the queue and verify that the top message on the queue changes to the event message merged with the first phase of the new travel time message. Open the response plan and verify that the response plan message shown in the dialog is the merged message. Terminate the response plan. Verify that the event message is removed from the	The response plan's Auto-Merge Enabled box is checked because the DMS sign's Auto Merge box is checked. If a single-phase travel time message and a single-phase response plan message are at the top of the queue, and if auto-merge is enabled for the response plan, the messages are automatically merged. If a two-phase travel time message and a single-phase response plan message are at the top of the queue, and if auto-merge is enabled for the response plan, the response plan message is automatically merged with the first phase of the travel time message. The second phase of the travel time message is discarded. If a response plan message and a travel time message are at the top of the queue, but the Auto-Merge Enabled flag is not set for the response plan, the messages are not	☐	☐

		queue. Verify that the two-phase travel time message is shown. Edit the DMS sign item in the response plan and uncheck the Auto-Merge Enabled box. Save and activate the plan. Verify that the event message appears at the top of the queue, and is not merged with a travel time message. Finally, terminate the response plan, edit to re-check the Auto-Merge Enabled box, and activate the plan. Verify that the merged message reappears on the queue. Then terminate the response plan, edit the event message to be 2-phase, and reactivate the response plan. Verify that the 2-phase event message appears at the top of the queue and is no longer merged with the travel time message.	automatically merged. If a 2-phase response plan message and a travel time message are at the top of the queue, the messages are not merged.		

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.4 IC-3: Disabling Response Plan Items

2.4.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements to the Event Management Subsystem to allow configuration of which types of response plan items may be suggested.

2.4.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 3: Event Management Subsystem Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
EM052	FEAT26.5.11	Suggestion Configuration	The SunGuide configuration file shall specify each possible response plan item (Email, DMS, HAR, TAM, Beacon) and allow a user to configure them so that they are not suggested in the response plan.

2.4.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- Response plans will be tested against various response plan item configuration scenarios.

2.4.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- SAA
- EM
- DMS
- HAR
- BMS
- RWIS
- Connected Vehicle

Devices Required

The following devices will be used during the test:

- At least one DMS
- At least one HAR
- At least one beacon
- At least one RSE
- One RWIS station

Configuration Required

The following will be setup/configured before the test is performed:

- An event will be created and configured within the proximity of at least one DMS, HAR, and RSE. The notifying contact of the event will be the full id of an RWIS station or the name of an RWIS station. At least one beacon will be created and configured within the proximity of the RWIS. Ensure the event type is Visibility and the RWIS has a threshold set up for Visibility alerts.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT26.5.11	Set all five nodes within the <suggestedResponsePlanConfiguration> node in the node of the SunGuide configuration file to “false”. Start or restart the EM subsystem. In the Operator Map, open the event details for the event configured as described above and click Suggest Response Plan. Verify that no Email, DMS, HAR, TAM, or Beacon items are suggested. Change the <email> node to “true”, restart EM, and get the suggested response plan for the event. Verify that at least one Email item appears. Set the <dms> node to “true”, restart EM, and verify that both Email and DMS items now appear in the suggested response plan. Set the <har> node to “true”, restart EM, and verify that Email, DMS, and HAR items now appear in the suggested response plan. Set the <tam> node to “true”, restart EM, and verify that Email, DMS, HAR, and TAM items now appear in the suggested response plan. Finally, set the <beacon> node to	The <email>, <dms>, <har>, <tam>, and <beacon> boolean parameters in the node of the SunGuide configuration file control which types of response plan items are suggested in a response plan.	☐	☐

		"true", restart EM, and verify that Email, DMS, HAR, TAM, and Beacon items now appear in the suggested response plan.			

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.5 IC-4: Travel Time Message Expiration

2.5.1 Objectives

The objective of this integration case is to test the requirements associated with a SunGuide enhancement to the Travel Time Subsystem that adds a configuration parameter specifying the expiration interval of a travel time message.

2.5.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 4: Travel Time Subsystem Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
TMT041	FEAT18.2.14	Travel Time Timeout	The SunGuide configuration file shall contain a parameter specifying the interval (in minutes) at which travel times should expire when sent to a DMS.
TMT045	FEAT18.3.12	Travel Time Message Timeout	When sending a travel time to a DMS, the expiration time of the message shall be the travel time message expiration interval configured in the SunGuide configuration file.

2.5.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- Travel Time message will be sent and the message expiration will be noted.

2.5.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- SAA
- TVT
- TSS
- DMS
- MAS

Devices Required

The following devices will be used during the test:

- Multiple simulated TSS links to provide travel time data for one or more TVT links

Configuration Required

The following will be setup/configured before the test is performed:

- At least one DMS will be configured to receive travel time messages. Update TvT generation frequency to 90 seconds.
- The TSS Driver Simulator will be configured to run and provide data for all TSS links that comprise the TVT link(s).

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT18.2.14 FEAT18.3.12	In the SunGuide configuration file, find the <messageExpirationInterval> node in the <tvt> node and set its value to “1”. Restart the TVT subsystem. Log into Operator Map and view the DMS > Device Status dialog. Blank the message queue for the DMS configured to receive travel times. Watch for an incoming travel time message, and note the expiration time as soon as a message is received. Verify that it is one minute in the future. Stop the TVT subsystem and monitor the message queue. Verify that the message expires at the appointed time and is removed from the queue. Set the <messageExpirationInterval> node value to “2” change the TvT generation frequency to 180 seconds, restart the TVT subsystem, and repeat. Verify that the message expires after 2 minutes.	The SunGuide configuration file contains a parameter which defines the interval, in minutes, at which travel time messages expire when sent to a DMS.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.6 IC-5: Travel Time Multiple Device Templates

2.6.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements to the Travel Time Subsystem. These enhancements modified the TVT subsystem to allow the association of multiple device templates

2.6.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 5: Travel Time Subsystem Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
TMT044	FEAT18.2.17	Travel Time Template List	When configuring the travel time message for a DMS sign, the user shall be able to set up an ordered list of travel time templates and their associated destinations.
TMT047	FEAT18.3.14	Selecting Travel Time Template for a DMS	When evaluating what message to send to a DMS, the Travel Times subsystem shall select the message template that is on top of the ordered list with a travel time that has been successfully computed
TMT047A	FEAT18.3.14.1	Static Text	If static text is entered as a message template, the software shall evaluate that message as successfully generated
TMT047B	FEAT18.3.14.2	No Successful Template Generation	If none of the travel time messages on the ordered list are successfully generated, the software shall send the default travel time message specified in the SunGuide configuration file

2.6.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- TVT device templates will be configured and different scenarios where the travel times may or may not be able to be calculated will be tested.

2.6.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- SAA
- TVT
- TSS
- DMS

- MAS

Devices Required

The following devices will be used during the test:

- Multiple simulated TSS links to provide travel time data for multiple TVT links
- At least one DMS sign (real or simulated)

Configuration Required

The following will be setup/configured before the test is performed:

- At least four TVT links will be defined and configured to provide travel times.
- The TSS Driver Simulator will be configured to run and provide data for all TSS links that comprise the TVT links.
- The DMS Simulator will be configured to run for each defined DMS sign.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT18.2.17 FEAT18.3.14 FEAT18.3.14.2	Log into the Operator Map as a user with permission to configure TVT. Open the Configuration > Travel Times > Device Templates dialog. Create a new device template for a particular DMS with priority 1. Select an appropriate message template and choose an appropriate destination link (or links). Create another device template for the same DMS with priority 2. This template may use the same message template or a different message template, but must use a different destination link (or links). Open the DMS > Device Status dialog to observe the message queue for the DMS. Open the Travel Times dialog and verify that all thel links used by the first and second device templates are enabled. The travel time message generated by the first template should be displayed on the DMS. Now disable the travel time link(s) used by the first template. Within a few	A user with TVT configuration permissions can create multiple device templates for the same DMS, each with a unique priority. An error occurs if the user tries to create a device template with a duplicate priority. An error occurs if the user neglects to choose a Destination Name or Travel Time Link when creating a device template. The TVT subsystem evaluates device templates in priority order. The first template which successfully generates a message determines which message is displayed on	☐	☐

		minutes, the travel time message generated by the second template should be displayed on the DMS. Disable the travel time link(s) used by the second template. Within a few minutes, the sign should either go blank or the default message should appear, as defined in the configuration file. Finally, enable the link(s) used by the first template. Within a few minutes, the travel time message generated by the first template should be displayed on the DMS.	the DMS. If no device templates are successful, the sign will either be blank or have a default message as determined by the configuration file parameters blankIfNotGenerated and msgIfNotGenerated.		
2	FEAT18.3.14 FEAT18.3.14.1	As in Step 1, create a device template with priority 1 and choose an appropriate message template and destination link(s). Create a device template with priority 2 for the same DMS with a message template that is too big for the sign. Finally, create a device template with priority 3 for the same DMS with a static-text message template that fits on the sign. Open the DMS > Device Status dialog to observe the message queue for the DMS. Open the Travel Times dialog and verify that all the links used by the first device template are enabled. The travel time message generated by the first template should be displayed on the DMS. Now disable the travel time links used by the first template. Within a few minutes, the static message generated by the third template should be displayed on the DMS.	Multiple “default” messages can be defined for a sign by defining separate device templates in the order they should be attempted. The first successful message will be used.	☐	☐

Test End Date & Time	
FDOT Witness	

SwRI Witness	

2.7 IC-6: Unconfirmed Lane Blockages

2.7.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements to the Event Management Subsystem to allow configuration of which types of response plan items may be suggested.

2.7.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 6: Event Management Subsystem Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
EM053A	FEAT26.11.1	Mixed Lane Blockages	The software shall prevent users from saving a lane blockage configuration that consists of both confirmed and unconfirmed lane blockages.
EM053B	FEAT26.11.2	System Setting	The software shall have a system setting that will allow reporting of unconfirmed lane blockages.
EM053C	FEAT26.11.3	System Setting Override	The software shall have a system setting that will allow users to override the unconfirmed lane blockage setting for an event.
EM053D	FEAT26.11.4	"Reported" Prefix	When the software is configured to allow unconfirmed lane blockages, the lane blockage description, SAE description, email, and 511 item shall all prefix the description with “Reported”.

2.7.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- Lane blockage for an event will be modified in various ways to check the lane blockage description and output to 511.

2.7.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- SAA
- EM
- C2C

Devices Required

The following devices will be used during the test:

- N/A

Configuration Required

The following will be setup/configured before the test is performed:

- Ensure the C2C Control Client is configured to receive event commands
- Verify the <allowUnconfirmedLaneBlockages> parameter is set to “true”.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT26.11.1	Verify the <allowUnconfirmedLaneBlockages> parameter is set to TRUE and the System Setting allowing overrides is FALSE. Create a new event. Open the event details and ensure the lane map has at least two travel lanes. Add one confirmed lane blockage and no unconfirmed blockages. Verify that the event can be saved. Do not modify the confirmed lane blockage. Set a different lane to unconfirmed blockage, and verify a validation error occurs. Remove the unconfirmed blockage and verify that the event can be saved.	Attempting to create a confirmed blockage and an unconfirmed blockage simultaneously is not allowed.	☐	☐
2	FEAT26.11.2 FEAT26.11.3 FEAT26.11.4	Verify the <allowUnconfirmedLaneBlockages> parameter is set to TRUE and the System Setting allowing overrides is FALSE. Create a new event. Open the Event Details dialog and verify that the “Allow Unconfirmed Lane Blockage” checkbox is checked. Attempt to override the setting and verify the user is unable to override. Create an unconfirmed lane blockage, verify that no error occurs, and save the event. Note the Lane Blockage Description and SAE code description.	When the <allowUnconfirmedLaneBlockages> parameter is true, and the user is unable to override the setting, user may put in unconfirmed blockage and the prefix is included with the Lane Blockage Description, SAE Code Description, and response plan email item. When the	☐	☐

		Verify the <allowUnconfirmedLaneBlockages> parameter is set to TRUE and the System Setting allowing overrides is TRUE. Create a new event. Open the Event Details dialog and verify that the “Allow Unconfirmed Lane Blockage” checkbox is checked. Attempt to override the setting and verify the user may override. With the box unchecked, attempt to create an Unconfirmed Lane Blockage and verify the attempt fails. Check the box to allow unconfirmed blockage. Set Unconfirmed blockage and save. Note the Lane Blockage Description and SAE code description.	<allowUnconfirmedLaneBlockages> parameter is true, and the user is able to override the setting, user may choose to put in unconfirmed blockages and, if they do, the prefix is included with the Lane Blockage Description, SAE Code Description, and response plan email item.		
3	FEAT26.11.2 FEAT26.11.3 FEAT26.11.4	Verify the <allowUnconfirmedLaneBlockages> parameter is set to FALSE and the System Setting allowing overrides is FALSE. Create a new event. Open the Event Details dialog and verify that the “Allow Unconfirmed Lane Blockage” checkbox is unchecked. Attempt to override the setting and verify the user is unable to override. Attempt to create an unconfirmed lane blockage, verify the user is unable to do so. Verify the <allowUnconfirmedLaneBlockages> parameter is set to FALSE and the System Setting allowing overrides is TRUE. Create a new event. Open the Event Details dialog and verify that the “Allow Unconfirmed Lane Blockage” checkbox is unchecked. Attempt to override the setting and verify the user may override. With the box checked, create an Unconfirmed Lane Blockage and save. Note the Lane Blockage Description and SAE code description. Uncheck the box for unconfirmed blockage. Attempt to set	When the <allowUnconfirmedLaneBlockages> parameter is false, and the user is unable to override the setting, user may NOT put in unconfirmed blockage. When the <allowUnconfirmedLaneBlockages> parameter is false, and the user is able to override the setting, user may choose to put in unconfirmed blockages and, if they do, the prefix is included with the Lane Blockage Description, SAE Code Description, and response plan email item.	☐	☐

		Unconfirmed blockage and verify an error occurs.			
4	FEAT26.11.4	Verify the <allowUnconfirmedLaneBlockages> parameter is set to TRUE and the System Setting allowing overrides is TRUE. Verify the C2C Command Client is running and able to receive publish commands. Create a new event and open the Event Details dialog for the new event. Create an unconfirmed lane blockage. Click Suggest Response Plan. View the email item and note the text include the “Reported” prefix. Activate a response plan that includes a 511 item. In the Command Clint, view the XML sent in the publish request. Verify that the <unconfirmedBlockages> element is set to “true”. Verify that the <affectedLanes> element’s attributes for each blocked lane are all set to “true”. Verify that the inner text for the <affectedLanes> element is the same prefixed lane blockage description. In the Event Details dialog, change the unconfirmed lane blockages for the event to confirmed blockages and save. Click Suggest Response Plan. View the email item and note the text include the “Reported” prefix. Activate a response plan that includes a 511 item. In the Command Clint, view the XML sent in the publish request. Verify that the <unconfirmedBlockages> element is set to “true”. Verify that the <affectedLanes> element’s attributes for each blocked lane are all set to “true”. Verify that the inner text for the <affectedLanes> element is the same prefixed lane blockage description.	The prefixed lane blockage description is used in the suggested email response plan item and the published C2C event contains information so that end user can interpret as unconfirmed blockage.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.8 IC-7: Truck Parking Subsystem

2.8.1 Objectives

The objective of this integration case is to test the requirements associated with the Truck Parking Subsystem.

2.8.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 7: Truck Parking Subsystem Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
TPS00A	FEAT72	Truck Parking Subsystem	SunGuide software shall allow users to configure truck parking facilities into the system
TPS001	FEAT72.1	Truck Parking Fields	SunGuide software shall allow users to configure the following information for the truck parking facilities: name, location, roadway, one or more roadway directions, total number of parking spaces, minimum number of parking spaces before reporting the facility is full, associated DMSs, associated cameras, associated presence or passage detection, low availability alarm threshold, and low availability recovery threshold
TPS001A	FEAT72.1.1	Entrance Volume	SunGuide software shall allow the user to associate entrance volume detection links to a facility.
TPS001B	FEAT72.1.2	Exit Volume	SunGuide software shall allow the user to associate exit volume detection links to a facility
TPS001C	FEAT72.1.3	Associate TSS Links	SunGuide software shall allow the user to associate TSS links with occupancy detection to a facility
TPS001D	FEAT72.1.4	Associate DMS	SunGuide software shall allow the user to associate DMSs with a sign use of the truck parking subsystem to a maximum of one truck parking subsystem facility
TPS001E	FEAT72.1.5	Associate Cameras	SunGuide software shall allow the user to associate cameras to a truck parking subsystem facility
TPS002	FEAT72.2	Get Truck Parking Information	SunGuide software shall obtain truck parking availability information from associated truck parking facilities at a configurable interval.

TPS002A	FEAT72.2.1	Presence Detection	SunGuide software shall use presence detection, if available, to calculate current parking availability
TPS002B	FEAT72.2.2	Calculate Parking Availability	SunGuide software shall use entrance and exit volume detection to calculate current parking availability if available and presence is not available
TPS002C	FEAT72.2.3	Operator Corrections	SunGuide software shall use the operator-corrected number of parking spaces available as an offset to adjust the current number of parking spaces available for a facility
TPS002C1	FEAT72.2.3.1	Using Corrections	The operator-corrected number of parking spaces will be used until modified by subsequent operator-corrected number of parking spaces is set
TPS002C2	FEAT72.2.3.2	Log Operator Corrections	The operator-corrected number of parking spaces will be stored in persistent storage
TPS003	FEAT72.3	Operational Status	SunGuide software shall maintain the operational status of truck parking facilities
TPS003A	FEAT72.3.1	Facility Error State	The truck parking facility shall move to an error state if the parking availability cannot be generated
TPS004	FEAT72.4	Persistent Storage	SunGuide software shall store truck parking availability information for truck parking facilities in persistent storage when the truck parking facility is in an active operational status
TPS004A	FEAT72.4.1	Data Fields	SunGuide software shall store the following information when the number of available parking spaces is corrected by an operator: Operator's User ID, date and time of the change, the old parking availability value, the new corrected parking availability value, and the ID of an alert for that facility if one is active while the change was made.
TPS005	FEAT72.5	Post Available Spots	SunGuide software shall post the number of currently available parking spaces on the associated dynamic message signs when the truck parking facility is in an active operational status
TPS005A	FEAT72.5.1	Blank DMS When Facility Error	SunGuide software shall blank the associated dynamic message signs when the truck parking facility is not in an active operational state
TPS005B	FEAT72.5.2	Blank DMS for Data Loss	SunGuide software shall blank the associated DMSs when parking availability

			information is not available for a truck parking facility
TPS005C	FEAT72.5.3	Minimum Availability Threshold	SunGuide software shall post zero for the currently available parking spaces on the DMSs when the currently available parking spaces at truck parking facilities is less than the configured minimum number of parking spaces
TPS006	FEAT72.6	C2C Data Availability	SunGuide software shall publish truck parking availability information through center-to-center when the truck parking facility is in an active operational status
TPS006A	FEAT72.6.1	Publish TPS Data	SunGuide software shall publish truck parking facility configuration information through center-to-center publisher
TPS006A1	FEAT72.6.1.1	Data Fields	Truck parking facility configuration information shall include name, location, roadway, one or more roadway directions, total number of parking spaces, associated dynamic message signs, and associated cameras
TPS006B	FEAT72.6.2	Publish Operational Status	SunGuide software shall publish the operational status of each facility through center-to-center publisher
TPS006C	FEAT72.6.3	Publish Available Spots	SunGuide software shall publish the current number of available truck parking spaces for each facility through center-to-center publisher
TPS006D	FEAT72.6.4	Publish Zero Spots Available	SunGuide software shall publish zero for the currently available parking spaces through center-to-center when the currently available parking spaces at the truck parking facility is less than the configured minimum number of parking spaces
TPS007	FEAT72.7	Low Availability Alarm	SunGuide software shall alert operators when truck parking facilities enter into a low availability alarm state
TPS007A	FEAT72.7.1	Low Availability Threshold	SunGuide software shall transition truck parking facilities to a low availability alarm state when the availability goes below the low availability alarm threshold
TPS007B	FEAT72.7.2	Low Availability Warning	SunGuide software shall transition truck parking facilities to a low availability warning state when the availability goes between the low availability alarm threshold and the low availability recovering threshold

TPS007C	FEAT72.7.3	Low Availability Recovery	SunGuide software shall transition truck parking facilities to a sufficient availability state when the availability goes above the low availability recovery threshold
TPS007D	FEAT72.7.4	Operator Alarm	SunGuide software shall present a truck parking low availability alert to the operator when the facility transitions from a sufficient availability state to a low availability alarm state
TPS007E	FEAT72.7.5	Dismiss Low Availability Alarm	SunGuide software shall automatically dismiss a truck parking low availability alert when the facility transitions from a low availability alarm state to a sufficient availability state
TPS007F	FEAT72.7.6	Display Facility Status	SunGuide software shall present the operator with a truck parking availability facility status dialog when the operator clicks on the low availability alert
TPS007G	FEAT72.7.7	Operator Dismiss Alert	SunGuide software shall dismiss a truck parking low availability alert when the operator invokes the dismiss alert button from the status dialog for that facility

2.8.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- TSS simulators will be used to produce various amounts of vehicles to show the output of the Truck Parking Subsystem. The archive will be checked to verify correct logging.

2.8.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- SAA
- TPS
- TSS
- DMS
- MAS
- CCTV
- EM
- DA
- C2C Publisher

Devices Required

The following devices will be used during the test:

- Multiple simulated TSS links

- Two links configured to provide volume data to simulate passage detectors
  - The volume will need to be changed between zero and one.
- Multiple links configured to provide binary occupancy data to simulate presence detectors
  - If any detector in a link is occupied, the entire link is occupied.

- Multiple DMS signs (real or simulated)

Configuration Required

The following will be setup/configured before the test is performed:

- The TSS Driver Simulator will be configured to run and provide data for each defined TSS link
- The DMS Simulator will be configured to run for each defined DMS sign.
- Set the <tpsUpdateFreqInSecs> to 10, and <dmsUpdateFreqInSecs> to 10

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1.	FEAT72 FEAT72.1 FEAT72.1.1 FEAT72.1.2 FEAT72.1.3 FEAT72.1.5	Log into the Operator Map as a user with no TPS configuration permissions. Attempt to access the TPS configuration dialog. Modify the user to grant TPS configuration permissions, or log in with a different user that has TPS configuration permissions. Access the TPS configuration dialog. Add a new facility, noting that the roadway, directions, latitude, longitude, total # spaces, report full at # free spaces, free spaces alarm threshold, and free spaces recovery threshold fields require input. All other fields have default values. Save the facility. Access the TPS configuration dialog and modify the existing facility created earlier, changing multiple configuration parameters. Save the modification.	A user without TPS configuration permissions cannot access TPS configuration. A user with TPS configuration permissions can add, modify, and delete truck parking facilities. The configuration parameters for truck parking facilities include the required list, as well as a "Detection Method". A user can successfully add and modify a truck parking facility. The roadway, latitude, and longitude are the only fields without default values. Attempting to add a facility with a duplicate name fails. A facility can have zero or more associated cameras. A facility can be modified with any configuration of associated TSS	☐	☐

<table>
<tr><td></td><td></td><td>Try modifying the facility to have 0, 1, or 2 associated cameras. Modify the facility to use “Passage” detection with no associated incoming or outgoing links. Try modifying the facility to use “Presence” detection with no associated presence links. Try modifying the facility to have any number of associated links with either method.

Delete the newly added facility. Save the deletion.</td><td>links, regardless of detection types.</td><td></td><td></td></tr>
<tr><td>2.</td><td>FEAT72.1.4</td><td>Access the TPS configuration dialog and add two truck parking facilities with default configuration parameters, providing only the name, roadway, directions, location, total # spaces, report full at # free spaces, free spaces alarm threshold, and free spaces recovery threshold. Associate the same DMS sign to each facility. Attempt to save the add.</td><td>The second DMS adding will fail as it can’t be assigned to more than one facility.</td><td>☐</td><td>☐</td></tr>
<tr><td>3.</td><td>FEAT72.2
FEAT72.2.2
FEAT72.5
FEAT72.5.3
FEAT72.7
FEAT72.7.1
FEAT72.7.2
FEAT72.7.3
FEAT72.7.4
FEAT72.7.5
FEAT72.7.6</td><td>Using the TSS Simulator, configure two TSS Links (LINK1 and LINK2) to provide volume data. Ensure both TSS Links have only one lan. Using the DMS simulator, configure at least one DMS. Set the op status each device to “Active”. Set the TSS link volume to zero for both links.

Access the TPS configuration dialog and add a new truck parking facility. with the following configuration parameters:
<table>
<tr><td>Total spaces</td><td>25</td></tr>
<tr><td>Report Full at # Free Spaces</td><td>5</td></tr>
<tr><td>Free Spaces alarm threshold</td><td>10</td></tr>
</table></td><td>Truck parking availability information is calculated at a configurable interval based on the data received from the TSS passage detection links.

The reported availability is never above the total number of parking spaces, and is either zero or greater than the minimum number of available parking spaces considered full parameter.

A low availability alert is presented if the availability drops below the low availability alarm threshold. The alert is automatically acknowledged if the availability rises above the low availability recovery threshold.</td><td>☐</td><td>☐</td></tr>
</table>

		Free Spaces recovery threshold: 15 Set the Detection Method to Passage. Add LINK1 to the list of Incoming Links. Add LINK2 to the list of Outgoing Links. Add each DMS to the list associated DMS list. Save the facility. Access the TPS status dialog, set the facility's op status to "Active", and set the availability to 20. Set the incoming link (LINK1) volume to one. Observe the DMS changing the available spots as they decrease. Observe the parking availability decrease in the dialog until it drops below 15. Verify that a warning is displayed. Observe the parking availability decrease in the dialog until it drops below 10. Open System Alerts dialog, and verify that a low availability alert is displayed. Verify that when right clicking on the alert, the user has the option to "Show Facility Status select "Show Facility Status". Observe the availability decrease until it is 5 or less but greater than zero, and verify that the status dialog shows the availability is zero. Each DMS should also show zero spots available. Set the outgoing link (LINK2) volume to one and set the incoming link (LINK1) volume to zero. Observe the availability increase until it goes above 15. Observe the DMS signs changing their message as the availability increases. Verify that the low availability alert is automatically dismissed. Continue observing the availability increase until it	All associated DMS signs are periodically updated with the parking availability value.		

		reaches 25. Verify that the availability never goes above 25.			
4.	FEAAT72.5.1 FEAT72.7.7 FEAT72.3	Set the outgoing link (LINK2) volume to zero and set the incoming link (LINK1) volume to one. Observe the availability decrease until a low availability alert is triggered. Acknowledge the alert. Note that the low availability alert acknowledgement was recorded in the database table FDOT_OWN.TPS_FACILITY_ALERT with the username. Note that the earlier acknowledgement was recorded with the username "TPS" and reason "Facility reached the low availability recovery threshold. Set the op status of the facility to "OutOfService" and verify that the availability reported in the status dialog changes to -1.	Alert acknowledgements, both user and automatic, are recorded in the database. All associated DMS signs are periodically updated with the parking availability value. The parking availability reverts to -1 when a facility goes out of an active operational state.	☐	☐
5.	FEAT72.2.3 FEAT72.2.3.1 FEAT72.2.3.2	Using TPS facility with ingoing and outgoing links configured, set up an active truck parking facility with availability changing at a constant rate. Access the TPS status dialog and correct the parking availability, making note of the current availability. Verify that the availability shifts to the corrected value and continues changing at the same constant rate. After a while, correct the availability again. Verify that the availability again shits and continues changing at the same rate. Verify that the operation	Operators can correct the parking availability for a truck parking facility. Operator corrections persist until overwritten by another correction. Operator corrections are logged in the database.	☐	☐

		corrections were recorded in the database table FDOT_OWN.TPS_FACILITY_CORRECTION.			
6.	FEAT72.3.1 FEAT72.5.2	Using TPS facility with ingoing and outgoing links configured, set up a truck parking facility with two active TSS links and one active associated DMS. Set the op status of the facility to active, with any number of available parking spaces. Using the Operator Map, access the TSS status dialog and change the op status of one of the associated links to "OutOfService". Verify that after a short time the op status of the facility changes to "Failed". Check the DMS and verify the DMS message is blank. Go back to the TSS status dialog and change the same link's status to "Active". Verify that facility's op status changes to "Active". Check the DMS and verify the DMS displays parking availability once it is recalculated.	A truck parking facility's operational status changes to "Failed" if any of its associated TSS links or DMS signs is "Failed" or "OutOfService". A truck parking facility's operational status changes to back to "Active" if the facility is "Failed" and all associated links and signs become "Active". The TPS log indicates when a facility's op status changes due to one or more device status being "Error" or "Failed". A device having op status "OutOfService" is treated as "Failed".	☐	☐
7.	FEAT72.6 FEAT72.6.1 FEAT72.6.1.1 FEAT72.6.2 FEAT72.6.3 FEAT72.6.4	Ensure that the c2cStatus user has permissions to receive TPS configuration and status data. Configure a TPS facility that is able to calculate parking availability and is currently in an Active state. View the truckParkingFacilityData information published by the C2C Publisher and verify that it changes accordingly. Take the facility to a Failed state and view	C2C publishes data for TPS truck parking facilities.	☐	☐

		the data in C2C. Take the facility to an Out of Service state and view the data in C2C. Take the facility back to an Active state. Take the number of available spot below the configured minimum number of spots. View the available spot in the C2C feed. Using the TPS Configuration dialog, add a new facility and verify it is published. The information should include name, location, roadway, one or more roadway directions, total number of parking spaces, associated dynamic message signs, and associated cameras. Then modify that facility and verify the change is published. Then delete the facility and verify it removed from the published data.			
8.	FEAT72.4 FEAT72.4.1	View the six database tables for TPS created by Data Archive: FDOT_ODS.ODS_TPS_*. Ignore any existing data captured during the earlier tests. Using the TPS Configuration Dialog, add a new facility. Make sure there is exactly one DMS, one Camera and one Link associated with the facility. Save the added facility. View the Data Archive ODS_TPS_PARKING_FACILITY table and note that the new facility is the last entry in the table. The ID field identifies each addition or modification to the archive. View the DMS, CAMERA, and LINK tables. The last entry (or entries) in each table should	The Data Archive subsystem stores a historical record of TPS truck parking facility information. Every addition adds a truck parking facility entry with a particular ID (representing the data archive identifier) and a particular SUNGUIDE_ID (representing the facility identifier). Entries with the same ID are added to the DIRECTION, DMS, CAMERA, and LINK tables to record those items associated with the facility. Each modification to a facility adds a truck parking entry to the database with a new ID. Entries with the new ID are added to the DIRECTION, DMS, CAMERA, and LINK tables to record those items	☐	☐

		have the same ID, as they are part of the same addition (or modification) to the data archive. Now, using the TPS configuration dialog, modify one or more fields of the facility and save the modification. View the Data Archive tables again, and note that there are new entries in each table for the facility, with a new (higher) ID, but the same SUNGUIDE_ID. Make note of this new ID. Verify that the differences between the entries match the modifications you made. Now, configure the TSS links with the incoming link volume set to one and the outgoing link volume set to zero, in order to see decreasing parking availability. Set the op status of the facility to “active”. Observe the ODS_TPS_FACILITY_STATUS database table. Continue observing the table until the “AVAILABLE_SPACES” field becomes zero while the “CALCULATED_AVAILABLE_SPACES” field is nonzero. The “calculated” field represents the raw calculated value. The “available” field represents the field displayed to users and DMS signs. Modify the facility again and verify that status entries are added with a new ID. Look in the ODS_TPS_PARKING_FACILITY table and verify that this ID corresponds to the same SUNGUIDE_ID as the previous ID. Finally, set the op status of the facility to “OutOfService”. Verify	associated with the facility after the modification. The historical record for a facility can be traced by tracking the increasing IDs for the facility’s SUNGUIDE_ID in the ODS_TPS_PARKING_FACILITY table. The records for each ID across all tables indicates the state of the facility. The ID field in the status table indicates the facility whose status is reported as well as the state of the facility at that time. If a facility is deleted, nothing is changed in the Data Archive tables.		

<table>
<tr><td></td><td></td><td>that a final status entry is added with OP_STATUS “OutOfService”. Wait a few minutes to verify that no further status is reported for that facility. Then, using the TPS Configuration Dialog, delete the facility. Verify that no records for that facility are deleted from the ODS tables, and no record is added that indicates the facility was deleted.</td><td></td><td></td><td></td></tr>
<tr><td>9.</td><td>FEAT72.2.1</td><td>Using the TSS simulator, configure five TSS links to provide binary occupancy data to simulate presence detection. Initialize the occupancy to zero, the volume to 1, and set each link to active. THESE LINKS MAY ONLY HAVE 1 LANE PER LINK!!

Access the TPS configuration dialog and create a new truck parking facility with “Presence” detection method and the following configuration parameters:
<table>
<tr><td>Total number of parking spaces</td><td>5</td></tr>
<tr><td>Min. number of available parking spaces before the facility is reported full</td><td>1</td></tr>
<tr><td>Low availability alarm threshold</td><td>2</td></tr>
<tr><td>Low availability recovery threshold</td><td>4</td></tr>
</table>
Add the TSS links to the associated Links list. Set the occupancy for 2 of the links to 100. Set the facility’s op status to “Active”. Verify that the initial availability (reported and calculated) is initially -1 and soon changes to 3.

Set the occupancy of another</td><td>Truck parking availability information is calculated at a configurable interval based on the data received from the TSS presence detection links.

If a link has multiple detectors, occupancy on any detector will cause the entire link to be occupied.</td><td>☐</td><td>☐</td></tr>
</table>

		link to 1 (3 occupied) and verify that the availability (reported and calculated) changes to 2, and a low availability alarm occurs. Set the occupancy of a 4th link to 1 and verify that the reported availability changes to 0 while the calculated availability changes to 1. Set the occupancy of the 5th and final link to 1, and verify that the reported availability remains 0 and the calculated availability changes to 0. Set the occupancy of 4 of the links to 0. Verify that the availability (reported and calculated) changes to 4 and the low availability alert is acknowledged.			

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.9 IC-8: System Message Filtering

2.9.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements for filtering system messages based of the category of message.

2.9.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 8: System Messages Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
GUI003	FEAT7.3.15	Filter System Messages	The software shall allow users to filter the System Messages by category type of message being reported
GUI004	FEAT7.3.16	User Preference for System Messages	The software shall save a user preference for the types of system message a user wishes to view and load that filter each time the System Message dialog is opened
GUI004A	FEAT7.3.16.1	Update User Preference	When a user updates the System Messages filter, the user preference will be updated to reflect the new filter

2.9.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- Various instances where System Messages would be seen will be simulated and the messages delivered will be filtered through the use of the System Messages dialog.

2.9.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- All

Devices Required

The following devices will be used during the test:

- No live or simulated devices

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT7.3.15 FEAT7.3.16 FEAT7.3.16.1	Open the System Messages dialog and note the current set of messages. Note the category field. Modify the current filtering. Close and reopen the dialog. Log out and login to the Operator Map. Open the system messages dialog and view the current filters. Update the filter to something different. Close and reopen the dialog. Log out and login to the Operator Map. Open the system messages dialog and view the current filters.	Users can modify their filter criteria and the filter persists through dialog restarts and Operator Map restarts.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.10 IC-9: Managed Lanes Subsystem

2.10.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements for using the Managed Lanes Subsystem.

2.10.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 9: Managed Lanes Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
MLS001	FEAT69.1	Gate Controller Status	A gate controller shall have an operational status
MLS001A	FEAT69.1.1	Changing Controller Status	MLS shall allow a user to set a gate controller's operational status to Active or Out of Service
MLS001B	FEAT69.1.2	Controller Status Updates	MLS shall provide updates to the operational status of a controller when device communication errors occur
MLS002	FEAT69.2	Gate Status	MLS shall poll controllers for gate status
MLS002A	FEAT69.2.1	Gate Status Changes	MLS shall send updates to users when a gate's state changes
MLS002B	FEAT69.2.2	Gate Status States	MLS gate states shall include: -Closing -Opening -Closed -Opened -Failed -Reset -Unknown
MLS002C	FEAT69.2.3	Gate Failure	MLS shall report an error string if the gate state is failed
MLS002D	FEAT69.2.4	Controller Timestamps	MLS shall report timestamps for a controller for the last successful poll, the last communication attempt, and the last successful control operation
MLS002E	FEAT69.2.5	Error Messages reporting from the Device	MLS shall report the following controller errors if the device supports: -Communication error -Power error -An attached gate error -Controller configuration error -Controller cabinet door open
MLS003	FEAT69.3	Controller Gates	A gate controller shall have one or more gates

MLS004	FEAT69.4	Action Lists Templates	MLS action list templates shall include action templates and a description
MLS005	FEAT69.5	Action Template Description	MLS action templates shall include a description and an optional camera id and optional preset for verification use
MLS006	FEAT69.6	Action Template Actions	MLS action templates shall include the following types of actions: -Prerequisite verification -Manual step and verification -Gate control -DMS control
MLS006A	FEAT69.6.1	Prerequisite Template	A prerequisite template shall allow verification steps prior to initiating an active action list: -Verify DMS messages displayed -Verify status of gates -Verify a manual activity (e.g., sweep of the lanes)
MLS006B	FEAT69.6.2	Create Action List from MLS Template	MLS shall allow a user to create an active action list from an MLS template
MLS007	FEAT69.7	Active List Owner	An active action list shall have an owner
MLS007A	FEAT69.7.1	Ownership Transfer	Ownership of an active action list shall be transferred by a user reassigning the list
MLS007B	FEAT69.7.2	User Logout	If a user logs out while the owner of an active list, the list will be reassigned to an available operator as soon as one is available
MLS008	FEAT69.8	Action List Steps	An active action list shall require the user to proceed through the actions in order
MLS008A	FEAT69.8.1	Verify or Override Actions	MLS shall require a user to either verify or override each action before proceeding to the next action
MLS008B	FEAT69.8.2	User Verification Text	If a user verifies an action, MLS shall require verification text from the user
MLS008C	FEAT69.8.3	User Override Reason	If a user overrides an action, MLS shall require a reason for the override
MLS009	FEAT69.9	Action Response	When a user executes an action, MLS shall return the successful response or an error
MLS010	FEAT69.10	History of Action Execution	MLS shall provide the history of the execution of the action list during execution
MLS011	FEAT69.11	Aborting Action Lists	MLS shall allow an active action list to be aborted
MLS011A	FEAT69.11.1	Aborting Reason	MLS shall require the user to enter a reason for aborting an active action list
MLS012	FEAT69.12	Create and Execute Permission	MLS shall verify a user has permission to create and execute an action list.
MLS013	FEAT69.13	Modify Status Permission	MLS shall verify a user has permission to

			modify a controller's status
MLS014	FEAT69.14	Configuration Permission	MLS shall verify a user has permission to add, modify, or delete managed lane devices
MLS015	FEAT69.15	Log Execution Steps	MLS shall log execution steps for active action lists including the user who performed each action
MLS016	FEAT69.16	Log User Verifications	MLS shall log verifications for each action including the user who verified the action
MLS017	FEAT69.17	Log User Overrides	MLS shall log the reason for any overrides to actions in an active action list including the user who overrode the action

2.10.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- The user will configure the system to support a test system hosted by Versilis.
- The user will walk through gates opening and closing via defined procedures.
- The database will be checked to verify proper logging of events.

2.10.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- MLS and Driver
- Operator map
- DMS
- CCTV

Devices Required

The following devices will be used during the test:

- Multiple DMS signs set with sign use of Managed Lanes
- Multiple CCTV cameras
- Versilis Test System
- Controller and Gate simulator

Configuration Required

The following will be setup/configured before the test is performed:

- Access to the Versilis Test system
- Set-up a controller with a gate, ramp, segment, and managed road associated
- Controller and Gate simulator configured and operational.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT69.3	Using the Operator Map, configure a controller with one gate associated. Configure a second controller with three gates associated. Configure a ramp with one gate associated and a Direction of “North”. Configure a second ramp two gates associated and a Direction of “North”. Configure a third ramp with one gate associated and a Direction of “North”.	Controllers, gates, and ramps can be configured.	☐	☐
2	FEAT69.3	Configure a segment with one associated ramp and a Direction of “North/South”. Configure a second segment with two ramps associated and a direction of “North/South”. Configure a managed roadway with one segment. Add a second segment.	Segments and managed roads can be configured.		
3	FEAT69.1 FEAT69.1.1 FEAT69.1.2 FEAT69.2.4	Log into the SunGuide Operator Map and verify connectivity to the Controller and Gate Simulator using Status Logger. View the Gate Controller Status dialog and confirm the operational status. View the associated timestamps from the controller.	Gate Controller operational status changes with the active communication to the physical gate controller. Timestamps for last successful poll and last communication attempt are updated as expected.		

		Move the controller to the Out Of Service state. Wait several minutes and view the associated timestamps from the controller. Move the controller to the Active state. Verify the controller has valid communications with the test system. Terminate the connection to the simulator test system. Monitor the controller status and associated timestamps.			
4	FEAT69.2 FEAT69.2.1 FEAT69.2.2 FEAT69.2.3	Using simulator for a gate, iterate through each of the following state. To verify each state change, navigate to Managed Lanes > Ramp Status in the Operator Map. • Closing, • Opening • Closed • Opened • Reset • Unknown. Verify the state of the gate on the Operator Map including an error string.	Each state change should be reflected on the GUI.	☐	☐
5	FEAT69.2.5	Using the simulator for a controller, report the following controller errors: • Communication Error • Power Error • An attached gate error • Controller Configuration Error • Controller Cabinet Door Open Verify each of these in the Operator Map, controller status dialog.	When a controller reports an error, the operator can view that error in the status dialog.	☐	☐

6	FEAT69.5 FEAT69.6 FEAT69.6.1	Using the Operator Map, navigate to Configuration> Managed Lanes> Action Templates. Create a New Prerequisite Action Template that should verify the state of DMS and verify the status of a gate. Do not set a Camera Verification or Preset. Create a New Prerequisite Action Template that should have the Operator perform and manual sweep of the roadway. Set a camera and preset.	The user may create Prerequisite Action Templates with an optional camera and preset.	☐	☐
7	FEAT69.5 FEAT69.6	Using the Operator Map, create a New Manual Action Template that should have the Operator perform an arbitrary task. Set a camera and preset. Using the Operator Map, create a New Manual Action Template that should have the Operator perform an arbitrary task. Do not set a camera and preset.	The user may create Prerequisite Action Templates with an optional camera and preset.	☐	☐
8	FEAT69.5 FEAT69.6	Using the Operator Map, create a New MLS Action Template that should contain a simulated controller group opening. Set a camera and preset. Using the Operator Map, create a New MLS Action Template that should contain a simulated controller group closing. Do not set a camera and preset.	The user may create Gate Control Action Templates with an optional camera and preset.	☐	☐
9	FEAT69.5 FEAT69.6	Using the Operator Map, create a New DMS Action Template that should contain a message to be sent to a DMS. Set a camera and preset. Using the Operator Map, create a DMS Control Action Template that should contain a message to be sent to a DMS. Do not set a	The user may create DMS Control Action Templates with an optional camera and preset.	☐	☐

		camera and preset.			
10	FEAT69.4	Using the Operator Map, create an action list consisting of the 4 types of available Action Templates.	The user can create an Action List Template including a description.	☐	☐
11	FEAT69.2.4 FEAT69.6.2 FEAT69.7 FEAT69.7.1 FEAT69.7.2 FEAT69.8 FEAT69.8.1 FEAT69.8.2 FEAT69.8.3 FEAT69.9 FEAT69.10 FEAT69.15 FEAT69.16 FEAT69.17	Using the Operator Map, navigate to Managed Lanes> Action Lists. Start the execution of an Action List Template that contains at least the 4 action Templates. Identify the owner of the template. Log into SunGuide with a 2nd user. Assign the Action List to the 2nd user. Close the Operator Map of the 2nd user (current owner). Identify the owner of the action list. Perform the first action in the action list. Verify the action completed and give a verification description. Override the second action in the list and give a reason why the action was overridden. Perform a gate action. Note the completion of that action in the GUI. Compare the status in the Action List to the status of the gate. Verify the “last control” was updated in MLS Controller Status dialog. Complete the Action List. View the database tables to show a log of each of the actions performed during the execution of the Action List.	An action list is started. Users can re-assign the action list to other logged in users. When an owner of an action list logs out, the list is reassigned to another user. Actions must be performed in the order specified in the list. Actions must be verified or overridden before continuing to execute actions in the list. When a device action is required, the GUI shows the completion of the action by the device. Note the list of actions performed but the user as the action list progresses. All steps performed including the user who performed them are logged. Verification and Override reasons are logged in the database.	☐	☐
12	FEAT69.11	Using the Operator Map, start	Action Lists can be aborted	☐	☐

	FEAT69.11.1 FEAT69.15 FEAT69.16 FEAT69.17	the execution of an Action List Template. Perform the 1st action. Abort the Action List. Type a reason for aborting the Action List. View the database tables to show a log of each of the action performed during the execution of the Action List.	however the reason for aborting the Action List must be entered. All steps performed including the user who performed them are logged.		
13	FEAT69.12 FEAT69.13 FEAT69.14	Log into the Operator Map with a user that can retrieve MLS devices and information but has no control permissions. Attempt to create an Action Template. Attempt to create an Action List Template. Attempt to begin execution of an Action List. Attempt to configure a controller. Attempt to configure a gate. Attempt to configure a ramp. Attempt to configure a segment. Attempt to configure a managed roadway. Attempt to change a controller's status.	Users must have permissions to configure MLS devices or execute MLS actions.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.11 IC-10: Traffic Control Subsystem

2.11.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements for using the Traffic Control Subsystem.

2.11.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 10: Traffic Control Subsystem Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
TCS001	FEAT70.1	Trafficware Interface	The software shall have an interface to the Trafficware ATMS.now software based on the protocol defined by ATMS.now C2C Implementations Rev 1.1
TCS001A	FEAT70.1.1	Controller Fields	For each traffic signal controller, the software shall get the controller name, controller ID, latitude, longitude, currently activated timing plan, and operational status from the interface
TCS001B	FEAT70.1.2	Timing Plan Fields	For each timing plan, the software shall get the plan ID, plan description, controller ID, and controller name and traffic signal controllers the plan would affect, if activated
TCS001C	FEAT70.1.3	Poll Signal Interface	The software shall retrieve status for the traffic signal controllers on a periodic basis
TCS001C1	FEAT70.1.3.1	Poll Interval	The frequency to retrieve status for the traffic signal controllers shall be configurable in the SunGuide configuration file
TCS002	FEAT70.2	Configure Traffic Signal Routes	The software shall allow a user with permission to add, modify, or delete a traffic signal route
TCS002A	FEAT70.2.1	Signal Route Fields	A traffic signal route shall include a name, roadway, direction, affected roadway, affected direction, a default route timing plan, a low severity route timing plan, a medium severity route timing plan, and a high severity route timing plan
TCS002B	FEAT70.2.2	Available Timing Plans	Available timing plans will include the list of timing plans returned from the traffic signal interface
TCS003	FEAT70.3	Signal Icons	Each controller returned from the traffic signal interface be displayed as an icon

			placed on the Operator Map at the location specified by the traffic signal interface
TCS003A	FEAT70.3.1	Icon Background Color	The icon's background color shall be determined by the device status
TCS003B	FEAT70.3.2	Icon Visibility	Traffic Signal Controller icons shall be placed in a map layer whose visibility can be enabled and disabled
TCS003C	FEAT70.3.3	Controller Updates	When the status of a controller changes, the software shall update the map with the traffic signal controllers new status or configuration
TCS004	FEAT70.4	Activate Timing Plan Permission	The software shall allow a user with permission to activate a route timing plan
TCS004A	FEAT70.4.1	Plan Permission	The software will allow as user with permissions to select a configured route and activate one of the four configured timing plans associated with the route
TCS004B	FEAT70.4.2	Activation through Interface	When a signal timing plan is manually activated, the software shall send a request to the traffic signal central software interface to activate the route timing plan
TCS004B1	FEAT70.4.2.1	Timeout Value	The SunGuide configuration file shall have a value specifying the timeout for a signal plan activation
TCS004B2	FEAT70.4.2.2	Activate Default Plan	SunGuide shall set a route's timing plan back to the "default" timing plan after the timeout for a signal plan activation has been reached, unless the user reactivated the same timing plan or a new timing plan
TCS005	FEAT70.5	Route Timing Plans in Response Plan	The software shall allow a user with permission to manually add a route timing plan to a response plan
TCS005A	FEAT70.5.1	User Selected Plan	When manually adding the route timing plan to the response plan, the software shall allow the user to select any route timing plan
TCS005A1	FEAT70.5.1.1	Highlight Device Selection	When selecting a route timing plan, the software shall highlight the devices from the selected timing plan
TCS006	FEAT70.6	Response Plan Timing Plan Activation	When a response plan that includes a route timing plan is activated, the software shall send a request to the traffic signal central software interface to activate the route timing plan
TCS007	FEAT70.7	Response Plan Timing Plan Deactivation	When a response plan that includes a route timing plan is terminated, the software shall send a request to activate the default route

			timing plan for the routes included in the response plan activation
TCS008	FEAT70.8	Timing Plan Activation History	The software shall log all activations of route timing plans including the date, user, route timing plan, included traffic signal controllers, and event ID to the database

2.11.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- The user will create different blockage conditions and monitor the software response in reference to stored data and calculated severity.

2.11.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- TCS
- EM

Devices Required

The following devices will be used during the test:

- Traffic Control Simulator

Configuration Required

The following will be setup/configured before the test is performed:

- Traffic Control Simulator should be configured with controllers and existing plans, and able to provide data to SunGuide.
- The protocol document should be available for viewing.
- Make sure the TCS Driver is running in Detail logging mode.
- Configure a user that does not have permission to configure traffic signal routes
- Ensure there exists one Traffic Signal Route
- Configure the <routePlanExpirationMins> in <tcs> of Sunguide configuration file to 2

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT70.1 FEAT70.1.1 FEAT70.1.2	Connect the simulator to the Nazteq Driver while the driver is in Detail mode. Using Status Logger, view the received XML from the simulator and compare the output to the samples provided in the protocol document.	The XML format matches the protocol from the protocol document. The controller should have a controller name, controller ID, latitude, longitude, currently activated timing plan, and operational status from the interface. The timing plan should have a plan ID, plan description, controller ID, and controller name and traffic signal controllers the plan would affect, if activated	☐	☐
2	FEAT70.3 FEAT70.3.1 FEAT70.3.2 FEAT70.3.3	Open the SunGuide Operator Map and log in to TCS. View the icons on the map. Hover over the icon to view the controller's status and view the corresponding color. Note controllers that have good communication and ones that do not. Toggle the icon display off/on.	The controller status will be shown as part of the icon coloring as well as in the hover text. Controller icons can be shown and hidden.	☐	☐

3	FEAT70.1.3 FEAT70.1.3.1	In the SunGuide config file, check the frequency of polling the Traffic Signal interface for new controller status. Using the Simulator, change the status of one of the Active controllers to a Failed status and one of the failed Controllers to and Active status. Using the Status Log, examine the logs to show the current polling frequency. After the TCS Driver has polled the Traffic Signal interface, check the status of the modified controllers on the Operator Map.	The polling frequency value is determined in the configuration file.	☐	☐

4	FEAT70.2 FEAT70.2.1 FEAT70.2.2	From the SunGuide Operator Map, log in with a user that does not have permission to configure traffic signal routes. Attempt to configure a traffic signal route. Log in to the Operator with a user that does have permission to configure a traffic signal route. Note the fields needed to configure a traffic signal route and add a traffic signal route. View the signal route database tables and verify the configuration information is stored. Note the available traffic signal plans. Compare the available traffic signal plans to the plans made available by the simulator. Once saved, modify the traffic signal route and resave. Verify the change was saved in the database. Once saved, delete the traffic signal route. Verify the change was saved in the database.	Only users with permission will be able to configure traffic signal routes. Configuration of a traffic signal routes includes a name, roadway, direction, affected roadway, affected direction, a default timing plan, a low severity timing plan, a medium severity timing plan, and a high severity timing plan. All plans made available from the traffic signal interface are available to the user for configuration of a traffic signal route.	☐	☐

5	FEAT70.4 FEAT70.4.1 FEAT70.4.2 FEAT70.5 FEAT70.8	From the SunGuide Operator Map, log in with a user that does not have permission to activate timing plans. Navigate to Traffic Signals > Activate Timing Plan. Choose a Signal Route and attempts to activate a Timing Plan. Using an active event, attempt to add a Signal Timing Plan to a response plan. From the SunGuide Operator Map, log in with a user that does have permission to activate timing plans. Open the dialog to activate a timing plan. Select a traffic signal route and then a timing plan to activate. Activate the plan. Use Status Logger to view the activation command being sent to the simulator. Check the activation table in the database and verify there is an entry for the activation.	Users without permission are unable to activate timing plans or add a Signal Timing Plan to a response plan. Users with permission are able to activate timing plans. Activations are saved in the database.	☐	☐

6	FEAT70.4.2.1 FEAT70.4.2.2	Verify the <routePlanExpirationMins>value for traffic signal plans in the SunGuide configuration file. Navigate to Traffic Signals > Activate Timing Plan. Choose a signal route and activate a timing plan. Wait longer than the number of minutes specified in the configuration file. In the activation table in the database, verify the default plan for the chosen signal route was activated after the expiration value was reached. Choose a signal route and activate a timing plan. Wait half the amount of time as the number of minutes specified in the configuration file. Activate a different timing plan on the same signal route. After the initial activation would have timed out but before the 2nd activation times out, check the activation table of the database for a “default” activation.	The default timing plan for a signal route is activated if not updated in the frequency specified in the configuration file.	☐	☐

7	FEAT70.5 FEAT70.5.1 FEAT70.5.1.1 FEAT70.6 FEAT70.7 FEAT70.8	Create or open an event and get a response plan. Manually add a signal route to the response plan. When setting the timing plan, highlight the devices on the Operator Map that would be affected by the selected timing plan. Select a timing plan that is not the default plan. Activate the response plan. Use Status Logger to view the activation command being sent to the simulator. Wait 1 minute. Deactivate the timing plan. Use Status Logger to view the activation command being sent to the simulator. Verify both the initial activation and the activation of the default plan on termination of the response plan are shown in the database activation table.	Timing Plans can be activated through response plans and the activations of any plan are logged in the database.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.12 IC-11: CCTV Polling

2.12.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements for poll CCTV Cameras.

2.12.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 11: CCTV Polling Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
CCTV001	FEAT8.1.14	Poll Cycle Configuration	SunGuide shall allow a user with permission to configure a poll cycle for a CCTV camera
CCTV002	FEAT8.1.15	Poll CCTV Camera	SunGuide shall poll a CCTV camera on configured interval and return a status value indicating whether or not the camera responded to the polling request

2.12.3 Test Approach

- Using real camera, a poll process will be configured and executed.

2.12.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- CCTV and CCTV Drivers
- Operator Map

Configuration Required

The following will be setup/configured before the test is performed:

- At least 1 real NTCIP camera configured and Active. Place CCTV NTCIP Driver log in detail.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT8.1.14 FEAT8.1.15	Using a configured camera Set the Polling cycle to 2 minutes. Monitor the status log for the configured driver and note the timing of each poll cycle to the	The camera is polled at 2 minute intervals and remains active.	☐	☐

		camera.			
2	FEAT8.1.15	Using a configured camera Set the Polling cycle to1 minute. Monitor the status log for the configured driver and note the timing of each poll cycle to the camera.	The camera is polled at 1 minute intervals and remains active.	☐	☐
3	FEAT8.1.15	Disable communications to the camera and wait for the next poll cycle.	Camera should enter a “Failed” operational status.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.13 IC-12: Ramp Meter Scheduling

2.13.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements for scheduling ramp meter modes.

2.13.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 12: Ramp Meter Mode Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
RMS002	FEAT15.4	Configure Schedules	The software shall allow users to configure schedules for ramp metering controllers
RMS002A	FEAT15.4.1	Supported Modes	The software shall allow users to schedule a ramp metering controller to enter the "Off", "Local", or "Fuzzy" metering modes
RMS002B	FEAT15.4.2	Manual Rate Scheduling	The software shall allow users to schedule the sending of a manual rate to a ramp metering controller

2.13.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- A user will configure and execute different modes for controlling a ramp meter.

2.13.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- Operator Map
- RMS
  - Bitran-170 Driver
- SAS
- TSS

Devices Required

The following devices will be used during the test:

- A ramp metering controller

Configuration Required

The following will be setup/configured before the test is performed:

- TSS driver simulators providing data for the WsDotTss driver
- Simulated loop inputs to the ramp metering controller

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT15.4 FEAT15.4.1	Create a new schedule. Create a new scheduled item. Set the schedule to occur a 3 minutes in the future and a duration of 3 minutes. Select an Action Type of “Ramp Metering” and the RMC configured for this test. Set the scheduled metering state to be “Fuzzy”. Save the scheduled item. Ensure both the schedule and scheduled item are active. Open the ramp meter control dialog. Wait for the scheduled time.	At the scheduled time, the “Metering Status” of the controller will change to “Fuzzy” in the RMC control dialog.	☐	☐
2	FEAT15.4 FEAT15.4.1	Create a new scheduled item. Set the schedule to occur a 3 minutes in the future and a duration of 3 minutes. Select an Action Type of “Ramp Metering” and the RMC configured for this test. Set the scheduled metering state to be “Local”. Save the scheduled item. Ensure both the schedule and scheduled item are active. If not already open, open the ramp meter control dialog. Wait for the scheduled time.	At the scheduled time, the “Metering Status” of the controller will change to “Local” in the RMC control dialog.	☐	☐
3	FEAT15.4 FEAT15.4.1	Create a new scheduled item. Set the schedule to occur a 3 minutes in the future and a	At the scheduled time, the “Metering Status” of the controller will change to “Fuzzy”.	☐	☐

		duration of 3 minutes. Select an Action Type of “Ramp Metering” and the RMC configured for this test. Set the scheduled metering state to be “Manual”. Set the metering rate to be 12. Save the scheduled item. Ensure both the schedule and scheduled item are active. If not already open, open the ramp meter control dialog. Wait for the scheduled time.	The metering rate for all metering lanes will be set explicitly to “12” in the RMC control dialog.		
4	FEAT15.4 FEAT15.4.2	Create a new scheduled item. Set the schedule to occur a 3 minutes in the future and a duration of 1 minute. Select an Action Type of “Ramp Metering” and the RMC configured for this test. Set the scheduled metering state to be “Off”. Save the scheduled item. Ensure both the schedule and scheduled item are active. If not already open, open the ramp meter control dialog. Wait for the scheduled time.	At the scheduled time, the “Metering Status” of the controller will change to “Off” in the RMC control dialog. The controller itself will begin ending the metering.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.14 IC-13: Ramp Meter Archive

2.14.1 Objectives

The objective of this integration case is to test the requirements associated with SunGuide enhancements for archiving ramp meter data.

2.14.2 Requirements to be tested

The following table contains a list of the requirements associated with this integration case that will be tested during the formal acceptance testing of the SunGuide software.

Table 13: Ramp Meter Archival Requirements

SunGuide ID	Requirement Number	Requirement Name	Requirement Text
RMS003	FEAT15.5	Archive Data	The software shall archive ramp metering data
RMS003A	FEAT15.5.1	Default Fuzzy Rules and Parameters	The software shall archive the default settings for fuzzy rules and fuzzy parameters
RMS003B	FEAT15.5.2	Controller Configuration	The software shall archive the following configuration data for a ramp metering controller: name, address, location, metering and fuzzy lanes, fuzzy parameters, fuzzy rules, and firmware parameters
RMS003C	FEAT15.5.3	Controller Data	The software shall archive the following status data for a ramp metering controller: manual rate range, controller mode, manual rates, violation counts, operational status
RMS003D	FEAT15.5.4	Central Scheduling Information	The software shall archive central scheduling information for ramp metering controllers
RMS003E	FEAT15.5.5	System Status	The software shall archive the following system status information: process status, controller status, and associated detector status
RMS003F	FEAT15.5.6	Inputs to Fuzzy Logic	The software shall archive inputs to fuzzy logic when a rate change is made
RMS001	FEAT15.2.7	Comment on Manual Rate Changes	The software shall allow users to provide a comment when setting a manual rate or rate range for a ramp metering controller.
RMS001A	FEAT15.2.7.1	Archive Comment	The software shall archive the provided comment when setting a manual rate or rate range for a ramp metering controller

2.14.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- The database will be examined to show the archiving for ramp meters.

2.14.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- Admin Editor
- Data Archive
- RMS
  - Bitran-170
- Status Log Viewer
- TSS

Devices Required

The following devices will be used during the test:

- A ramp metering controller

Configuration Required

The following will be setup/configured before the test is performed:

- TSS driver simulator providing data for the WsDotTss driver.
- Simulated loop inputs to the ramp metering controller.
- Blank ODS_RMS_* tables
- Data Archive should be off to start testing; all other processes should be running.
- XML Tester

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1	FEAT15.5 FEAT15.5.1	Start the Data Archive subsystem. Wait until the Data Archive completes startup, as indicated by the log message “Client interface to rms ready.” Note the timestamp of the log message. Using XML Tester, send a “setDefaultFuzzyRulesReq” to the ramp metering subsystem.	The query results should return two entries for the modified default fuzzy rule: the initial entry with a timestamp before or at the same time as the log message, and a second entry that corresponds to the time the request was sent.	☐	☐

		Note the time the request was sent. Run the query associated with this test step.			
2	FEAT15.5 FEAT15.5.1	Using XML Tester, send a "setDefaultFuzzyParametersReq" to the ramp metering subsystem. Note the time the request was sent. Run the query associated with this test step.	The query results should return two entries for the modified default fuzzy parameter: the initial entry with a timestamp before or at the same time as the log message from test 1, and a second entry that corresponds to the time the request was sent.	☐	☐
3	FEAT15.5 FEAT15.5.2	Open a ramp meter controller configuration in Admin Editor. Change the Location Description of the controller. Note the time the action was performed. Run the query associated with this test step.	The query results should return two entries for the modified ramp meter controller: the initial entry with a timestamp before or at the same time as the log message from test 1, and a second entry that corresponds to the time the configuration was modified.	☐	☐
4	FEAT15.5 FEAT15.5.2	Open the ramp meter fuzzy lanes configuration for a ramp meter controller in Admin Editor. Add a fuzzy lane association. Note the time the action was performed. Run the query associated with this test step.	The query results should return two entries for each fuzzy lane associated with the modified ramp meter controller: the initial entry with a timestamp before or at the same time as the log message from test 1, and a second entry that corresponds to the time the configuration was modified.	☐	☐
5	FEAT15.5 FEAT15.5.2	Open the ramp meter fuzzy parameter configuration for a ramp meter controller in Admin Editor. Change both a fuzzy parameter and a fuzzy rule value. Note the time the action was performed.	The query results should return two entries for each fuzzy parameter and fuzzy rule associated with the modified ramp meter controller: the initial entry with a timestamp before or at the same time as the log message from test 1, and a second entry that corresponds to the time the configuration was	☐	☐

		Run the query associated with this test step.	modified.		
6	FEAT15.5 FEAT15.5.2	Open the ramp meter firmware parameter configuration dialog in Operator Map by right clicking a ramp meter icon and selecting firmware. Change a firmware parameter value. Note the time the action was performed. Run the query associated with this test step.	The query results should return two entries for each firmware parameter associated with the modified ramp meter controller: the initial entry with a timestamp before or at the same time as the log message from test 1, and a second entry that corresponds to the time the configuration was modified.	☐	☐
7	FEAT15.5 FEAT15.5.5	Open the ramp meter control dialog in Operator Map. Switch a controller to “Active”. Wait for the controller to be polled. Note the time the controller was first polled. Switch the controller to “Out of Service”. Note the time the controller status was changed. Run the query associated with this test step.	The query results should return at least two results. One result should note that the op status was set to active, and the other that the controller was placed out of service.	☐	☐
8	FEAT15.5 FEAT15.5.3	From the ramp meter control dialog, set a controller to an “Active” state. Wait 1 minute. Change the metering state to “Local”. Wait 1 minute. Change the metering state to “Fuzzy”. Wait at least 5 minutes for Data	The query results should return rows with timestamps at the same frequency as the poll cycle of the controller. The metering state and rates should be included and reflect the status of the controller.	☐	☐

		Archive to perform at least one bulk insert of RMS status. Run the query associated with this test step.			
9	FEAT15.5 FEAT15.5.6	Run the queries associated with this test step.	The TSS query results should show the smoothed speed, smoothed occupancy, and volume of each TSS lane fuzzy lane association with the RMC at each poll cycle. The fuzzy rules query results should show the current fuzzy rules entries used by the controller at a given status update. The fuzzy parameters query results should show the current fuzzy parameters entries used by the controller at a given status update.	☐	☐
10	FEAT15.2.7 FEAT15.2.7.1	Set the metering to fuzzy if not already. Fill out the manual metering rate ranges for a controller and click to send. When prompted, provide a comment. Wait two minutes. Change the controller metering rate back to fuzzy. Wait at least 5 minutes for Data Archive to perform at least one bulk insert of RMS status. Run the query associated with this test step.	The query results should return rows with timestamps at the same frequency as the poll cycle of the controller. The metering state and rates should be included and reflect the status of the controller. The comment should also be included in each status update until the metering status is changed.	☐	☐
11	FEAT15.2.7 FEAT15.2.7.1	Fill out the manual metering range for a controller and click to send. When prompted, provide a comment.	The query results should return rows with timestamps at the same frequency as the poll cycle of the controller. The metering state and rates should be included and reflect the status of the controller. The comment should also be	☐	☐

		Wait two minutes. Change the controller metering rate back to fuzzy. Wait at least 5 minutes for Data Archive to perform at least one bulk insert of RMS status. Run the query associated with this test step.	included in each status update until the metering status is changed.		
12	FEAT15.5 FEAT15.5.4	If one is not already configured, configure a schedule and scheduled item for a ramp meter. Run the query associated with this test step.	The query results should include all scheduled items for a ramp metering action. The results should indicate the affected controllers, the metering state, metering rate (if applicable), and recurrence pattern.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.15 IC-14: CCTV Preset Lock

2.15.1 Objectives

The objective of this integration case is to test the ability to lock particular presets for a CCTV camera so that modification is only allowed by users with permission.

2.15.2 Requirements to be tested

This enhancement did not have requirements but is based on Footprint issue 2303.

2.15.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- A camera will be configured so that some of the preset are locked. The functionality will be verified and then a user with permission and one without permission will attempt to change the preset.

2.15.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- CCTV
- Operator Map

Devices Required

The following devices will be used during the test:

- Camera with multiple configured presets

Configuration Required

The following will be setup/configured before the test is performed:

- View the SunGuide configuration file to verify the number of presets that are locked.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1		Log into SunGuide with a user that does NOT have permission to change locked presets. Attempt to change a locked preset. Attempt to move the camera to a locked preset.	A user without permission is able to move to a locked preset, but unable to modify the preset.	☐	☐

2		Log into SunGuide with a user that has permission to change locked presets. Attempt to change a locked preset. Attempt to move the camera to a locked preset.	A user with permission is able to move to a locked preset and able to modify the preset.	☐	☐
3		Using the SunGuide Config Editor, change the number of locked presets. Restart CCTV. View the number of locked presets for a camera.	The number of locked presets is configurable.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.16 IC-15: PTZ Control of Tour Cameras

2.16.1 Objectives

The objective of this integration case is to test the ability to PTZ a CCTV Camera in Video on Desktop while that camera is part of a tour.

2.16.2 Requirements to be tested

This enhancement did not have requirements but is based on Footprint issue 2569.

2.16.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- A camera will be placed in a tour and PTZ commands will be executed.

2.16.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- CCTV
- Operator Map

Devices Required

The following devices will be used during the test:

- Multiple cameras with active video streams

Configuration Required

The following will be setup/configured before the test is performed:

- Create a Video on Desktop Tour with several cameras.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1		Log into SunGuide, launch Video on desktop and populate a tour into the window. Use the Pause, Play, Next Camera, and Previous Camera buttons to cycle the tour. Pause a tour and PTZ the camera. Press the Play button to continue the tour.	Cameras may be Paused, Played, and cycled. When paused, cameras may use PTZ.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.17 IC-16: Removal of Non-TSS Links

2.17.1 Objectives

The objective of this integration case is to verify that non-TSS links have been removed from the system.

2.17.2 Requirements to be tested

This enhancement did not have requirements but is based on Footprint issue 3251.

2.17.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- The Operator map will be used to examine the current link configuration to verify there are no non-TSS links. Links will be added and deleted to verify they do not create non-TSS links.

2.17.4 Test Descriptions

The following sections detail the tests to be performed.

Subsystems Required

- TSS
- Operator Map

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Requirement Number	Test Steps	Expected Result	P	F
1		Log into the Operator Map and find a link to delete. This link should have been mapped to the Operator Map. Delete the link. View the location of the link on the Operator Map.	The link is deleted from the system and does not exist as a non-TSS link.	☐	☐
2		Attempt to add a non-link manually.	The user is unable to configure non-TSS links	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.18 IC-17: User Interface

2.18.1 Objectives

The objective of this integration case is to test the dialogs in the User Interface that have been changed from IE to WPF in this release. This will be a combination of configurations not previously in the Operator Map and dialogs that previously existed that have simply been redesigned.

2.18.2 Requirements to be tested

Since the dialogs that were redesigned did not change the functionality, there are no requirements to test.

2.18.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- For each dialog that was redesigned, the dialogs will be tested to exercise all of its functionality to ensure nothing was broken during the conversion. The 6.2 system and the design reviews slides/comment will also be available for review during this time.

2.18.4 Test Descriptions

Subsystems Required

- AVLRR and SPARR Driver
- CCTV and NTCIP Driver
- DMS and Driver
- EM
- SAA
- TVT
- TSS
- VS
- VW and Activu Driver
- C2C Publisher
- C2C Subscriber
- IDS with VisioPad Driver, FHP Driver, and active alerts

Devices Required

The following devices will be used during the test:

- SPARR Simulator
- CCTV device
- DMS Simulator
- Jupiter Canvas Simulator
- TSS Simulator
- Citilog Simulator
- Joystick

Configuration Required

The following will be setup/configured before the test is performed:

- Simulators and devices should be configured to provide data
- Joystick is connected and operational.
- C2C Test Suite able to accept commands

Subsystem: AVL

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	Availability Status Config	Add an Availability Status. Ensure the new status is available for use in the AVL Status Dialog. Edit an Availability Status. Remove an Availability Status.	Availability Status can be added, modified, and deleted. Added items are instantly available for use.	☐	☐
2	Beat Config	Add a Beat. Ensure the new beat is available for use in the AVL Status Dialog. Edit a Beat. Remove a Beat.	Beats can be added, modified, and deleted. Added items are instantly available for use.	☐	☐
3	Geofence Config	Add a Geofence. Ensure the new Geofence is available for use in the Beat Dialog. Edit a Geofence. Remove a Geofence.	Geofences can be added, modified, and deleted. Added items are instantly available for use.	☐	☐
4	Operator Config	Add an Operator. Ensure the new Operator is available for use in the AVL Status Dialog. Edit an Operator. Remove an Operator.	Operators can be added, modified, and deleted. Added items are instantly available for use.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
5	Radio Config	Add a Radio. Ensure the new Radio is available for use in the AVL Status Dialog. Edit a Radio. Remove a Radio.	Radios can be added, modified, and deleted. Added items are instantly available for use.	☐	☐
6	Telephone Config	Add a Telephone. Ensure the new Telephone is available for use in the AVL Status Dialog. Remove a Telephone.	Telephones can be added, modified, and deleted. Added items are instantly available for use.	☐	☐
7	Vehicle Agency Config	Edit a Vehicle Agency.	Vehicle Agencies can only be modifed.	☐	☐
8	Vehicle Config	Add a Vehicle. Ensure the new Vehicle is available for use in the AVL Status Dialog. Edit a Vehicle. Remove a Vehicle.	Vehicles can be added, modified, and deleted. Added items are instantly available for use.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
9	Vehicle Status	Select a vehicle and manually put them into Start Shift. Change the Vehicle State to Break. Change the Vehicle State to End Shift. Using the SPARR Simulator, log a vehicle into the system. Simulate multiple GPS positions. View the Status Dialog showing the position updates. From the Operator Map, use the Find on Map button to locate the vehicle on the map. Use the Show Tracks button to show and hide the vehicles previous positions. When the vehicle leaves the geofence area, show the geofence violation and Approve the Geofence Violation. Using the simulator, change the state to End Shift.	Vehicle status is tracked through status and position changes. Geofence violations are shown and can be approved.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
10	Vehicle Replay	Right click on a vehicle that has been simulating GPS positons and select Vehicle Location Replay. Select a vehicle and a time period where the vehicle had simulated data. Use the Ribbon icon to Find the Vehicle on the Map. Scroll the map away from the Vehicle and select Move to Region. Play the history of the Vehicle and watch the vehicle move on the Operator Map. Toggle the Show Track for the vehicle. Run a report for the history of the vehicle. Exit the Vehicle Replay and view the generated report.	Vehicle history can be aggregated based on time and replayed to the Operator. Reports can be generated from the data.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: CCTV

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	Camera Configuration Dialog	Open the Camera Configuration Dialog. Add a new camera for the NTCIP Driver. Add multiple video streams and set the local/remote settings. Edit a camera position using the Place on Map button. Scroll away from the cameras current position and use the Find on Map button. Delete a camera.	Cameras can be added, modified, and deleted. Cameras can be placed on the map.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
2	Camera Blocking Dialog	From the Operator Map, open the Camera Blocking / Visiopad Detection dialog. Use the Find on Map to locate a camera. Block a camera. Use IE to view the current output of the C2C publisher and confirm the blocking status of the camera. Unblock the camera. Use IE to view the current output of the C2C publisher and confirm the blocking status of the camera. Simulate a Visiopad alert and confirm it comes through in the Map. Disable VisioPad detection for a camera and ensure the simulator receives the request. Enable VisioPad detection for a camera and ensure the simulator receives the request. Disable VisioPad detection systemwide and ensure the simulator receives requests to disable all cameras. Enable VisioPad detection systemwide and ensure the simulator receives requests to enable all cameras.	User can use Find on Map to locate a camera. Cameras can be blocked and unblocked. VisioPad detection can be blocked and unblocked.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
3	Camera Control Dialog	From the Operator map, open the camera control dialog and find a camera that is currently Active and responding. Pan, Tilt and Zoom the camera. Add, Modify, and delete presets. Utilize the Iris and Focus commands. Filter the list of cameras based on Roadway and Status. Change the Op Status on the Camera to Out of Service and then back to Active. Acquire a lock on a camera. Release the lock. Find a camera on the map using the ribbon icon. Switch to the advanced tab and run several advanced commands.	Cameras can PTZ, focus, use presets, set op status, and highlight on the Operator Map.	☐	☐
4	Joystick Configuration	Make sure a Joystick is operational. Using to Operator Map, open the Joystick Configuration. Set the Zoom In, Zoom Out, Focus In, and Focus Out buttons. Close the configuration dialog. Open a camera control dialog for an operational camera. Use the Joystick to PTZ and focus.	Joysticks are configurable and usable.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: DMS

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	Approved Words Configuration	Using the Operator Map, open the Approved Words Configuration Dialog. Add an approved word. Post the approved word to a sign. Remove the approved word. Post the approved word to a sign.	Approved words successfully post while non-approved words need operator approval.	☐	☐
2	DMS Font Configuration Dialog	Using the Operator Map, open the DMS Font Configuration Dialog. Add a new font. Configure a sign to use the new font and post a message to the sign. Change the configured DMS to use a different font. Delete the font.	Fonts can be added and deleted. Fonts can be assigned to DMS.	☐	☐
3	DMS Manufacturers Configuration	Using the Operator Map, open the DMS Manufacturers Configuration. Add a new Manufacturer. Configure a sign to use the new Manufacturer and save the configuration. Change the configured DMS to use a different Manufacturer. Delete the Manufacturer.	Manufacturers can be added and deleted. Manufacturers can be assigned to DMS.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
4	DMS Configuration	Using the Operator Map, open the DMS Configuration. Add a new DMS including protocol and connection parameters. Note the validation done for the parameters. Edit the DMS and place it on the map using the ribbon icon. On the Operator Map, navigate away from the DMS and then use the dialog's Find On Map function to locate the DMS. Send a message to the DMS. Delete the DMS.	DMSs can be added, modified, and deleted. DMS can be placed on a map as well as found on the map using the ribbon icons.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: VW

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	Video Wall Control	Ensure the simulator is configured and operational. Using the Operator Map, open the Video Wall Control dialog. Note the layout of the wall. Adjust the zoom slider to fit the Video Wall to the dialog. Note the sizing. Close and reopen the dialog. Note the selected wall, window sizing, and zoom level are the same. Drop a source on the video wall. Drop a tour on the video wall. Select the Manage Layouts ribbon icon and select a new layout. Drop a source on the video wall. Drop a tour on the video wall. Send a refresh geometry command and note the response.	Video wall sources and tours can be dropped onto the wall. Walls can be resized as well as have alternate layouts.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: SAA

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	Map Shield Configuration	Using the Operator Map, open the Map Shield Editor dialog. Place a new shield on the map. Select the Move Shields ribbon icon. Find a shield on the map and move it. Select the Set Zoom ribbon icon and set the zoom level of some of the shields on the map. Select the Delete Shields ribbon icon and delete a shields from the map. Select a shield from the list of shields and select the Find on Map ribbon icon.	Shields can be added, modified, and deleted. Shields can be located using the ribbon icons.	☐	☐
2	Map View Configuration	Using the Operator Map, open the Map View Configuration dialog. Add a new View. Close the dialog and select the view from the upper left of the Operator Map. Open the Map View Configuration dialog. Delete a view from the list of views. Close the dialog and attempt to select the view from the upper left of the Operator Map. Open the Map View Configuration dialog. Reorder the Map Views list. Close the dialog and note the ordering for available views.	Map views can be added and deleted. Ordering of the views may also be changed.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
3	User Action Dialog	Log into the 2 Operator Maps using 2 different users. Create an event out of an FHP alert with one of the users. Generate a new alert. Using the 2nd user, associate the FHP alert to the event created by the first user. When the User Action dialog appears on user 1's desktop, note the text description and select the option to Update the event but retain ownership. Generate a new alert. Using the 2nd user, associate the FHP alert to the event created by the first user. When the User Action dialog appears on user 1's desktop, note the text description and select the option to Reject the Change. Generate a new alert. Using the 2nd user, associate the FHP alert to the event created by the first user. When the User Action dialog appears on user 1's desktop, note the text description and select the option to Transfer the Ownership to user 2.	Users get directed messages when another user need to make changes to an event that is owned by someone else.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: TVT

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	Travel Time Destinations	Using the Operator Map, open the Travel Time Destinations dialog. Add a new destination. Open the Travel Time Device Template Configuration dialog and ensure the new Destinations is available for use. Delete the destination. Ensure the destination is no longer available for use in the Travel Time Device Template Configuration dialog. Within the Travel Time Device Template Configuration Dialog, find a destination in use. Attempt to delete that destination. Note the message.	Destination may be added and deleted. Destinations in use cannot be deleted.	☐	☐
2	Travel Time Device Template Configuration	This is tested already in IC-5.	IC-5 will cover this test.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
3	Travel Time Message Template Configuration	Using the Operator Map, open the Travel Time Message Template Configuration dialog. Create a message template with no color or graphics. Create a message template with graphics and color. Edit another template. Delete a template. Attempt to delete a template that is currently in use. From the Travel Time Device Template Configuration dialog, confirm the newly created templates are available for use.	Templates can be added, modified and deleted.	☐	☐
4	Travel Time Options	Using the Operator Map, open the Travel Time Options dialog. Set new values for generation of travel times and travel time message priority. Save. Use Status Logger to see the frequency for new travel time message generation. Use the DMS Status dialog to determine the priority that travel time messages are currently using.	Options can be saved.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
5	Travel Time Link Configuration	Using the Operator Map, open the Travel Time Link Configuration dialog. Create a new travel time. Select multiple links and change the defined length for some of the links. View the Travel Times dialog to ensure the Travel Times link was added. Modify a link and save. Select a link and select the ribbon icon for Select on Map. Confirm that the links represented in the travel time are highlighted on the Map. Navigate away from the link and select the ribbon icon for Find on Map. Confirm the Map zooms to the appropriate area. Delete a travel time link and confirm it is no longer available on the Travel Times dialog.	Links can be added, modified, and deleted. TSS links that make up a travel time can be viewed on the map.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: TSS

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	TSS System Configuration	Using the Operator Map, open the TSS System Settings dialog. Modify several values in the System setting and save. Close the dialog and reopen the dialog. Log out of the Operator Map, log back in, and view the TSS System Settings dialog.	System setting can be modified.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
2	TSS Status	Using the Operator Map, open the TSS Status dialog. Select a link and view that status of each lane. Navigate to link that is in a warning or alert state. Hover over the average lane SOV and the individual lane SOV. Note the threshold graph. Close the TSS Status dialog. Click on a link and verify the dialog automatically selects the link. Use the Find on Map button to locate both the detector and a link. Set the Op Status of a detector to Out of Service. Set the Op Status of a detector to Active. Find a Probe Link and disable Dynamic Linking, Enable Probe Linking for that link. Disable the system wide dynamic linking. Enable the system wide dynamic linking.	Detector, link, and lane status can be monitored. Op Status of detectors can be set. Users can find detectors or links on the Operator Map. Dynamic Linking can be enabled and disable per link and on a system wide basis.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: VS

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	Video Destination Configuration	Using the Operator Map, open the Video Destination Configuration dialog. Add a new video destination. Modify an existing video destination. Verify the Destinations are available in the Video Destination Layout Configuration dialog (Virtual Video Wall). Delete a destination.	Destinations can be added, modified, and deleted.	☐	☐
2	Video Source Configuration	Using the Operator Map, open the Video Source Configuration dialog. Add a new video source. Use the Find of Map ribbon icon to locate the camera selected on the Operator Map. Modify an existing video source. Verify in the Camera Blocking Dialog that once a source is configured to be part of a camera, the option to block that source is available. Delete a source.	Sources can be added, modified, and deleted.	☐	☐
3	Video Tour Configuration	Using the Operator Map, open the Video Tour Configuration dialog. Add a new video tour. Select multiple sources and add them to the tour. Modify an existing video tour. Verify in the Video Wall Control the new tour is available for use. Delete a video tour.	Tours can be added, modified, and deleted.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
4	Video Destination Layout Configuration	Using the Operator Map, open the Video Destination Layout Configuration dialog (Virtual Wall Layout). Add a new virtual wall. Add several destinations with configured coordinates. Verify the new wall is available in the Video Switching dialog. Modify an existing virtual wall. Delete a virtual wall.	Virtual walls can be added, modified, and deleted.	☐	☐
5	Workstations	Using the Operator Map, open the Workstations dialog. Add a new workstation. Change a destination to use the added workstation. View the Video Switching Dialog's Local Wall to verify the workstation name. Modify an existing workstation. Delete a workstation.	Workstations can be added, modified, and deleted.	☐	☐
6	Video Switching Control	Using the Operator Map, open the Video Switching Control dialog. Note that these are not simulated so will fail. They will however attempt the request and show that in the error message. Select a configured wall. Drop tours on the destinations. Drop tours on the destinations.	Sources and Tours can be dropped on destinations in a virtual video wall.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
7	Video Wall Control	Using the Operator Map, open the Video Switching Control dialog. Select a video wall and drop a Source on one of the destinations. Drop a Tour on a destination. Refresh the Geometry.	Sources and Tours can be dropped on destinations in a video wall. Wall Geometry can be refreshed.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

Subsystem: EM

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Dialog Name	Test Steps	Expected Result	P	F
1	EM Abbreviation Configuration	Using the Operator Map, open the EM Abbreviation Configuration dialog. Add an abbreviation. Modify an abbreviation. Delete an abbreviation.	Abbreviations can be added, modified, and deleted.	☐	☐
2	EM Activity Configuration	Using the Operator Map, open the EM Activity Configuration dialog. Add an activity. Verify the activity is available for use in the Event Details dialog. Modify an activity. Delete an activity.	Activities can be added, modified, and deleted.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
3	EM Agency Configuration	Using the Operator Map, open the EM Agency Configuration dialog. Add an Agency. Add contacts to the Agency. Verify the Agency is available for use in the Events Details. Modify an agency. Modify a contact. Delete a contact. Delete and agency.	Agencies can be added, modified, and deleted. Contacts can be added, modified, and deleted.	☐	☐
4	EM Comment Types Configuration	Using the Operator Map, open the EM Comment Types Configuration dialog. Add a comment type. Verify the comment type is available for use in the Event Details dialog. Modify a comment type. Delete a comment type.	Comment Types can be added, modified, and deleted.	☐	☐
5	EM Event Status Configuration	Using the Operator Map, open the EM Event Status Configuration dialog. Add an event status. Verify the event status is available for use in the Event Details dialog. Modify an event status. Delete an event status.	Event Status can be added, modified, and deleted.	☐	☐
6	EM Event Types Configuration	Using the Operator Map, open the EM Event Types Configuration dialog. Modify the sort order for event status.	Event Status sort order can be modified.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
7	EM Injury Type Configuration	Using the Operator Map, open the EM Injury Type Configuration dialog. Add an injury type. Verify the injury type is available for use in the Event Details dialog. Modify an injury type. Delete an injury type.	Injury Type can be added, modified, and deleted.	☐	☐
8	EM County Configuration	Using the Operator Map, open the EM County Configuration dialog. Add a county. Verify the county is available for use in the Event Details dialog. Modify a county. Delete a county.	Counties can be added, modified, and deleted.	☐	☐
9	EM Lane Map Configuration	Using the Operator Map, open the EM Lane Map Configuration dialog. Add a lane map. Verify the county is available for use in the EM Location Configuration dialog. Modify a lane map. Delete a lane map.	Lane Maps can be added, modified, and deleted.	☐	☐
10	EM Lane Type Configuration	Using the Operator Map, open the EM Lane Type Configuration dialog. Add a lane type. Verify the county is available for use in the EM Lane Map Configuration dialog. Modify a lane type. Delete a lane type.	Lane Types can be added, modified, and deleted.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
11	EM Location Configuration	Using the Operator Map, open the EM Location Configuration dialog. Select a County, Roadway, and Direction. Add a location. Use the Place on map button to set the location. Verify the county is available for use in the EM Event Details dialog. Modify a location. Use the Find on Map button to locate a particular location. Use the Location Placement Mode button and move several locations on the map. Save the changes. Delete a location.	Locations can be added, modified, and deleted.	☐	☐
12	EM Reference Point Configuration	Using the Operator Map, open the EM Reference Point Configuration dialog. Add a reference point. Verify the reference point is available for use in the Event Details dialog. Modify a reference point. Delete a reference point.	Reference Points can be added, modified, and deleted.	☐	☐
13	EM Roadway Configuration	Using the Operator Map, open the EM Roadway Configuration dialog. Add a roadway. Verify the roadway is available for use in the Event Details dialog. Modify a roadway. Note: Roadways cannot currently be deleted.	Roadways can be added and modified.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
14	EM Mailing List Configuration	Using the Operator Map, open the EM Mailing List Configuration dialog. Add a mailing list. Add contacts to the mailing list. Verify the mailing list is available for use in the Response Plan Email dialog. Modify a mailing list. Modify the contacts of a mailing list. Delete a mailing list.	Mailing Lists can be added, modified, and deleted.	☐	☐
15	EM Organization Configuration	Using the Operator Map, open the EM Organization Configuration dialog. Add an organization. Verify the organization is available for use in the Event Details dialog. Modify an organization. Delete an organization.	Organizations can be added, modified, and deleted.	☐	☐
16	EM Procedural Error Configuration	Using the Operator Map, open the EM Procedural Error Configuration dialog. Add a procedural error. Verify the procedural error is available for use in the Event Details dialog. Modify a procedural error. Delete a procedural error.	Procedural Errors can be added, modified, and deleted.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
17	EM Message Template Configuration	Using the Operator Map, open the EM Message Template Configuration dialog. Add a message template including graphics and color. Verify the message template is available for use in the EM Device Templates dialog. Modify a message template. Delete a message template.	Message Templates can be added, modified, and deleted.	☐	☐
18	EM Device Template Configuration	Using the Operator Map, open the EM Device Template Configuration dialog. Add a device template including and setting some the event type specific message templates. Modify a device template. Delete a device template.	Device Templates can be added, modified, and deleted.	☐	☐
19	EM Color Configuration	Using the Operator Map, open the EM Color Configuration dialog. Add a color. Verify the color is available for use in the Event Details dialog. Modify a color. Delete a color.	Colors can be added, modified, and deleted.	☐	☐
20	EM State Configuration	Using the Operator Map, open the EM State Configuration dialog. Add a state. Verify the state is available for use in the Event Details dialog. Modify a state. Delete a state.	States can be added, modified, and deleted.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
21	EM Vehicle Make Configuration	Using the Operator Map, open the EM Vehicle Make Configuration dialog. Add a make. Add a model for that make. Verify the make and model are available for use in the Event Details dialog. Modify a make and model. Delete a make and model.	Vehicle Makes and Models can be added, modified, and deleted.	☐	☐
22	EM Vehicle Type Configuration	Using the Operator Map, open the EM Vehicle Type Configuration dialog. Add a vehicle type. Verify the vehicle type is available for use in the Event Details dialog. Modify a vehicle type. Delete a vehicle type.	Vehicle Types can be added, modified, and deleted.	☐	☐
23	EM Weather Condition Configuration	Using the Operator Map, open the EM Weather Condition Configuration dialog. Modify a weather condition. Verify the weather condition sorting is changed in the Event Details dialog. Note: Weather Conditions cannot currently be changed other than sort order.	Weather Conditions can be modified.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
24	Device Linking Configuration	Using the Operator Map, open the Device Linking Configuration dialog. Select a DMS and use the ribbon icon to Select Upstream nodes. Select a Virtual Node and use the ribbon icon to Select Upstream nodes. Use the ribbon icon view the selected upstream nodes of a DMS. Save the device linking. Wait for the Map to repopulate all DMS and Nodes. Select a DMS and use the ribbon Icon to find the device on the Map. Use the Show all ribbon icon to view all connected devices and nodes. Select a DMS on a particular roadway. Use the Show Roadway ribbon icon to show links on a roadway. Move a Virtual node. Delete a Virtual Node. Save device linking.	Device Linking allows the user to link devices and nodes. User can find devices on the map as well as view links between nodes.	☐	☐
25	Republish FLATIS Events	Ensure the C2C Test Suite is operational and capturing C2C commands sent to FLATIS. Using the Operator Map, open the Republish FLATIS Events dialog. Select and existing event and republish the event. Check the C2C test suite for the published command.	Operator may republish events to FLATIS	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
26	Remove FLATIS Events	Ensure the C2C Test Suite is operational and capturing C2C commands sent to FLATIS. Using the Operator Map, open the Remove FLATIS Events dialog. Enter an event number and remove the event. Check the C2C test suite for the published command.	Operator may republish events to FLATIS	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
27	Event List	Using the Operator Map, open the Event List dialog. View the available groups. Click on an event and note the details at the bottom of the dialog. Double click and event to open it. Close the event. Select an event and use the Open Event Details ribbon icon to open the event. Create and event using the Create Event ribbon icon. Find an event with an active response plan and use the Open Response Plan ribbon icon to open the response plan. Select an event and use the Find on Map to locate the event on the map. Select and event and use the Nearest CCTV ribbon icon to locate the nearest CCTV to the event. Select an event and use the Audit Event ribbon icon to open the Audit Event dialog with the event number prepopulated. Select the Change Settings ribbon icon and modify the color of operator owned events. View the operator owned events. Select the Change Settings ribbon icon and disable coloring of Operator owned events.	Events are sorted by group. Details are shown in the bottom of the dialog. Events can be open via the ribbon or double click. Response plans can be accessed. Events can be located on the map. Nearest CCTV can be located on the map. Users can open the audit dialog. User can change the setting for highlighting events.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
28	Event List	Using the Operator Map, open the Event List dialog. Simulate each type of alert into the Operator Map. View the alert list to the right of the dialog. Use the checkbox to show and hide alerts. Click on the alerts to bring up the alarm handling dialog. Handle an alert and verify it removes from the alert list.	Alert list can be filtered and alerts can be handled.	☐	☐
29	Event Details Administrative Details	Using the Operator Map, open the Event Details dialog either by creating a new event or selecting on from the event list. Release and Obtain ownership of the event. Make sure to finish in a state where you are the event owner. Note the date created. Change the status of an event to a non-closure state. Close the event. Note the last update time. Reopen the event. Note the last update time. Add a contact to the event and save the event. Remove a contact and save the event.	Users can obtain and release ownership of the event. Date Creation timestamp is shown. Users can change the event status. Users can add and remove event contacts.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
30	Event Details Impact on Roadways	Using the Operator Map, open the Event Details dialog either by creating a new event or selecting one from the event list. Select or change the Event Location. Save. Note the Location Description. Change the Event Location. Save and Note the Location Description. Input a distance. Save. Input a Mile Marker. Save. Uncheck and check the Has Congestion. Set a Congestion Head and Tail Location. Save and Note the description. Set the distance and Mile Marker fields on the Head and Tail. Save. Set a Lane Blockage using the existing lane configuration and save. Note the Blockage Description. Modify the Lane Blockage and save. Note the blockage description. Change the lane configuration. Set a Lane Blockage using the existing lane configuration and save. Note the Blockage Description. Modify the Lane Blockage and save. Note the blockage description. Set the Anticipation Clearance Time and save. Set the FL-ATIS Severity and save.	User can set the location and congestion for an event. Users can set lane blockage for an event. User can reconfigure the lane configuration. User can set the anticipated clearance time. Users can set the FL-ATIS Severity.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
31	Event Details Reporting and Dispatch	Using the Operator Map, open the Event Details dialog either by creating a new event or selecting one from the event list. Set or change the Organization and save. Set the Notifying Agency and Contact. Save. Dispatch a vehicle to an event. Note the Status and Status Timestamps. Arrive the vehicle and note the Arrival Timestamp. Set an Activity for the event. Depart the vehicle and note the Dispatch Timestamp. Dispatch a vehicle to the event. Cancel the Dispatch and note the Cancel Timestamp. Add a Procedural Error. Save.	User can set the Organization, Agency, and Agency Contact. User can dispatch, arrive, depart, and cancel Road Ranger Vehicles. User can input Procedural errors.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
32	Event Details Event Details	Using the Operator Map, open the Event Details dialog either by creating a new event or selecting one from the event list. Set FHP Incident # and save. Set the Waze Incident # and save. Change the Event Type and save. Set the Nearest CCTV with Preset and save. Use the ribbon icon for Nearest CCTV to highlight the nearest CCTV on the Operator Map. Select the No CCTV checkbox and ensure the CCTV selection box clears the nearest camera. Save. Change the Nearest CCTV to a camera with VisioPad detection enabled. ENSURE THE CAMERA DOES NOT ALREADY HAVE VISIOPAD DISABLED (Systemwide or individual). Select the checkbox for Disable while the event is active. Save. In the Camera Blocking dialog, verify the VisioPad detection has been disabled. Close the event and ensure the VisioPad detection is re-enabled. Re-open the event. Add an Involved Vehicle and save. Note the Involved Vehicle Description. Select a Primary Event and save. Use the Show Event Details button to open the Primary Event. In the Primary Event, note the text for the Secondary Event and verify it matches the event being used in this test. Close the Primary event dialog. Set the Injuries dropdown and save. Set the Weather Conditions and save. Note the Weather description.	User can set the FHP and Waze Incident number. Users can set the Event Type and nearest CCTV Camera. Users can add Involved Vehicles. User can set the Primary Event and View Secondary events. Users can set injuries for an event. Users can set weather conditions for an event. The SAE Description is visible for an event.	☐	☐
		View the current SAE Description. Verify the text matches the current Location, Location Congestion, Lane			

	Dialog Name	Test Steps	Expected Result	P	F
33	Event Details Comments and Event History	Using the Operator Map, open the Event Details dialog either by creating a new event or selecting one from the event list. Select a Comment Type and add a Comment. Select a different Comment Type and add a Comment. Review the Event Chronology for the added comments as well as the other actions in the chronology.	Users can add comments and view the event Chronology.	☐	☐
34	Event Details Responders	Using the Operator Map, open the Event Details dialog either by creating a new event or selecting one from the event list. Select a row in the responders and select the Notified button at the bottom of the dialog. Save. Note the timestamp that appeared. Wait until the next minute and set the On Scene time. Save. Note the timestamp that appeared. Wait until the next minute and set the Departed time. Save. Note the timestamp that appeared.	User can set the Notified, On Scene, and Departed time for responders.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
35	Event Details General	Using the Operator Map, open the Event Details dialog either by creating a new event or selecting on from the event list. Obtain ownership of the event. Generate a Chronology Report using the icon in the ribbon. View the generated report. Use the Find on Map ribbon icon to locate the event of the Operator Map. Use the Clone Event button to generate and a new event. View the popup for the new event details. Close the window for the cloned event. Use the Save and Suggest Response Plan ribbon icon to create and activate a response plan for an event. Close the Response Plan dialog. From the Event Details dialog, use the Open Response Plan ribbon icon to open the Response Plan dialog. Close the Response Plan dialog. Clear the congestion and lane blockage form the event. Save. From the Event Details dialog, attempt to set the Event Status to Closed with an active response plan. Cancel the request to Close the event. Use the Terminate Response Plan ribbon icon to Terminate the response plan. Change the Event status Closed and save.	Users are able to generate a Chronology Report. Users can find the location of an event on the Operator Map. Users are able to clone events. Users can suggest response plan, open the response plan dialog, and terminate response plans.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
36	Event Audit – Notifying Agency and Contact	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and select the Audit Type of Notifying Agency and Contact. Press the Retrieve Data button. Change the Notifying Agency and Contact for the record and save.	Users can change the Notifying Agency and Contact.	☐	☐
37	Event Audit – Event Status	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and select the Audit Type of Event Status. Press the Retrieve Data button. Attempt to move the first entry before the start of the event. Note the failure in that status dialog. Change the timestamp and event status type for one of the rows and save. Create at least 3 entries in the list. Attempt to move one of the entries before the time of the previous entry. Note the failure in that status dialog. Add a new entry, set the timestamp and value and save.	Users can change the Event Status and associated timestamps.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
38	Event Audit – Event Type	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and select the Audit Type of Event Type. Press the Retrieve Data button. Attempt to move the first entry before the start of the event. Note the failure in that status dialog. Change the timestamp and event type for one of the rows and save. Create at least 3 entries in the list. Attempt to move one of the entries before the time of the previous entry. Note the failure in that status dialog. Add a new entry, set the timestamp and value and save.	Users can change the Event Type and associated timestamps.	☐	☐
39	Event Audit – Location and Congestion	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and select the Audit Type of Event Location and Congestion. Press the Retrieve Data button. Attempt to move the last entry before the end of the event. Note the failure in that status dialog. Change the timestamp and location for one of the rows and save.	Users can change the Event Location and Congestion and associated timestamps.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
40	Event Audit – Lane Blockage	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and select the Audit Type of Lane Blockage. Press the Retrieve Data button. Attempt to move the first entry before the start of the event. Note the failure in that status dialog. Change the timestamp and lane blockage for one of the rows and save. Create at least 3 entries in the list. Attempt to move one of the entries before the time of the previous entry. Note the failure in that status dialog. Add a new entry, set the timestamp and value and save.	Users can change the Lane Blockage and associated timestamps.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
41	Event Audit – Vehicle Dispatch	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id WITH ROAD RANGER DISPATCHES and select the Audit Type of Vehicle Dispatch. Press the Retrieve Data button. Attempt to move the dispatch time of the first entry before the start of the event. Note the failure in that status dialog. Change the Arrival and Departure timestamp for one of the rows and save. Add a new activity to a Vehicle. Save.	Users can change the timestamps for Vehicle Dispatches.	☐	☐
42	Event Audit – Responder Times	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and select the Audit Type of Responder Times. Press the Retrieve Data button. Attempt to move the Notified time of the first entry before the start of the event. Note the failure in that status dialog. Change the Notified, On Scene, and Departure timestamp for one of the rows and save.	Users can change the timestamps for Responders actions.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
43	Event Audit – Vehicles Involved	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and HAS INVOLVED VEHICLES and select the Audit Type of Vehicles Involved. Press the Retrieve Data button. Change the information for an existing involved vehicle. Add a new involved vehicle. Delete and involved vehicle.	Users add, modify, or delete Involved Vehicles.	☐	☐
44	Event Audit – Event Comment	Using the Operator Map, open the Event Audit dialog by selecting the Audit Event ribbon icon from the Event List Dialog. Make sure there is a valid CLOSED event id and HAS EVENT COMMENTS and select the Audit Type of Event Comment. Press the Retrieve Data button. Add a new event Comment.	Users may add Comments.	☐	☐

	Dialog Name	Test Steps	Expected Result	P	F
45	Event Details Layout Configuration	Ensure the default Layout is set and saved. Select the LEFT option for fixed section and add any item(s). Select the RIGHT option for fixed section and add any item(s). Select the TOP option for fixed section and add any item(s). Select the BOTTOM option for fixed section and add any item(s). Add a section and add any item(s). Save the Layout and view the results. Switch to a tab view and save the layout. Switch back to the List View and rearrange some the items in the sections using the Move Up and Move Down ribbon icons. Save and view the results. Use the Reset to Default ribbon icon to set the Layout back to the standard view. Save and view the results.	The first view should include fixed items on the left, right, top, and bottom. In the main body, there should be the standard sections and the newly created section. The second view should have the main body as a tab layout with the sections as the available tabs. The third view should have the main body as a List View and the items should be reordered. The last view should take the layout back to the current SunGuide layout.		

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19 IC-18: Footprints (FP)

2.19.1 Objectives

The objective of this integration case is to test Footprints issues fixed in this release.

2.19.2 Requirements to be Tested

Since these are bug fixes that violate existing requirements, new requirements are not necessary.

2.19.3 Test Approach

The following is a brief description of the test procedures that will be used to test this integration case:

- A workstation will run through different scenarios to test Footprints issues that have been resolved.
- Test cases will be run against a system with an Oracle database and a SQL Server database. In order to pass the test step, both systems must successfully execute the test step. Notes will be made if a test step fails indicating the system and type of failure.

2.19.4 Test Descriptions

The following sections detail the tests to be performed.

2.19.5 Footprints to be tested

- FP 3221 – Various SPARR App Crashes
- FP 3687 – Link Editing Dialog
- FP 3770 – Cameras are being removed from C2C
- FP 3536/3832 – Automatic Event Notification is flooding event with comments
- FP 3743 – Event creation sometimes locking up SunGuide
- FP 3856 – Improve behavior when trying to post a message w/ graphics to sign that does not have status
- FP 3662 – Operator Map crashes after a couple hours of use
- FP 3719 –Memory Utilization Growing in Operator Map
- FP 3790 – Detector Data Loss
- FP 3804 – Operator Map is always freezing
- FP 3865 – Unable to communicate with High Sierra RWIS devices
- FP 3866 – Blocked Turn Lanes do not move event into Active Events with Travel Lane Blockage section of EM List
- FP 3665 – MAS Reports Express Lanes Signs Permission Error
- FP 3712 – Update report templates to correctly handle worst blockage for turn lanes
- FP 3783 –Users getting kicked out of Sunguide/ SPARR issues as well

2.19.5.1 FP 3221 – Various SPARR App Crashes

Reporting District: TERL

We have had reports of various SPARR App crashes amongst the Road Rangers, particularly potential force closes/crashes while the app is in an idle state. (e.g. Road Ranger looks over at phone to see that app has reported a crash)

As we weren't sure what in particular was going on, or how commonplace it was, we picked a couple of Road Rangers to email device logs when it happened. I have bundled several of these and attached them, although don't know if they all represent the same issue. Request is to have these logs looked at to see if there might be a common issue between them, or if there is some further investigation that can be done.

All of the Road Rangers are currently using LG G3 devices on Verizon's network. The latest VZW firmware for the LG G3 is running Android 5.0; not entirely sure if the Road Rangers have updated all of the devices with the latest firmware, but at least some of them have.

The following sections detail the tests to be performed.

Subsystems Required

- AVL
- SPARR Driver

Devices Required

The following devices will be used during the test:

- Android Phone with SPARR App installed

Configuration Required

The following will be setup/configured before the test is performed:

- Phone should be connected to SPARR driver in an idle state.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	Leave SPARR Phone running in the background of the application. After several hours, resume the application.	App would crash.	App resumes at normal.	☐	☐
2.	Dispatch an event to the operator logged into the phone. Work the event from the phone and add multiple activities.	A notification would be sent for each update performed.	A notification is only sent for the initial dispatch.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.2 FP 3687 – Link Editing Dialog

Reporting District: District 6

I rarely use link editing, but was checking some links and discovered a number of issues. Rather than creating many FP issues, especially since it is likely that many of these are interrelated, I captured the information for all of them in one document, which is attached. This was tested with SG 6.2, but I think that this is how this has been working for a long time.

The following sections detail the tests to be performed.

Subsystems Required

- TSS

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	No test. This issue dealt with the dialog and filters which have be rewritten in this release and tested previously.	None	None	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.3 FP 3770 – Cameras are being removed from C2C

Reporting District: District 1

Issue Description

From Mark
The other day we were talking about how we've been seeing D1 cameras dropping out of the C2C inventory for no obvious reason. We thought it might be related to the "can publish" flag but now I don't think that's the case. I also thought this might be an artifact of the way I've been collecting the data but I think I'm seeing the same thing on FL511. Please see the attached for more detail and if you think we have a new issue here let me know and I'll open a footprint. I haven't heard anything from D1 about this.

Issue
The problem is actually that the deletePresetDescriptionResp from CCTV is actually being picked up generically as a delete response for that camera, which in turn removes it from the feed. I have made a quick fix for D1 that excludes that however every other district has the potential to encounter that issue. Luckily, I think a large portion of the districts lock down the changing of presets so this isn't a big issue.

I am going to be looking at a more complete fix before this is fully released. I will put in a FP issue to track this to completion.

The following sections detail the tests to be performed.

Subsystems Required

- CCTV
- C2C

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- Test Suite for capturing information from the C2C Publisher

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	View the full C2C CCTV status cache in the C2C Test Suite. Delete a preset from a camera. View the status in the C2C Test Suite.	CCTV was deleted from the C2C test feed.	CCTV cache remains unchanged.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.4 FP 3536/3832 – Automatic Event Notification is flooding event with comments

Reporting District: District 6

Issue Description

Since installing hot fix 4 for SunGuide 6.2 (automated executive notifications), we have observed two problems:

1. We are getting e-mail messages for events that do not meet the criteria (this was reported by e-mail yesterday) (Event 579654)
2. We are getting a barrage of comments inserted into the event chronology when executive notifications are justified. (Event 579765)

For 579654, the e-mail message was:

Sent: Tuesday, November 15, 2016 1:12 PM
To: TMC Ops Supervisors
Subject: SunGuide # 579654: SR-836, Westbound, Construction, Miami-Dade

SunGuide Event #: 579654
Time of Incident: 11/15/2016 12:11:10 PM Incident Type: Construction Facility Name: SR-836 Direction of Travel: Westbound Mile Post:
County: Miami-Dade
Facility Status: Exit Ramp Left Lane Blocked, Left Shoulder Open, Right Shoulder Open Estimated Duration of Closure:
*Fatalities: Unknown *This data is not recorded currently**
*Injuries: Unknown *This data is not recorded currently** *Number of Vehicles: 0 Types of Vehicles:*
*Facility Type: Unknown *This data is not recorded currently**
Narrative: Automatic Notification: An incident that has caused an interstate highway to be closed over 1 hour, 0 minutes has occurred.
*Response Action(s): Enter Response here *User Comments**

Event Chronologies for both attached

The following sections detail the tests to be performed.

Subsystems Required

- EM

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- SMTP server sould be properly configured.

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	Create an event that would not create an Executive Notification.	Emails were received.	No emails are received.	☐	☐
2	Create an event that would trigger an automatic Executive Notification.	Multiple Emails were received.	Only one email is received.	☐	☐
2	Create an event and trigger a manual Executive Notification.	Multiple Emails were received.	Only one email is received.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.5 FP 3743 – Event creation sometimes locking up SunGuide

Reporting District: District 1

Issue Description

Operators have reported that events being created will sometimes lock up SunGuide after clicking "Add Event" once details have been entered. This has happened from events created through FHP CAD alerts and also from events created through the "Add Event" button. SunGuide will freeze completely for some operators (knhntjh), and can only be closed through task manager. Other operators report having to close all SunGuide windows manually and relaunch SunGuide. When SunGuide locks up after event creation, it appears that no other users are affected. It also appears that sometimes the event will be created, although the creator of the event cannot see it until they've reloaded SunGuide - other operators can see the new event immediately. Affected users who have reported this issue are: knhntnb, knhntsb, and knhntjh

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The following sections detail the tests to be performed.

Subsystems Required

- EM

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	This not reproducible in the SwRI environment.			☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.6 FP 3856 – Improve behavior when trying to post a message w/ graphics to sign that does not have status

Reporting District: District 6

Issue Description

Operators have reported that events being created will sometimes lock up SunGuide after clicking "Add Event" once details have been entered. This has happened from events created through FHP CAD alerts and also from events created through the "Add Event" button. SunGuide will freeze completely for some operators (knhntjh), and can only be closed through task manager. Other operators report having to close all SunGuide windows manually and relaunch SunGuide. When SunGuide locks up after event creation, it appears that no other users are affected. It also appears that sometimes the event will be created, although the creator of the event cannot see it until they've reloaded SunGuide - other operators can see the new event immediately. Affected users who have reported this issue are: knhntnb, knhntsb, and knhntjh

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The following sections detail the tests to be performed.

Subsystems Required

- DMS
- MAS

Devices Required

The following devices will be used during the test:

- A simulated color DMS sign

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	Put the simulated DMS sign Out of Service. Place the DMS into service and note a poll message to the DMS in Status Log or on the GUI. Send a Graphic to the sign.	Graphic message would fail due to the DMS not having status yet.	Graphic message succeeds.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

FP 3662 – Operator Map crashes after a couple hours of use

Reporting District: CFX

Issue Description

FDOT D5 operators have reported CFX's operator map crashes every few hours, requiring them to close out and log back in. To get a better handle on this issue, I set up a script to log the current memory usage of the operator map and presentation host processes on the workstation that is logged into CFX SunGuide. The attached graph shows the memory usage of a period of about 2 days. Note that every time the memory usage drops is when the operator had to close out and log back in.

Their description of the issue is the map just "freezes" and the workstation does not respond to any clicks and they can't even close it - making the system inoperable for 10 to 15 minutes. When it recovers after 10 to 15 minutes, the map response very slowly, requiring them to close out of the map and log back in.

The following sections detail the tests to be performed.

Subsystems Required

- C2C

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	This was not reproducible in the SwRI environment.			☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.7 FP 3719 –Memory Utilization Growing in Operator Map

Reporting District: District 6

Issue Description

We have found that the Operator Map's memory utilization is growing over time and can be contributing to performance issues. We allowed one system to run for about 24 hours with the map open and it's memory utilization grew to 6.24 GB. When it first opens, Operator Map uses around 800-900 MB. Opening the event list seems to use about 15 MB each time and it appears that not all of that is recovered when garbage collection occurs. Opening an event from the event list grabs more memory.

When first opened, it appears that Operator Map's memory utilization is stable. However, after opening the event list, the memory utilization starts to grow steadily, even if the event list is closed. I saw 20KB-40KB per second growth after closing the event list. Some of that was eventually reclaimed, but not all, and the memory utilization grew by about 300-400 MB over a half hour (although I did open and close event lists and events during that time, which accounted for some of that).

We are running Nokia and BMS, which we weren't using until relatively recently, but we didn't notice this when we started first using those.

The following sections detail the tests to be performed.

Subsystems Required

- C2C

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	Initiate a sequence that causes C2C to get into a constant connect/disconnect state. View the icons flashing on the operator map. View the executable memory in task Manager and verify the memory is not constantly increasing.	Memory would continually increase and lock up the Operator Map.	Memory usage is stable.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.8 FP 3790 – Detector Data Loss

Reporting District: District 6

Issue Description

We are experiencing excessive data loss (dropped 20 second samples) from two detectors: FLD6DOT095SB015.1-DS (ID=1475) and FLD6DOT095SB015.2-DS (ID=1476). These are both WavetronixHD detectors. Another detector of the same type in the same area of I-95 SB, FLD6DOT095SB014.3-DS, is experiencing typical data loss (< 1%). SB15.2 is exhibiting a loss of about 10% of poll samples and SB15.1 is experiencing a loss of about 20%. These vary, but remain within a small range. I compared the SunGuide configuration for 14.3, 15.1 and 15.2 and they are the same.

The contractor ran the vendor software and gather data for a few hours without any lost samples. We don't know if they use a push or pull to get data, but have asked.

I ran a ping test to SB 15.1 and didn't observe any network disruptions.

The SunGuide log reports failures to receive a valid detector update for 15.1 (1475), but does not report failures for 15.2 from 12:00-15:00 today in which we dropped about 20% of the 15.1 samples and about 10% of the 15.2 samples. During that same period, we dropped less than 1% of the 14.3 samples.

These are not the same as what we observed in June. They are not just the highest zones that we are losing; we are losing the same number of samples for each lane.

The attached spreadsheets contains polling data from the three detectors. The attached log file contains the log data covering the same time period.

We would appreciate any suggestions as to how we could proceed to resolve this issue. It is not clear where the problem may be. The lack of any indication in the log file of lost data for 15.2 doesn't seem right when we are dropping 10% of the samples, unless it is due to the distribution of the dropped samples and a filter that requires multiple successive drops.

The following sections detail the tests to be performed.

Subsystems Required

- TSS and RTMS Driver

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	This was not reproducible in the SwRI environment because the issue was only reproducible when packets were delivered 2-3 bytes at a time.			☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.9 FP 3804 – Operator Map is always freezing

Reporting District: District 4

Issue Description

This is related to FP 3743 3719. When the operators are working on event, RPG,editing emails and they try to respond to a VisioPad Alert, it will freeze up their operatorMap. Now they won't answer an alert if they are actively working an event.

The Map has become very unresponsive since we moved to 6.2. They have to close it and log back in again. It could be because of the C2C connection to D6 that require me to recycle the app pool(3719) or just trying to add an event would just freeze it (3743).

The following sections detail the tests to be performed.

Subsystems Required

- IDS

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	This was not reproducible in the SwRI environment.			☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.10 FP 3865 – Unable to communicate with High Sierra RWIS devices

Reporting District: District 2

Issue Description

We appear to have an issue with several of our RWIS devices since moving to 6.2, in that they constantly go to error/failed state. It appears that it is specific to certain devices, and from what we can tell the failed devices are all High Sierra devices. (Our other Lufft devices seem to be working, where applicable)

Unfortunately, this accounts for all of our Paynes Prairie/Fog devices, which is of major concern to our operations, as we need these for early warning.

The following sections detail the tests to be performed.

Subsystems Required

- None

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	Navigate to the RWIS driver executable directory. Check the version of both the NetToolWorks.dll and the NetToolWorks.Snmp.dll.	Version was different than 1.4.2.0.	Version is 1.4.2.0.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.11 FP 3866 – Blocked Turn Lanes do not move event into Active Events with Travel Lane Blockage section of EM List

Reporting District: District 2

Issue Description

Operators noted that active events with only turn lane blockage remain in the "Active Events without Travel Lane Blockage" section of the Event List. See attached image (affected event is at the bottom).

The following sections detail the tests to be performed.

Subsystems Required

- EM

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	Create and event and block a turn lane. View the event list and the section header for the event.	Event was listed under “Active Events without Travel Lane Blockage”	Event was listed under “Active Events with Travel Lane Blockage”	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.12 FP 3665 – MAS Reports Express Lanes Signs Permission Error

Reporting District: District 6

Issue Description

System messages showed:

mas
14:52:24 -- 6-1-2016
Queue failed for device 'TEST RGB SIGN:953:dms:dms:District 6': Express Lanes user does not have Express Lanes sign control permission to terminate message on DMS

The log showed:
Application: DmsXmlInterface
Message: Express Lanes user does not have Express Lanes sign control permission to terminate message on a DMS

Two issues:
1. MAS does not manage EL signs, so this message should appear in System Messages as coming from DMS, as it does in the log.
2. The message does not identify the user, which makes it really hard to try to find the user that may or may not need permissions changed.

The following sections detail the tests to be performed.

Subsystems Required

- PS
- DMS

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	Change a DMS sign from a General Use to a Toll Lane Status without restarting MAS. Attempt to send a message to the DMS.	Log message for missing permission did not specify the user.	Log message is no longer necessary as the dialog warns the user.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.13 FP 3712 – Update report templates to correctly handle worst blockage for turn lanes

Reporting District: District 6

Issue Description

Per FP3620, it appears that the worst lane blockage parameter is not working in reports. This issue is to track the effort to update the report templates.

The following sections detail the tests to be performed.

Subsystems Required

- RS
- EM

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	For the list of reports below, create and event (or use and existing one). Block a turn lane and run the reports. -Agency Response Times Report -Event Chronology -Event Details -Event Lane Blockage Report -Event Level Report -Event List -Event List with Lane Blockage -Event Response Times Report -Event Summary Report -FHP Request -Lane Closure Report -Notifier Contact Summary -QAR DMS Safety Message Campaign -Ramp Event List -Road Ranger Assists -Road Ranger Response Times QA Report -Road Ranger Void Activity Report -Secondary Crash Report -Secondary Event Report -SIRV Assists -WWD Report	Worst Lane Blockage did not take into account Turn Lanes	Report Takes into account Turn Lanes.	☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.19.5.14 FP 3783 –Users getting kicked out of Sunguide/ SPARR issues as well

Reporting District: District 3

Issue Description

Hi

Starting last night (5am) users in D3 are having major issues with Sunguide.

They are all getting kicked out at the same time - and have to login.

Also - the SPARR app stopped working for all the road rangers.

I covered the network side of the system - and there are no issues there (looking at switch and router logs to ensure interfaces do not drop or take errors).

I see quite a few critical errors in the event viewer for both nodes (10.164.0.2 and 10.164.0.3) in the cluster.

Please investigate.

The following sections detail the tests to be performed.

Subsystems Required

- None

Devices Required

The following devices will be used during the test:

- None

Configuration Required

The following will be setup/configured before the test is performed:

- None

Test Procedure

Test Start Date / Time	

Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	The issue that was involved here was that DMS was unable to start due to a Java call that was hanging on startup. This caused the whole startup sequence to fail. We were able to get around that one call so that it didn't halt startup. This was not reproducible at SwRI.			☐	☐

Test End Date & Time	
FDOT Witness	
SwRI Witness	

3. Notes