

SunGuide®:

Software Integration Case Procedures

SunGuide-SICP-7.2



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
7.2-Draft	July 23, 2019	Initial release for Release 7.2 functionality

1. Scope

1.1 Document Identification

This document serves as the Software Integration Plan (SIP) for Release 7.2 of the SunGuide® software. This version is implementing:

- Monitor and Regulate DMS Fonts (3568)
- Links on Map – Part 4 (2736)
- Audit Chronology (1422)
- Case Sensitivity in Object Names (2963)
- Planned Events (3860)
- Roadway Naming (Primary/Secondary) (3848)
- ICMS Integration Changes (4329)
- Event List Row Height (4301)
- Permanent Status Filter (4302)
- Color/Non Color Signs in SAS (3986)
- Generic Feature Subsystem (4577)
- Executive Notifications (4015)
- EM Intersections (4187)
- WWD Crash Descriptor (4650)

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 BE492, addresses the necessity of supporting, maintaining and performing enhancement development efforts to the SunGuide software. The SunGuide software has been in develop by the FDOT since October 2003 with seven major releases and multiple minor releases. 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:

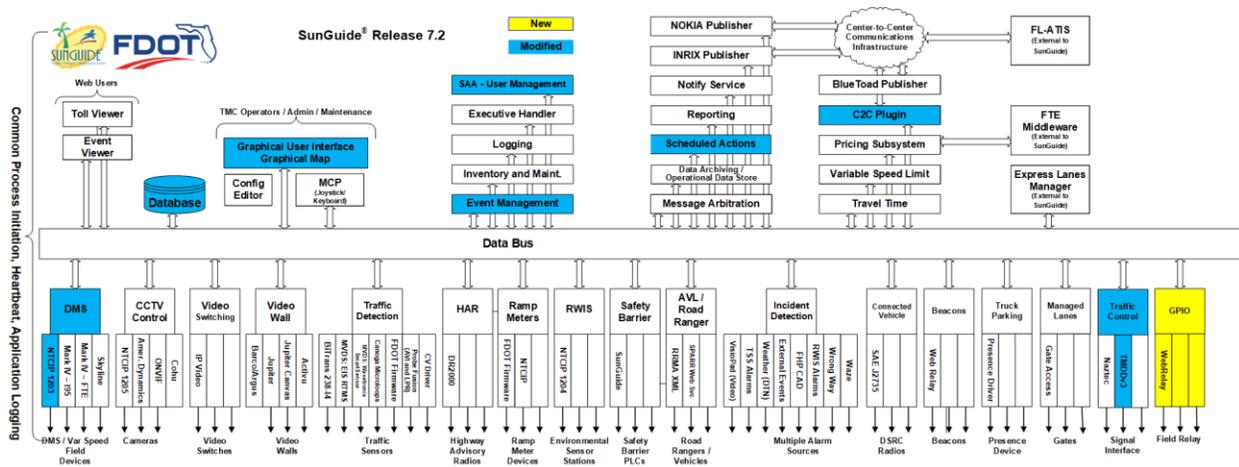


Figure 1-1 - High-Level Architectural Concept

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: *BE492, Standard Written Agreement for SunGuide Software Support, Maintenance, and Development, Exhibit A: Scope of Services*. December 14, 2017.
- Notice to Proceed: Letter to Southwest Research Institute® (SwRI®) for BE492, December 14, 2017
- Letter of Authorization 005: Letter to SwRI for BE492, May 7, 2018.
- Letter of Authorization 005 Supplement 1: Letter to SwRI for BE492, March 21, 2019.
- SunGuide Project website: <http://sunguidesoftware.com>.

1.4 Contacts

The following are contact persons for the SunGuide software project:

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- Christine Shafik, ITS Section, TSM&O, Central Office, Christine.Shafik@dot.state.fl.us, 850-410-5615
- Frances Ijeoma, HNTB Project Manager, frances.ijeoma@dot.state.fl.us, 850-410-5623
- Tucker Brown, SwRI Project Manager, tbrown@swri.org, 210-522-3035
- Roger Strain, SwRI Software Project Manager, rstrain@swri.org, 210-522-6295

2. Test Descriptions

The requirements contained in the following sections were extracted from the Software Requirements Specification (SRS), identifier: SunGuide-SRS-7.2.

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: Monitor and Regulate DMS Fonts (3568)
- IC-2: Links on Map – Part 4 (2736)
- IC-3: Audit Chronology (1422)
- IC-4: Case Sensitivity in Object Names (2963)
- IC-5: Planned Events (3860)
- IC-6: Roadway Naming (Primary/Secondary) (3848)
- IC-7: ICMS Integration Changes (4329)
- IC-8: Event List Row Height (4301)
- IC-9: Permanent Status Filter (4302)
- IC-10: Color/Non Color Signs in SAS (3986)
- IC-11: Generic Feature Subsystem (4577)
- IC-12: Executive Notifications (4015)
- IC-13: EM Intersections (4187)
- IC-14: WWD Crash Descriptor (4650)
- IC-15: JIRA Issues

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 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 7.2 testing. All testing will be completed against a SunGuide server with a SQL Server database. Note that each integration case uses the same hardware setup so this diagram is not duplicated at the beginning of each test case.

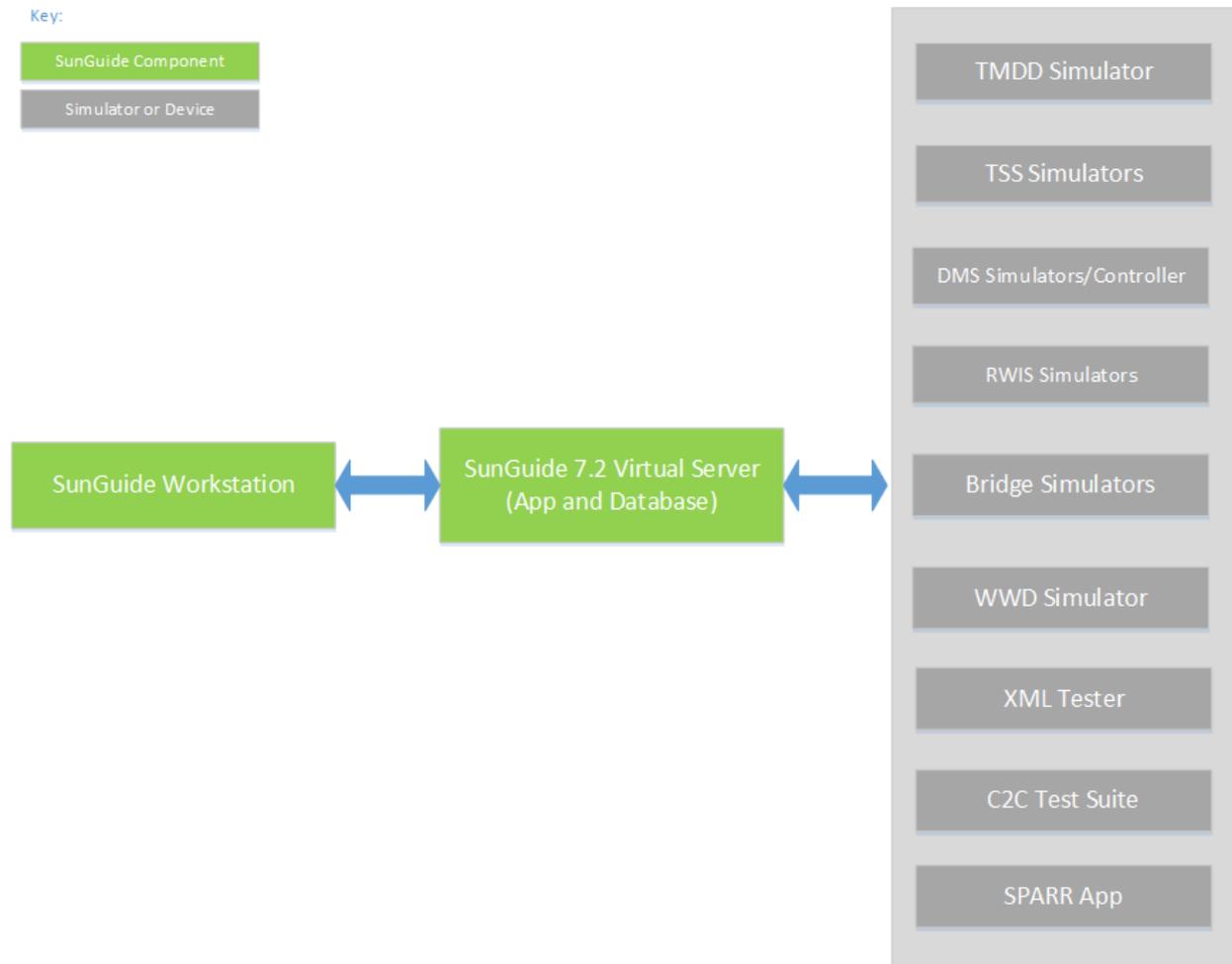


Figure 2-1. Hardware/Software Testing Environment

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 applications¹.

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

Software Installation	SunGuide Application Server	SunGuide Database Server	Workstation
Minimum of Windows 2016 Server with current service packs and hot fixes	✓	✓	
IIS	✓		
SQL Server		✓	
SunGuide Software	✓		
Windows 7			✓
SQL Server Management Studio		✓	
Status Logger (SL) Viewer	✓		
Executive Handler Viewer	✓		
TSS Simulator	✓		
DMS Simulator	✓		
RWIS Simulator	✓		
Bridge Simulator	✓		
C2C Test Suite	✓		
TMDD Simulator	✓		
WWD Simulator	✓		
XML Tester	✓		

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: Monitor and Regulate DMS Fonts (3568)

2.2.1 Objectives

The objective of this integration case is to test the ability of the system to retrieve and set DMS Fonts configuration on an NTCIP sign. This will also test the ability of the system to set the font to use as part of a DMS message.

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: DMS Font Requirements

RMsis ID	Requirement Text
SG-R3647	For NTCIP DMS devices, SunGuide software will allow approved users to configure up to four fonts to be available when sending messages to the device.
SG-R3648	For NTCIP DMS devices, SunGuide software will allow approved users to configure one of the four fonts to be the default value used when sending messages to the device.
SG-R3649	For NTCIP DMS devices, SunGuide software will allow approved users to download the character data and font information from the device to a file that can later be imported.
SG-R3650	For NTCIP DMS devices, SunGuide software will allow approved users to upload previously exported character data and font information from a binary file to the device.
SG-R3651	SunGuide software will warn the user and obtain confirmation if uploading font data to a device will overwrite the font data for that row in the table
SG-R3652	After uploading font data to a device, SunGuide software will immediately re-query the device to ensure all data has uploaded correctly and completely
SG-R3653	For NTCIP DMS devices, SunGuide software will store the SunGuide sort order (1-4), whether it is the default font, fontNumber, fontName, fontHeight, fontCharSpacing, fontLineSpacing, and fontVersionID for each device
SG-R3654	SunGuide software will always include a font tag and font version id when sending a message to an NTCIP DMS device
SG-R3655	SunGuide software will allow a user to select from up to four fonts when sending messages to an NTCIP DMS device
SG-R3656	If no font is provided, SunGuide software will use the configured default font when sending a message to an NTCIP DMS device
SG-R3657	For NTCIP DMS devices, SunGuide software will allow approved users to retrieve, compare, and auto-configure the device configuration for the following values: sign type, sign technology, width, height, whether the sign support color, and whether the sign supports graphics
SG-R3659	When refreshing status of NTCIP DMS devices, SunGuide software will retrieve the following data: dmsGraphicMaxEntries, dmsColorScheme, dmsSignType, dmsSignTechnology, vmsSignHeightPixels, vmsSignWidthPixels, defaultFont that is used for MULTI messages
SG-R3660	The following data from the font table will also be retrieved for all configured

	fonts in SunGuide: fontNumber, fontName, fontHeight, fontCharSpacing, fontLineSpacing, and fontVersionID
SG-R3661	If SunGuide software determines that the retrieved NTCIP DMS configuration differs from the previously retrieved NTCIP DMS configuration, the software will transition the DMS to an Error state and notify the user of the discrepancy including: sign type, sign technology, width, height, whether the sign support color, and whether the sign supports graphics, and any font discrepancies.
SG-R3663	SunGuide software will always include a font tag when sending a message that was generated from a template to an NTCIP DMS device
SG-R3664	SunGuide software will use the default font for an NTCIP DMS device when sending a message generated from a non-device-specific template.
SG-R3665	SunGuide software will allow a user to select a font for a device-specific template if the device is an NTCIP DMS
SG-R3666	If a user-selected font is specified, SunGuide software will use the user-selected font when sending a message generated from a device-specific template to an NTCIP DMS device.
SG-R3667	If no user-selected font is specified, SunGuide software will use the default font for an NTCIP DMS device when sending a message generated from a device-specific template.
SG-R3669	An external utility will be created to retrieve extended DMS configuration from NTCIP DMS devices
SG-R3670	The external utility will be able to retrieve the following DMS device information from SunGuide: name, host, port, device address, protocol, sign type, sign technology, width, height, whether the sign support color, and whether the sign supports graphics
SG-R3671	The external utility will be able to retrieve the following data from NTCIP DMS devices: dmsGraphicMaxEntries, dmsColorScheme, dmsSignType, dmsSignTechnology, vmsSignHeightPixels, vmsSignWidthPixels, defaultFont that is used for MULTI messages
SG-R3672	The external utility will be able to retrieve the following data from the font table for the defaultFont index: fontNumber, fontName, fontHeight, fontCharSpacing, fontLineSpacing, and fontVersionID
SG-R3673	The external utility will be able to retrieve the following data from the character table on NTCIP devices for the defaultFont index: characterNumber, characterWidth, and characterBitmap
SG-R3674	For NTCIP DMS devices, the external utility will allow users to compare and auto-configure the device configuration for the following values: sign type, sign technology, width, height, whether the sign support color, and whether the sign supports graphics
SG-R3675	The external utility will store the collected DMS configuration data and font data to an external file
SG-R3676	The external utility will store the collected character table data for each unique font version to a XML file that can later be imported
SG-R3677	The external utility will allow a user to update the configuration of a DMS sign based on the retrieved configuration.

2.2.3 Test Approach

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

- Using the DMS NTCIP simulator, the user will both retrieve and set fonts on a DMS sign. In addition, the user will send messages to the sign using a variety of fonts configured for the sign.

2.2.4 Test Descriptions

Subsystems Required

- DMS
- MAS
- Operator Map
- DMS Configuration Tool

Devices Required

The following devices will be used during the test:

- DMS Simulator
- DMS Controller

Configuration Required

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

- Simulators and devices should be configured to provide data

Test Procedure

Test Start Date / Time	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3657	<p>Open the DMS Configuration dialog and fill out the fields required to start the auto configuration (IP, port, protocol, community names). Select the auto configuration option. Select the Update Configuration button.</p> <p>View the updated fields and compare to the configuration information from the DMS. Fill out other required information.</p> <p>Confirm the default font selected by SunGuide as well as the one configured on the sign.</p> <p>Save the sign configuration.</p>	<p>Sign type, sign technology, width, height, whether the sign support color, and whether the sign supports graphics will be auto-filled.</p> <p>Signs default font is configured and the DMS is added.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
2	SG-R3657 SG-R3648 SG-R3647 SG-R3649 SG-R3650 SG-R3651 SG-R3652	<p>For a sign that has multiple fonts, open the font configuration.</p> <p>Retrieve the available fonts and set up to 4 fonts. Select one of the fonts as the default font.</p> <p>Chose to store a font to file and note the file format.</p> <p>Ensure the DMS driver is in details mode. Upload the font from a file and push the font to a sign. Note the warning. After the font is updated, view the status log and confirm the sign status was re-query. Look for the messages “data matches requested data”.</p>	<p>The user is able to set up to 4 fonts and a default font.</p> <p>Users can save a font to file.</p> <p>Users can upload a font from a file. If overwriting a font, the user is notified.</p> <p>After a font is uploaded, the software checks to make sure it successfully made it to the sign.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3653	<p>For the configured sign, check the following fields in the database for each configured font (DMS_FONT and DMS_FONT_DATA): Sort order (1-4), whether it is the default font, fontNumber, fontName, fontHeight, fontCharSpacing, fontLineSpacing, and fontVersionID</p>	<p>The font characteristics are saved in the data base.</p>	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3654 SG-R3655	<p>Ensure DMS driver is in Detail mode.</p> <p>For the configured sign, view the Send message dialog. Note the options for choosing a font.</p> <p>Choose a font and send a message to the sign. View Status Logger and confirm the font tag and font version id were sent.</p>	<p>User is able to set a font to use. The font tag and font version id are sent with the multi message to the sign.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SG-R3656	<p>For the configured sign, view the Send message dialog. Note the options for choosing a font.</p> <p>Do not choose a font and send a message to the sign. View Status Logger and confirm the font tag and font version id were sent.</p>	<p>User is not able to not choose a font. The font tag and font version id for the default font are sent with the multi message to the sign if no font is selected.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
6	SG-R3659 SG-R3660	<p>Ensure DMS driver is in Detail mode.</p> <p>Set the poll cycle on a sign for 1 minute and wait for the poll cycle to occur.</p> <p>Use the "Get Log" feature of the simulator to review the data requested.</p>	<p>SunGuide software will retrieve the following data: dmsGraphicMaxEntries, dmsColorScheme, dmsSignType, dmsSignTechnology, vmsSignHeightPixels, vmsSignWidthPixels, defaultFont that is used for MULTI messages.</p> <p>For Fonts, the software gets fontNumber, fontName, fontHeight, fontCharSpacing, fontLineSpacing, and fontVersionID</p>	<input type="checkbox"/>	<input type="checkbox"/>
7	SG-R3661	<p>Change the controller a configured DMS is pointed to. Wait until the DMS is polled.</p> <p>Note the notification to the user and the ability to resolve the error.</p>	Users are notified of changes in configuration and are able to resolve them via the DMS config dialog.	<input type="checkbox"/>	<input type="checkbox"/>
8	SG-R3663 SG-R3664	In, EM, generate an automatically suggested response plan and note the multi that would be sent to a DMS that uses the generic template and the default font.	Default font information is used for templated messages.	<input type="checkbox"/>	<input type="checkbox"/>
9	SG-R3663 SG-R3665 SG-R3666	<p>In EM, create a device specific template including a font and set it for a DMS sign.</p> <p>Generate a response plan that would invoke that template.</p> <p>Note the multi that would be sent to the DMS.</p>	The font tag is generated as part of a device specific message template.	<input type="checkbox"/>	<input type="checkbox"/>
10	SG-R3663 SG-R3665 SG-R3666	<p>In EM, create a device specific template without setting a font and set it for a DMS sign.</p> <p>Generate a response plan that would invoke that template.</p> <p>Note the multi that would be sent to the DMS.</p>	The default font tag is generated as part of a device specific message template.	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
11	SG-R3663 SG-R3665 SG-R3666	<p>In TvT, use a pre-made template and select a sign that has configured fonts. Configure the message to be sent with the non-default font.</p> <p>Note the message generated by TvT and ensure it uses the font specific tags.</p> <p>Change the template to use the default font.</p> <p>Note the message generated by TvT and ensure it uses the default font.</p>	<p>Font information is sent in device specific templates.</p>	<input type="checkbox"/>	<input type="checkbox"/>
12	SG-R3669 SG-R3670 SG-R3671 SG-R3672 SG-R3673 SG-R3674 SG-R3675 SG-R3677	<p>Using the external font tool, get the SunGuide and NTICP configuration for a DMS sign using the GetAllConfigs command.</p> <p>View the discrepancies in the report via the Verify command. Select the "U" option (Update in database) and update the configuration of at least 1 sign in SunGuide.</p>	<p>The tool will retrieve name, host, port, device address, protocol, sign type, sign technology, width, height, whether the sign support color, and whether the sign supports graphics from SunGuide</p> <p>The tool will retrieve dmsGraphicMaxEntries, dmsColorScheme, dmsSignType, dmsSignTechnology, vmsSignHeightPixels, vmsSignWidthPixels, defaultFont for the sign.</p> <p>For the default font, the tool will retrieve : fontNumber, fontName, fontHeight, fontCharSpacing, fontLineSpacing, and fontVersionID as well as characterNumber, characterWidth, and characterBitmap</p>	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
13	SG-R3676	Using the external tool, save the font data to an external file using the GetFont command. Use the Operator Map to import the Font into the sign in SunGuide.	Fonts can be saved to an external file.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.3 IC-2: Links on Map – Part 4 (2736)

2.3.1 Objectives

The objective of this integration case is to test the ability of the system to view the Operator Map to confirm the behavior of the system when there are multiple overlapping TSS Links.

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: Links on Map Requirements

RMsis ID	Requirement Text
SG-R3609	When hovering over multiple traffic links, the SunGuide software will display each link's name, lane level speed, occupancy, and volume in the pop up hover text.
SG-R3610	A link in an error state will display N/A in its hover text.
SG-R3611	The SunGuide software will allow the user to configure whether or not the installation will populate multiple links in the hover text.

2.3.3 Test Approach

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

- Using a TSS Simulator, the hovertext in an area where overlapping TSS links will be examined.

2.3.4 Test Descriptions

Subsystems Required

- TSS
- Operator Map

Devices Required

The following devices will be used during the test:

- TSS Simulator

Configuration Required

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

- Simulators and devices should be configured to provide data

Test Procedure

Software Integration Case Procedures

Test Start Date / Time	
-------------------------------	--

Perform the following steps from a workstation:

	RMSis ID	Test Steps	Expected Result	P	F
1	SG-R3609 SG-R3611	Ensure the configuration would allow a user to see multiple links in the hover text. Find an area on the map where 2 or more TSS links overlap. Hover over a spot where the links overlap.	The user should be able to view each link's name, lane level speed, occupancy, and volume in the pop up hover text.	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3610	Stop simulating the TSS Links and ensure the TSS links go to an Error state. Find an area on the map where 2 or more TSS links overlap. Make sure at least one of the links is in the Error state. Hover over the spot where the links overlap.	The user should see "N/A" for the links in the Error state.	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3611	Start simulating the TSS Links and ensure the TSS links go to an Active state. Ensure the configuration would NOT allow a user to see multiple links in the hover text. Find an area on the map where 2 or more TSS links overlap. Hover over a spot where the links overlap.	The user should see the information for the top link.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.4 IC-3: Audit Chronology (1422)

2.4.1 Objectives

The objective of this integration case is to test the output of the chronology when an audit is performed.

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: Audit Chronology Requirements

RMsis ID	Requirement Text
SG-R3603	SunGuide software will enter AUDIT records into event chronology at the time the audit is performed.
SG-R3604	SunGuide software will indicate what record was modified by referencing the record type, the timestamp of the record, and the user
SG-R3605	If the modified field is a timestamp, the SunGuide software will indicate the original time and the new time of the record.
SG-R3606	If the modified field is a value, the SunGuide software will indicate the original value and the new value of the record being audited.
SG-R3607	If inserting a new row, the SunGuide software will indicate if the audit being performed is inserting a new record into the chronology.
SG-R3863	If deleting a row, the SunGuide software will indicate if the audit being performed is deleting a record into the chronology

2.4.3 Test Approach

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

- Multiple audits will be performed and the audit entries in the chronology will be examined.

2.4.4 Test Descriptions

Subsystems Required

- EM
- 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	
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Perform the following steps from a workstation:

	RMSis ID	Test Steps	Expected Result	P	F
1	SG-R3603 SG-R3604 SG-R3605	<p>Create an event or select one that has previously been created. Make sure the event has a responder that has been notified, has an on-scene time, and was departed.</p> <p>Audit any of the vehicle responder timestamps for the responder. Note the time you are performing the audit and Save.</p> <p>View the Event Chronology.</p>	<p>An AUDIT record is inserted at the time the audit was performed.</p> <p>The audit record will include the record type, the timestamp of the record, and the user.</p> <p>The audit record will include the original value and original time and the new time of the record.</p>	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3603 SG-R3604 SG-R3606	<p>Create an event or select one that has previously been created.</p> <p>Using the audit, modify any of the event status (but not the time). Note the time you are performing the audit and Save.</p> <p>View the Event Chronology.</p>	<p>An AUDIT record is inserted at the time the audit was performed.</p> <p>The audit record will include the record type, the timestamp of the record, and the user.</p> <p>The audit record will include the original value and the new value of the record being audited.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3603 SG-R3604 SG-R3607	<p>Create an event or select one that has previously been created.</p> <p>Using the audit, add an event type change between the start time of the event and the end time of the event. Note the time you are performing the audit and Save.</p> <p>View the Event Chronology.</p>	<p>An AUDIT record is inserted at the time the audit was performed.</p> <p>The audit record will include the record type, the timestamp of the record, and the user.</p> <p>The audit record will indicate a new row is being added.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
4	SG-R3603 SG-R3604 SG-R3863	<p>Create an event or select one that has previously been created.</p> <p>Using the audit, delete an event status change between the start time of the event and the end time of the event. Note the time you are performing the audit and Save.</p> <p>View the Event Chronology.</p>	<p>An AUDIT record is inserted at the time the audit was performed.</p> <p>The audit record will include the record type, the timestamp of the record, and the user.</p> <p>The audit record will indicate a new row is being added.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.5 IC-4: Case Sensitivity in Object Names (2963)

2.5.1 Objectives

The objective of this integration case is to test the ability of the system to validate the input for the names of devices and other SunGuide object to ensure case sensitivity.

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: Case Sensitivity Requirements

RMsis ID	Requirement Text
SG-R3620	SunGuide software will enforce case insensitive uniqueness for the name of configuration items.
SG-R3621	If the item has a short name and long name, the uniqueness shall be enforced on the short name.
SG-R3622	This will apply to the following configuration items: -- BMS: Beacons -- Cctv: Cameras, Tours, Presets -- Cvs: RSE devices -- DMS: Fonts, Graphics, Manufacturers, Groups, Message Libraries, Signs, Approved Words -- EM: Abbreviations, Activities, Agencies, Contacts, Comment Types, Event Details Layout (section name), Event Statuses, Event Types, Injury Types, Locations (Counties, Lane Map, Lane Type, Location, Reference Points, Roadways), Mail Lists, Organizations, Procedural Errors, Response Plans, Message Templates, Vehicles Tracking (Color, State, Make/Model, Type), Weather Conditions -- Floodgates -- HAR: HAR Devices -- IDS: Citilog Cameras, Wrong Way Devices -- MLS: Action List Templates, Action Templates, Controllers, Gates, Managed Roads, Ramps, Segments -- Manufacturers -- Map Views -- RWIS: Stations -- RMS: Controllers -- Reports: Reports, Report groups -- Responders: Availability Status, Beats, Geofences, Operators, Radios, Telephones, Vehicle Agencies, Vehicles -- Safety Barriers -- Scheduled Actions: Schedules, Scheduled Items -- TSS: Detectors, Links -- Traffic Signal Routes -- TVT: Destinations, Message Templates, Travel Time Links -- Truck Parking Facilities -- VS: Video Destination, Video Source, Video Tours, Virtual Walls, Workstations

2.5.3 Test Approach

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

- Each of the configuration dialogs will be tested to ensure they validate the names of devices to be case sensitive.

2.5.4 Test Descriptions

Subsystems Required

- All device subsystems
- Operator Map

Software Integration Case Procedures

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	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3620 SG-R3621 SG-R3622	Open the Beacon configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3620 SG-R3621 SG-R3622	Open the Camera configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3620 SG-R3621 SG-R3622	Open the Camera Tour configuration dialog. Using an existing tour, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3620 SG-R3621 SG-R3622	Open the Camera Preset configuration dialog. Using an existing preset. add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
5	SG-R3620 SG-R3621 SG-R3622	Open the RSE Device configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
6	SG-R3620 SG-R3621 SG-R3622	Open the DMS Font configuration dialog. Using an existing font, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
7	SG-R3620 SG-R3621 SG-R3622	Open the DMS Graphics configuration dialog. Using an existing graphic, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
8	SG-R3620 SG-R3621 SG-R3622	Open the DMS Manufacturers configuration dialog. Using an existing manufacturer, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
9	SG-R3620 SG-R3621 SG-R3622	Open the DMS Groups dialog. Using an existing group, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
10	SG-R3620 SG-R3621 SG-R3622	Open the DMS Message Library configuration dialog. Using an existing library message, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
11	SG-R3620 SG-R3621 SG-R3622	Open the DMS Sign configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
12	SG-R3620 SG-R3621 SG-R3622	Open the DMS Approved Words configuration dialog. Using an existing word, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
13	SG-R3620 SG-R3621 SG-R3622	Open the EM Abbreviations configuration dialog. Using an existing abbreviation, add a new item with a case insensitive name.	Dialog actually needs to be case sensitive due to the way abbreviations are done in code.	<input type="checkbox"/>	<input type="checkbox"/>
14	SG-R3620 SG-R3621 SG-R3622	Open the EM Activity configuration dialog. Using an existing activity, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
15	SG-R3620 SG-R3621 SG-R3622	Open the EM Agency configuration dialog. Using an existing agency, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
16	SG-R3620 SG-R3621 SG-R3622	Open the EM Agency Contact configuration dialog. Using an existing contact, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
17	SG-R3620 SG-R3621 SG-R3622	Open the EM Comment Type configuration dialog. Using an existing comment type, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
18	SG-R3620 SG-R3621 SG-R3622	Open the Event Details Layout configuration dialog. Using an existing section, add a new section with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
19	SG-R3620 SG-R3621 SG-R3622	Open the Event Status configuration dialog. Using an existing status, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
20	SG-R3620 SG-R3621 SG-R3622	Open the Injury Type configuration dialog. Using an existing type, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
21	SG-R3620 SG-R3621 SG-R3622	Open the EM County configuration dialog. Using an existing county, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
22	SG-R3620 SG-R3621 SG-R3622	Open the EM Lane Map configuration dialog. Note there is no user editable text in the dialog.	Dialog has nothing to test. This case is just to confirm the dialog was investigated and found to be compliant.	<input type="checkbox"/>	<input type="checkbox"/>
23	SG-R3620 SG-R3621 SG-R3622	Open the EM Lane Type configuration dialog. Using an existing type, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
24	SG-R3620 SG-R3621 SG-R3622	Open the EM Location configuration dialog. Using an existing location, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
25	SG-R3620 SG-R3621 SG-R3622	Open the EM Reference Point configuration dialog. Using an existing reference point, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
26	SG-R3620 SG-R3621 SG-R3622	Open the EM Roadways configuration dialog. Using an existing roadway, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
27	SG-R3620 SG-R3621 SG-R3622	Open the EM Email Lists configuration dialog. Using an existing list, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
28	SG-R3620 SG-R3621 SG-R3622	Open the EM Organizations configuration dialog. Using an existing organization, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
29	SG-R3620 SG-R3621 SG-R3622	Open the EM Procedural Error configuration dialog. Using an existing error, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
30	SG-R3620 SG-R3621 SG-R3622	Open the EM Response Plan Message Template configuration dialog. Using an existing template, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
31	SG-R3620 SG-R3621 SG-R3622	Open the EM Vehicle Color configuration dialog. Using an existing color, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
32	SG-R3620 SG-R3621 SG-R3622	Open the EM Vehicle State configuration dialog. Using an existing state, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
33	SG-R3620 SG-R3621 SG-R3622	Open the EM Make/Model configuration dialog. Using an existing make/model, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
34	SG-R3620 SG-R3621 SG-R3622	Open the EM Vehicle Type configuration dialog. Note that user cant add or edit.	Not possible to edit.	<input type="checkbox"/>	<input type="checkbox"/>
35	SG-R3620 SG-R3621 SG-R3622	Open the EM Weather Conditions configuration dialog. Note there is no user editable text in the dialog.	Dialog has nothing to test. This case is just to confirm the dialog was investigated and found to be compliant.	<input type="checkbox"/>	<input type="checkbox"/>
36	SG-R3620 SG-R3621 SG-R3622	Open the Floodgates configuration dialog. Using an existing stored floodgate message, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
37	SG-R3620 SG-R3621 SG-R3622	Open the HAR configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
38	SG-R3620 SG-R3621 SG-R3622	Open the IDS Citilog configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
39	SG-R3620 SG-R3621 SG-R3622	Open the IDS Wrong Way Device configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
40	SG-R3620 SG-R3621 SG-R3622	Open the MLS Action List Template configuration dialog. Using an existing template, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
41	SG-R3620 SG-R3621 SG-R3622	Open the MLS Action Template configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
42	SG-R3620 SG-R3621 SG-R3622	Open the MLS Controller configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
43	SG-R3620 SG-R3621 SG-R3622	Open the MLS Gates configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
44	SG-R3620 SG-R3621 SG-R3622	Open the MLS Managed Road configuration dialog. Using an existing road, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
45	SG-R3620 SG-R3621 SG-R3622	Open the MLS Ramps configuration dialog. Using an existing ramp, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
46	SG-R3620 SG-R3621 SG-R3622	Open the MLS Segment configuration dialog. Using an existing segment, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
47	SG-R3620 SG-R3621 SG-R3622	Open the Manufacturers configuration dialog. Using an existing manufacturer, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
48	SG-R3620 SG-R3621 SG-R3622	Open the Map View configuration dialog. Using an existing view, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
49	SG-R3620 SG-R3621 SG-R3622	Open the RWIS Station configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
50	SG-R3620 SG-R3621 SG-R3622	Open the RMS Controller configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
51	SG-R3620 SG-R3621 SG-R3622	Open the Reports configuration dialog. Using an existing Report Group, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
52	SG-R3620 SG-R3621 SG-R3622	Open the Reports configuration dialog. Using an existing report, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
53	SG-R3620 SG-R3621 SG-R3622	Open the AVL Availability Status configuration dialog. Using an existing status, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
54	SG-R3620 SG-R3621 SG-R3622	Open the AVL Beats configuration dialog. Using an existing beat, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
55	SG-R3620 SG-R3621 SG-R3622	Open the AVL Geofences configuration dialog. Using an existing geofence, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
56	SG-R3620 SG-R3621 SG-R3622	Open the AVL Operator configuration dialog. Using an existing operator, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
57	SG-R3620 SG-R3621 SG-R3622	Open the AVL Radio configuration dialog. Using an existing radio, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
58	SG-R3620 SG-R3621 SG-R3622	Open the AVL Telephone configuration dialog. Using an existing telephone, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
59	SG-R3620 SG-R3621 SG-R3622	Open the AVL Vehicle Agency configuration dialog. Using an existing vehicle agency, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
60	SG-R3620 SG-R3621 SG-R3622	Open the Safety Barrier configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
61	SG-R3620 SG-R3621 SG-R3622	Open the SAS Schedule configuration dialog. Using an existing schedule, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
62	SG-R3620 SG-R3621 SG-R3622	Open the SAS Scheduled Item configuration dialog. Using an existing item, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
63	SG-R3620 SG-R3621 SG-R3622	Open the TSS Detector configuration dialog. Using an existing device, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
64	SG-R3620 SG-R3621 SG-R3622	Open the TSS Link configuration dialog. Using an existing link, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
65	SG-R3620 SG-R3621 SG-R3622	Open the TSS Lane configuration dialog. Using an existing lane, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
66	SG-R3620 SG-R3621 SG-R3622	Open the TCS Traffic Signal Route configuration dialog. Using an existing route, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
67	SG-R3620 SG-R3621 SG-R3622	Open the TVT Destinations configuration dialog. Using an existing destination, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
68	SG-R3620 SG-R3621 SG-R3622	Open the TVT Message Template configuration dialog. Using an existing template, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
69	SG-R3620 SG-R3621 SG-R3622	Open the TVT Links configuration dialog. Using an existing link, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
70	SG-R3620 SG-R3621 SG-R3622	Open the TPS Facility configuration dialog. Using an existing facility, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
71	SG-R3620 SG-R3621 SG-R3622	Open the Video Destination configuration dialog. Using an existing destination, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
72	SG-R3620 SG-R3621 SG-R3622	Open the Video Source configuration dialog. Using an existing source, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
73	SG-R3620 SG-R3621 SG-R3622	Open the Video Tour configuration dialog. Using an existing tour, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
74	SG-R3620 SG-R3621 SG-R3622	Open the Virtual Wall configuration dialog. Using an existing wall, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>
75	SG-R3620 SG-R3621 SG-R3622	Open the Workstation configuration dialog. Using an existing workstation, add a new item with a case insensitive name.	Dialog should indicate an error and not allow the user to save.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.6 IC-5: Planned Events (3860)

2.6.1 Objectives

The objective of this integration case is to test the ability of the system to plan an event.

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: Planned Event Requirements

RMsis ID	Requirement Text
SG-R3830	The software will allow a user to schedule an event to start in the future.
SG-R3831	The software will have a permission that allows users to create a planned event.
SG-R3832	The software will have a permission that allows users to approve the start of planned event.
SG-R3833	The software will require the user to input a timestamp indicating when the event will be activated and allow them to optionally enter a scheduled ending timestamp.
SG-R3834	The software will create a new event with a status of "Planned".
SG-R3870	The software will add an attribute to each event type to determine if that event type can be set as a planned event.
SG-R3835	The software will allow the operator to input the lane blockage for a planned event at the time the planned event is created.
SG-R3836	If lane blockage is set for a planned event, the timestamp for the start of the lane blockage will be the start time of event.
SG-R3837	The software will allow the operator to create a response plan for the planned event at the time the planned event is created.
SG-R3838	The software will disable the ability for the user to activate a response plan before the start of the event.
SG-R3840	The software will send a request for approval for the start of the event before the event is scheduled to be started.
SG-R3841	As part of the planned event creation, the user will set the amount of time before the start of the event to receive the request for approval.
SG-R3842	An operator with permission will have the option to approve the start of the event at the scheduled time and activate the response plan.
SG-R3843	An operator with permission will have the option to approve the start of the event at the scheduled time without activating the response plan.
SG-R3844	An operator with permission will have the option to approve the start of the event immediately and activate the response plan.
SG-R3845	An operator with permission will have the option to approve the start of the event immediately without activating the response plan
SG-R3847	An operator with permission will have the option to reschedule the start of the event.
SG-R3848	The system will only allow a start time to be scheduled in the future.
SG-R3849	If the rescheduled start time is within the configurable notify time of the start

	of the event, a new request for approval will be shown to operators immediately.
SG-R3850	If the rescheduled start time is not within the configurable notify time of the start of the event, a new request for approval will be shown to operators at the normal notification time.
SG-R3851	An operator with permission will have the option to cancel the start of the event and close the event.
SG-R3852	An operator with permission will have the option to defer approval. If this option is chosen, the user will be prompted to enter a duration in minutes. After this duration has elapsed, a new request for approval will be generated in exactly the same way.
SG-R3853	If no response is received from operations before the start time of the event, the event will start, but the response plan will not be activated.
SG-R3854	The software will allow an operator with permission to activate a planned event before the scheduled start time.
SG-R3855	The software will allow an operator with permission to activate a planned event and response plan before the scheduled start time.
SG-R3856	The software will allow an operator with permission to cancel a planned event and close the event before the scheduled start time.
SG-R3857	Before the event has been started, the software will allow a user to change the start time of the event in the Event Details dialog.
SG-R3858	At any time before the scheduled ending of the event, the software will allow the user to add or modify the scheduled ending timestamp of the event.
SG-R3859	The system will only allow an end time to be scheduled in the future.
SG-R3860	The software will create a new section in the event list for event with a status of "Planned".
SG-R3861	When an event starts, the event status will be automatically transitioned to "Active".
SG-R3862	When an event reaches the scheduled end time, a notification will be sent to users reminding them the event is scheduled to end.

2.6.3 Test Approach

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

- Events will be planned to be executed. Given that there are a variety of notifications and operator choices, each operator choice will be tested to confirm the behavior of the event.

2.6.4 Test Descriptions

Subsystems Required

- EM
- Operator Map

Devices Required

The following devices will be used during the test:

- None

Software Integration Case Procedures

Configuration Required

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

- None

Test Procedure

Test Start Date / Time	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3831	Log into an Operator Map with a user that does NOT have permission to create a planned event. Try to create a planned event.	The user is not able to create a planned event.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
2	SG-R3830 SG-R3831 SG-R3832 SG-R3833 SG-R3834 SG-R3870 SG-R3835 SG-R3836 SG-R3838 SG-R3840 SG-R3841 SG-R3842 SG-R3860 SG-R3861	<p>Log into the Operator Map with a user that does have permission to create planned events as well as approve planned events. Ensure that only a subset of Event Types are able to be planned events.</p> <p>Create a planned event.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Set the event type and note the event type available. View the event type configuration and confirm the list of type that can be set as planned events.</p> <p>Set the initial lane blockage and add a response plan to the event.</p> <p>Attempt to activate the response plan.</p> <p>Save the planned event and view the Event List. Note where the event is listed.</p> <p>Wait for the notification of the start of the event and note how many minutes before the start time the notification appeared.</p> <p>Approve the activation of the event and the response plan at the start time previously set.</p> <p>Note the event status and the status of the response plan.</p> <p>Check the database and note the start time of the lane blockage.</p>	<p>Users with permission can create a planned event.</p> <p>Only Event Types set to be able to create planned events are available.</p> <p>Lane blockage and Response plans can be set as part of a planned event. Response plans cannot be activated prior to the start of the event.</p> <p>The Event List shows the events in a "Planned Events" section.</p> <p>A notification of the event start time is sent.</p> <p>Events can approved and activated at the time the event occurred.</p> <p>Event status should be Planned and the response plan was activated.</p> <p>Lane blockage timestamp in the database should be the start time of the event.</p> <p>Events transition to "Active" status once the event has started.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
3	SG-R3843	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Wait for the notification of the start of the event and approve the start of the event at the original start date, without the response plan activation.</p>	<p>Event should activate at the start time but the response plan should not activate.</p>	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3844	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Wait for the notification of the start of the event and approve the start of the event immediately, with the response plan activation.</p>	<p>Event should activate immediately as well as the response plan.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SG-R3845	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Wait for the notification of the start of the event and approve the start of the event immediately, without the response plan activation.</p>	<p>Event should activate immediately but the response plan should not activate.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
6	SG-R3847 SG-R3848 SG-R3849 SG-R3850 SG-R3853	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Wait for the notification of the start of the event and reschedule the start time of the event.</p> <p>Attempt to schedule the start of the event in the past.</p> <p>Schedule the start time for a point in the future longer than the time set for the notification.</p> <p>Wait for the notification of the event and reschedule the start time to a time less in the future than the time set for a notification.</p> <p>When the notification is shown, do not respond to the indicate what should be done at the start time of the event.</p>	<p>Events are able to be rescheduled.</p> <p>Rescheduled start time must be in the future.</p> <p>If it is longer than the notification time, a new notification is sent at a later time.</p> <p>If it is shorter than the notification time, a new notification is sent immediately.</p> <p>If no response is received, the event is created but no response plan is activated.</p>	<input type="checkbox"/>	<input type="checkbox"/>
7	SG-R3851	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Wait for the notification and defer the notification and enter a number of minutes to delay.</p> <p>Wait for the notification of the start of the event and cancel and close the event.</p>	<p>Users are able to defer the approval and a new dialog will reappear after the number of minutes for the deferral have elapsed.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
8	SG-R3854	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Before the notification is sent, select the option to immediately start the event and activate the response plan.</p>	Planned Events can be activated at any time with a response plan.	<input type="checkbox"/>	<input type="checkbox"/>
9	SG-R3855	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Before the notification is sent, select the option to immediately start the event without activating the response plan.</p>	Planned Events can be activated at any time without a response plan.	<input type="checkbox"/>	<input type="checkbox"/>
10	SG-R3856	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent.</p> <p>Before the notification is sent, select the option to cancel and close the event.</p>	Planned Events can be canceled and closed.	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
11	SG-R3857 SG-R3858 SG-R3859 SG-R3862	<p>Create a planned event with a response plan.</p> <p>Set the start time and the time the notification should be sent. Attempt to set the end time of the event in the past. Set the End time for the event (short duration).</p> <p>Before the notification is sent, change the start time of the event.</p> <p>Start the event and let it run until the end time is reached. View the notification.</p> <p>Change the event end time and wait until that time is reached. View the notification.</p>	<p>Users are able to change the start time of the event.</p> <p>Users are able to schedule event end time only in the future.</p> <p>A notification is sent when the end time is reached.</p> <p>End times can be rescheduled.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.7 IC-6: Roadway Naming (Primary/Secondary) (3848)

2.7.1 Objectives

The objective of this integration case is to test the ability of the system to configure and use secondary roadways.

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: Roadway Naming Requirements

RMsis ID	Requirement Text
SG-R3613	SunGuide software will support configuring a parent roadway in the Roadway Configuration window.
SG-R3614	When configuring a parent roadway, the roadway itself as well as other secondary roadways will not be present in the selectable options.
SG-R3615	A parent roadway will not be required.
SG-R3616	If an event is created on a secondary roadway SunGuide software will report the event to FLATIS using the secondary roadway.
SG-R3617	SunGuide software will support running reports for a secondary or primary roadway
SG-R3618	Reports run on a roadway will include all events including its secondary roadways.
SG-R3867	If an event is created on a secondary roadway, the software will allow the user to set congestion using the primary or secondary roadway

2.7.3 Test Approach

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

- Roadway configurations will be to set up a primary secondary relationship. The event details will be tested to confirm the ability to select secondary roadways. Reports will be run to confirm the secondary roadways can be utilized.

2.7.4 Test Descriptions

Subsystems Required

- EM
- 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	
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Perform the following steps from a workstation:

	RMSis ID	Test Steps	Expected Result	P	F
1	SG-R3613 SG-R3615	Open the EM Roadway Configuration Dialog from the context menu by clicking Configuration -> Event Management -> Locations -> Roadways. Set the parent roadway to B for a secondary roadway A with the dropdown and save the changes.	The "Parent Roadway" column should be visible, with all rows initially set to "(No parent roadway)".	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3614	In the dropdown for the parent roadway column for a given roadway, try to find the roadway itself.	A Roadway cannot select itself as its own direct parent.	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3615	Click the "x" button the parent roadway dropdown to clear the selection.	Parent roadways are not required and can be cleared once initially configured. Cleared values can be saved.	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3614	For parent roadway B as the parent of roadway A, try to set the parent roadway of B to be roadway C, making the pattern A → B → C.	The dialog should fail validation because tertiary roadways are not permitted.	<input type="checkbox"/>	<input type="checkbox"/>
5	SG-R3867	Create an event on a secondary roadway. Set the congestion head to the parent roadway and set the congestion tail to the parent roadway.	The user is able to set congestion to the secondary or primary roadway for an event which has a location set to a secondary roadway.	<input type="checkbox"/>	<input type="checkbox"/>
6	SG-R3616	Make sure a C2C Test Server is configured to view outgoing floodgate messages. Activate a response plan for an event with a secondary roadway set as the primary location. View the output in the Test Server.	The published message will contain the secondary roadway as the event's roadway.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMSis ID	Test Steps	Expected Result	P	F
7	SG-R3617 SG-R3618	<p>Run each report that uses roadway locations on a primary roadway and verify that it includes data for each of the secondary roadways.</p> <p>Reports with roadways include the</p> <ul style="list-style-type: none"> • Agency Response Times • Event Details • Event Lane Blockage • Event Level, Event List • Event List with Lane Blockage • Event Response Times • Event Summary • FHP Request • Notifier Contact Summary • Ramp Event List • Road Ranger Assists • Road Ranger Void Activity • Secondary Crash • Secondary Event • SIRV Assists Reports 	Reports run for a roadway will include all items, including those on its secondary roadways.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.8 IC-7: ICMS Integration Changes (4329)

2.8.1 Objectives

The objective of this integration case is to test the ability of the system to retrieve traffic controller status as well as utilize traffic signals in timing plans.

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: ICMS Integration Requirements

RMsis ID	Requirement Text
SG-R3807	The system will implement a TMDDv3 specification interface and receive signal controllers, timing plans, schedules, and signal controller status through the interface.
SG-R3808	The system will allow a user to request the current inventory for signal controllers, timing plans, schedules, and signal controller status.
SG-R3809	The system will allow a user to subscribe for updates to signal controllers, timing plans, schedules, and signal controller status to be passed asynchronously to the user when received through the TMDD interface.
SG-R3810	The system will not allow timing plans received through the TMDD interface to be manually activated from the user interface or configured as part of a signal route.
SG-R3811	The controllers will display the status of the controller in the hover text.
SG-R3812	The system will show the location of all signals controllers on the SunGuide Operator Map.
SG-R3813	The system will allow the controller icon visibility to be toggled via the Operator Map icon configurations.
SG-R3822	The system will allow a user with permission to add a TMDD controller with an associated timing plan to a response plan.
SG-R3823	Users without permissions will be able to view the items in the response plan but will not be allowed to modify or delete the TMDD items.
SG-R3824	The system will allow a user with permission to activate a response plan that includes a TMDD controller.
SG-R3825	When a response plan is activated that includes TMDD controllers, the system will send a command for each controller to the 3rd party system via the TMDD interface to change the timing plan.
SG-R3826	For each controller timing plan in the response plan, the result of the attempted change will be logged in the event chronology.
SG-R3827	If a user does not have permission, and a TMDD controller was added by another user, the user will be unable to activate the response plan. The system will provide an interface for the ICMS to provide a response plan recommendation.
SG-R3828	The system will prompt the operator to handle the response plan recommendation.

2.8.3 Test Approach

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

- A simulator will be used to pass traffic signal data to SunGuide. The updated subscription data will be monitored. Response plans will be generated via XML tested (similar to how the ICMS team would be send to the system). The response plans for events will be monitored and available user actions will be tested.

2.8.4 Test Descriptions

Subsystems Required

- EM
- TCS
- Operator Map

Devices Required

The following devices will be used during the test:

- 2 TMDD simulators (C2C Test Server from TxDOT modified for TMDD)
- Naztec Simulator

Configuration Required

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

- Simulators and devices should be configured to provide data

Test Procedure

Test Start Date / Time	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3807 SG-R3808	Start 2 instances of the TxDOT C2C Test Server. Load the "Set 1" data into one of the instances and load the "Set 3" data into the other. Ensure TCS, the Naztec and TMDD drivers, and EM have all loaded correctly. Using XML Tester, send a refreshDriverStatusReq to the TMDD Driver.	Verify that the request returns valid signals, timing plans, and schedules.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
2	SG-R3811 SG-R3812 SG-R3813	Open the map and find the simulated signal controllers on the map. View the hover text. Toggle the icon visibility on the Operator Map.	Both TMDD and Naztec controllers are shown on the map with icons color coded to their status. Hovering over a controller will show its name and status. Icons are shown or hidden based on the icon selection.	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3809	Using XML tester, subscribe to TMDD changes. In the Test Server instance where "Set 3" was loaded, load "Set 2" in the C2C test server without disconnecting. Verify that the signal changes status on the map.	The new data should have a different status for at least one TMDD signal.	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3822 SG-R3823 SG-R3824 SG-R3825 SG-R3826	Using an operator with permission to add TMDD response plan items, open the response plan for an event in EM. Try to "Add Item" → "Signal Timing". Add one TMDD Signal Timing Plan Item and one Signal Route (Naztec) Signal Timing Plan Item. Activate the response plan and view the output to the C2C Test Server. Load "Set 3" in the C2C Test Server and verify the status in the controllers in the Map. Terminate the response plan and view the output to the C2C Test Server. View the event chronology and verify the activation and deactivation chronology entries.	The system allows a user to modify the response plan to add TMDD controllers and timing plans. The user can activate the response plan and the activation is sent out through the TMDD interface. Status changes are reflected in the controller status. The user can terminate the response plan and the activation is sent out through the TMDD interface. The event chronology shows the activation and deactivation of each of the TMDD timing plans.	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
5	SG-R3810	Attempt to activate a TMDD timing plan manually. Attempt to add a TMDD timing plan to a signal route.	The user is unable to manually activate TMDD timing plans, or add a TMDD plan to a signal route.	<input type="checkbox"/>	<input type="checkbox"/>
6	SG-R3822 SG-R3823 SG-R3824 SG-R3827	Using an operator without permission to add TMDD response plan items, open the response plan for an event in EM. Attempt to add a TMDD signal controller. Activate the response plan.	The user is unable to modify timing plan items but is able to view and activate the response plan.	<input type="checkbox"/>	<input type="checkbox"/>
7	SG-R3822 SG-R3823 SG-R3824 SG-R3827	Using an operator without permission to add TMDD response plan items or activate response plans with TMDD items, open the response plan for an event in EM. Attempt to add a TMDD signal controller. Attempt to activate the response plan.	The user is unable to modify the timing plan items and is also unable to activate the response plan.	<input type="checkbox"/>	<input type="checkbox"/>
8	SG-R3828	Have an Operator Map open. Using XML Tester, modify a response plan to include a TMDD timing plan. Send a request to EM to notify the users of the updated response plan. View the operator popup.	Users are notified when a response plan is changed.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.9 IC-8: Event List Row Height (4301)

2.9.1 Objectives

The objective of this integration case is to test the ability of the system to change the row layout on a per user basis.

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: Event List Row Height Requirements

RMsis ID	Requirement Text
SG-R3864	The Operator Map will allow the user to set a user preference indicating the number of lines of text to display per event in the Event List.
SG-R3865	The default value for a user will be 1 line per event.
SG-R3866	If the user enters a value greater than 1, the dialog will wrap text to the next line.

2.9.3 Test Approach

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

- By modifying the user configuration, the look of the event list will be modified to fit the user needs.

2.9.4 Test Descriptions

Subsystems Required

- EM
- 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	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3864 SG-R3865	Open the event list. Note the current number of lines set for the display of an event.	Default behavior should have the Event List display one line per event.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
2	SG-R3864 SG-R3866	Open the Change Settings dialog at the top of the event list. For the number of lines to display, choose a value greater than 1. Save and view the Event List.	The Event List will have each event displayed on the chosen number of lines. Since the number of rows is greater than one, the text in the columns will wrap.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.10IC-9: Permanent Status Filter (4302)

2.10.1 Objectives

The objective of this integration case is to test the ability of the system to update the status of devices in real time and display it on the map.

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: Permanent Status Filter Requirements

RMsis ID	Requirement Text
SG-R3623	When selecting the filter for Op Status for any device, the options for filtering will include Active, Error, Failed, and Out of Service, even if the values are not currently applicable to any device in the list.
SG-R3868	When the device status changes, the software shall update the device status and re-apply the existing status filter.

2.10.3 Test Approach

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

- Various simulators will be used to put devices in good a bad states. The output of the status dialog (filtered to specific Op Status) will be examined.

2.10.4 Test Descriptions

Subsystems Required

- TSS
- DMS
- RWIS
- Operator Map

Devices Required

The following devices will be used during the test:

- TSS Simulator
- DMS Simulator
- RWIS Simulator
- WWD Simulator

Configuration Required

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

- Simulators and devices should be configured to provide data

Test Procedure

Test Start Date / Time	
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Perform the following steps from a workstation:

	RMSis ID	Test Steps	Expected Result	P	F
1	SG-R3623 SG-R3868	<p>For a TSS Detector, ensure the TSS Simulator is running and the detector has an Active status.</p> <p>Open the Detector status dialog. Confirm the status of the other detectors and make sure no devices are Out of Service.</p> <p>Open the filter for Op Status and view the available options.</p> <p>Filter to devices in error state.</p> <p>Turn off the simulator and view the device enter the Error state.</p>	<p>All Op Status options are available in the filter.</p> <p>Status changes are automatically reflected in the dialog.</p>	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3623 SG-R3868	<p>For a DMS sign, ensure the DMS Simulator is running and the sign has an Active status.</p> <p>Open the DMS status dialog. Confirm the status of the other signs and make sure no devices are Out of Service.</p> <p>Open the filter for Op Status and view the available options.</p> <p>Filter to devices in error state.</p> <p>Turn off the simulator and view the device enter the Error state.</p>	<p>All Op Status options are available in the filter.</p> <p>Status changes are automatically reflected in the dialog.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
3	SG-R3623 SG-R3868	<p>For a RWIS station, ensure the RWIS Simulator is running and the station has an Active status.</p> <p>Open the RWIS status dialog. Confirm the status of the other stations and make sure no devices are Out of Service.</p> <p>Open the filter for Op Status and view the available options.</p> <p>Filter to devices in error state.</p> <p>Turn off the simulator and view the device enter the Error state.</p>	<p>All Op Status options are available in the filter.</p> <p>Status changes are automatically reflected in the dialog.</p>	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3623 SG-R3868	<p>For a WWD Device, ensure the WWD Simulator is running and the detector has an Active status.</p> <p>Open the WWD status dialog. Confirm the status of the other detector and make sure no devices are Out of Service.</p> <p>Open the filter for Op Status and view the available options.</p> <p>Filter to devices in error state.</p> <p>Turn off the simulator and view the device enter the Error state.</p>	<p>All Op Status options are available in the filter.</p> <p>Status changes are automatically reflected in the dialog.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.11IC-10: Color/Non Color Signs in SAS (3986)

2.11.1 Objectives

The objective of this integration case is to test the ability of the system to send predefined plans via SAS.

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: Color/Non Color Requirements

RMsis ID	Requirement Text
SG-R3630	SAS will allow a user to schedule the activation of an EM pre-defined plan.
SG-R3631	SAS will allow the user to create a scheduled item and choose from a list of EM predefined plans.
SG-R3632	At the start time of the scheduled item, SAS will activate each DMS message in the pre-defined plan.
SG-R3633	At the end time of the scheduled item, SAS will deactivate each DMS message which was activated by the scheduled item.
SG-R3635	When deleting a pre-defined plan from EM, the system will verify that the plan is not in use by SAS.
SG-R3636	If the plan is in use by SAS, the system will not allow the plan to be deleted until the SAS scheduled item is modified to remove the pre-defined plan or the SAS scheduled item is deleted.
SG-R3637	If SAS is unavailable at the time of the deletion, the system will warn the user about the possibility of the deletion causing issues with SAS activation of pre-defined plans.

2.11.3 Test Approach

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

- Scheduled Items will be created to activate at specific times and the output will be examined.

2.11.4 Test Descriptions

Subsystems Required

- SAS
- DMS
- MAS
- Operator Map

Devices Required

The following devices will be used during the test:

- DMS Simulator

Software Integration Case Procedures

Configuration Required

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

- Simulators and devices should be configured to provide data

Test Procedure

Test Start Date / Time	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3630 SG-R3631 SG-R3632 SG-R3633	<p>Add a predefined response plan with at least one color and one non-color sign.</p> <p>Add a new SAS schedule and scheduled item. Select to activate the predefined plan you configured previously.</p> <p>Set the time to activate the schedule item 1 min in the future and to deactivate the item 3 mins into the future.</p> <p>When the item is activated, check the status of the DMS signs from the predefined plan.</p> <p>When the item is deactivated, check the status of the DMS signs from the predefined plan.</p>	<p>The user is able to configure a schedule and schedule item that contains a predefined plan.</p> <p>The predefined plan is activated when the schedule item is activated, and the signs have the appropriate messages.</p> <p>The predefined plan is deactivated when the schedule item is deactivated, and the signs have removed the appropriate messages.</p>	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3635	Attempt to delete the Predefined plan that is in use in the SAS Scheduled Item.	The plan is not allowed to be deleted and an explanation is given to the user identifying the schedule and schedule item contain the predefined plan.	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3637	<p>Turn off the SAS Subsystem.</p> <p>Attempt to delete the Predefined plan that is in use in the SAS Scheduled Item.</p>	The user is warned that this action may cause issue in SAS.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
4	SG-R3635 SG-R3636	Turn on the SAS Subsystem. Remove the Predefined plan from the scheduled item. Delete the Predefined plan that was previously in use.	The plan can be deleted.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.12IC-11: Generic Feature Subsystem (4577)

2.12.1 Objectives

The objective of this integration case is to test the ability of the system to configure and update Bridge types.

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: Generic Feature Requirements

RMsis ID	Requirement Text
SG-R3770	The system will support adding new configurable features to the system.
SG-R3771	The system will maintain a collection of GPIO Icons.
SG-R3772	The system will allow users with permission to configure GPIO icons.
SG-R3773	The system will maintain a collection of GPIO Status Values.
SG-R3774	A GPIO Status Value will consist of a Name and a GPIO Icon.
SG-R3775	GPIO Status Values will be read from the database on startup.
SG-R3776	The system will allow users with permission to configure the GPIO Icon assigned to each GPIO Status Value.
SG-R3780	The system will maintain a collection of GPIO Types.
SG-R3781	A GPIO Type will consist of a Name and a list of GPIO Status Values which may be reported for the GPIO Type.
SG-R3782	GPIO Types will be read from the database on startup.
SG-R3794	A GPIO Type named "Bridge" will be configured in the system.
SG-R3784	The system will maintain a collection of GPIO Features.
SG-R3785	A GPIO Feature will allow configuration of a Name, Latitude/Longitude, Location Description, GPIO Type, Status Type (indicating whether the status is manually assigned or updated from an external source), Can Publish Flag, Last Updated Timestamp, and optional parameters to connect to an external source for status.
SG-R3786	A GPIO Feature will also contain a current GPIO Status and a current op status.
SG-R3787	The GPIO Status of a GPIO Feature will be manually set or automatically updated based on the Status Type of the Feature.
SG-R3788	The op status of a GPIO Feature will be based on communication or manual settings in the same manner as other SunGuide devices.
SG-R3789	If a GPIO Feature is configured for manual input for status, the system will allow a user with appropriate permissions to change the status of that Feature.
SG-R3790	If a GPIO Feature is configured for external input for status, the system will not allow a user to change the status of that Feature manually.
SG-R3791	When the status of a GPIO Group changes, the icon on the Operator Map will be the GPIO Icon configured to represent the current status of the Group.
SG-R3792	The Operator Map will allow the user to show and hide GPIO Features by GPIO Type via the main map icon configuration panel.
SG-R3793	The system will send GPIO Feature information through Center to Center

	(C2C) including Name, Latitude/Longitude, Location Description, GPIO Type, Status, Can Publish Flag, and a Last Updated Timestamp.
SG-R3797	The system will maintain a collection of GPIO DMS Message Actions based on GPIO status changes.
SG-R3798	A GPIO DMS Message Action will consist of a GPIO Feature, a GPIO Status, a DMS message, and one or more DMS devices.
SG-R3799	The system will allow a user with permission to configure GPIO DMS Message Actions.
SG-R3800	For a GPIO Feature which has a DMS Message Action defined for it and which does not have an op status of Out of Service, when the Feature's GPIO Status changes to the Status defined for that Message Action, the configured Message will be added to the MAS queue for the device(s) of the Message Action.
SG-R3801	For a GPIO Feature which has a DMS Message Action defined for it, when the Feature's GPIO Status changes to any status other than the Status defined for that Message Action, the Configured Message will be removed from the MAS queue for the device(s) of the Message Action if it is present.
SG-R3802	When a GPIO DMS Message Action is added, if the status of that Message Action's Feature matches the Message Action's Status and the Feature does not have an op status of Out of Service, the configured Message will be added to the MAS queue for the device(s) of the Message Action.
SG-R3803	When a GPIO DMS Message Action is deleted, the message of that Message Action will be removed from the MAS queue for the device(s) of the Message Action if it is present.
SG-R3804	When a GPIO DMS Message Action is modified, the system will update MAS queue messages as if the original version of the Message Action was deleted, and the new version of the Message Action was added.
SG-R3805	On startup, the system will remove messages from MAS queues which were previously placed due to GPIO Message Actions and then evaluate each DMS Message Action as if a status change has occurred.

2.12.3 Test Approach

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

- Simulated bridge devices will be configured to provide automatic status updates. Status and C2C output will be monitored for changes.

2.12.4 Test Descriptions

Subsystems Required

- GPIO
- C2C
- DMS
- MAS
- Operator Map

Devices Required

The following devices will be used during the test:

- Bridge Simulator
- DMS Simulator

Configuration Required

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

- Simulators and devices should be configured to provide data

Test Procedure

Test Start Date / Time	
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Perform the following steps from a workstation:

	RMSis ID	Test Steps	Expected Result	P	F
1	SG-R3770 SG-R3771 SG-R3772 SG-R3773 SG-R3774 SG-R3775 SG-R3776 SG-R3780 SG-R3781 SG-R3782 SG-R3794	<p>Log into a Map with a user that has permission to configured GPIO devices.</p> <p>View that status values currently available for the system. View the status values in the database. Status values are configured at that level.</p> <p>View the icons available for those status. Icons can be configured. Change the icon to a different image.</p> <p>View the type values available. View the list of status configured to be available for each type. View the bridge Type.</p> <p>Log into a Map with a user that does not have permission to configured GPIO devices. Attempt to configure GPIO.</p>	<p>New types are configurable.</p> <p>New status values are set. Status value consist of a name and an icon. Status values are read on startup so new ones can be added to the database level and read in on startup.</p> <p>Icons are configurable.</p> <p>New type values are set. Types value consist of a name and an icon. Type values are read on startup so new ones can be added to the database level and read in on startup.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
2	SG-R3784 SG-R3785 SG-R3786 SG-R3787 SG-R3788 SG-R3789 SG-R3790 SG-R3791 SG-R3792	Log into a Map with a user that has permission to configured GPIO devices. Add a new GPIO Feature to the system and set the device for manual status updates. Manual change the status of the device. Remove the permission to be able to change device status. Attempt to change the status of the device. Add a new GPIO Feature to the system and set the device for automatic status updates. Connect the device to a simulated data feed. Use the simulator to change the status of the device. Attempt to change the status of the device. Use the icon configuration panel to show and hide the GPIO icons.	Devices can be configured to get status from a manual input or automatic input. Users can change the status of manual devices. Users can NOT change the status of devices set for automatic mode. Status updates via the data feed. Icons can be hidden via the icon configuration.	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3793	Using the web URI of the Provider View the GPIO Features in the C2C feed. Update the status of a device and view the feed again.	Feed will contain Name, Latitude/Longitude, Location Description, GPIO Type, Status, Can Publish Flag, and a Last Updated Timestamp. Status is updated in the C2C Feed.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
4	SG-R3797 SG-R3798 SG-R3799 SG-R3800 SG-R3801	<p>Log into a Map with a user that has permission to configure DMS Message Actions.</p> <p>Create a new Message Action that will post a DMS message based on a device status change. Select 1 or more DMS and a message to post.</p> <p>Use the simulator to change the status of the device to the status that would post the DMS message. View the messages of the DMS in the Message Action.</p> <p>Use the simulator to change the status of the device to the status that would NOT post the DMS message. View the messages of the DMS in the Message Action.</p>	<p>DMS Message action consist of a Feature, a Status, a DMS message, and a list of DMS.</p> <p>When the status changes to the expected state, message are posted to the DMS.</p> <p>When the status changes away from the expected state, messages are removed from the signs.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SG-R3802 SG-R3803	<p>Log into a Map with a user that has permission to configure DMS Message Actions.</p> <p>Create a Message Action for a device that is already in the status required to post the DMS message. View the messages of the DMS in the Message Action.</p> <p>Modify the Message action to change the expected status. View the messages of the DMS in the Message Action.</p> <p>Change the status to the expected status. View the messages of the DMS in the Message Action.</p> <p>Delete the message action without changing the device status. View the messages of the DMS in the Message Action.</p>	<p>The message will automatically be posted when the Message action is added.</p> <p>When a message is modified, the messages are removed and re-evaluated before posting new messages.</p> <p>The message will be removed when the Message Action is deleted.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
6	SG-R3805	<p>Ensure there are multiple bridges with Message Actions. Note the required status for each.</p> <p>Turn off GPIO.</p> <p>Set at least one to a state that would activate the Message Action.</p> <p>Set at least one to a state that would NOT activate the Message Action.</p> <p>View the messages of the DMS in the Message Action.</p> <p>Restart GPIO.</p> <p>View the messages of the DMS in the Message Action.</p>	<p>Message Actions are evaluated on startup and messages are posted according to status.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.13IC-12: : Executive Notifications (4015)

2.13.1 Objectives

The objective of this integration case is to test the ability of the system to generate and send Executive Notifications.

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: Executive Notification Requirements

RMsis ID	Requirement Text
SG-R3704	The software will generate an Executive Notification for the following criteria:
SG-R3705	Limited access highway crash with an injury type with the attribute of "multiple fatalities"
SG-R3706	If a fatality occurs and the event is an active work zone
SG-R3707	If a Visibility event has an associated secondary Crash event
SG-R3708	If a crash event has an associated secondary visibility event
SG-R3709	If a visibility alert is used to create a Crash event
SG-R3710	If a visibility alert is associated with an existing Crash event
SG-R3711	If a Crash event exceeds the configured threshold for involved vehicles.
SG-R3712	An event with an involved vehicle with a type of "Bus" and a fatality or injury
SG-R3713	Full closures (including shoulders) where the estimated blockage is greater than 1 hour, except that if ramp lanes are the only travel lanes, SunGuide will not generate an Executive Notification.
SG-R3714	A "Bridge Closed" event occurs.
SG-R3715	A wildfire event occurs with a full closure (including shoulders) on a limited access highway, except that if ramp lanes are the only travel lanes, SunGuide will not generate an Executive Notification
SG-R3717	The software will also generate an update to the Executive Notification for the following criteria:
SG-R3718	A full lane blockage closure goes to a partial closure
SG-R3719	A partial closure or full closure goes to completely open
SG-R3720	Requests made by FDOT leadership or emergency mgmt. watch officer
SG-R3721	At least every 2 hours after the last executive email notification was sent, assuming the event was not closed.
SG-R3724	The software will allow the user to configure a flat file template for the initial layout of the email.
SG-R3725	The software will make available tags to allow a location to be composed, as follows: [ROUTE NAME] [ROUTE DIR] [PROXIMITY] [CROSS STREET] in [COUNTY] County
SG-R3726	Within the template, the software will allow user to configure the font used in the email.
SG-R3727	Within the template, the software will allow user to configure the font size used in the email.
SG-R3728	Within the template, the software will allow the user to configure color of the text used in email.

SG-R3731	The software will allow the user to select attributes on an Injury Type Configuration for No Fatality, Single Fatality, or Multiple Fatality.
SG-R3732	The software will allow a user to select if the event is taking place in a work zone and, if in a work zone, an additional selection to indicate the work zone was Active or Inactive.
SG-R3733	The software will allow the user to indicate that the event exceeds a configured number of involved vehicle to generate the executive Notification.
SG-R3734	The configured number of involved vehicles will be displayed next to the selection of the option indicating the number of involved vehicles has exceeded the threshold in this event.
SG-R3735	The configurable threshold that triggered the notification will be recorded with every notification.
SG-R3736	The software will allow a user to set an event type of "Wildfire".
SG-R3737	When the software sends a "Wildfire" event to FLATIS, the SAE code sent will be 921.
SG-R3738	The software will allow a user to set an event type of "Bridge Closed".
SG-R3739	When the software sends a "Bridge Closed" event to FLATIS, the SAE code sent will be 26.
SG-R3740	The software will allow the user with permission to audit the event type attribute flags.
SG-R3742	When an Executive Notification is generated by the system, the software will notify the event owner.
SG-R3743	Once an Executive Notification is ready and the user has permission to send, the software will allow the user to approve the email and send to the contacts in the email.
SG-R3744	If the user does not have permission, the software will allow the user to send the Executive Notification to a logged in user who does have permission to approve and send the email. Once approved, the email would send to the contacts in the email.
SG-R3745	If the user does not have permission, the software will allow the user to enter the credentials of a user who does have permission to approve and send the email. Once approved, the email would send to the contacts in the email.
SG-R3746	The software will insert the name, title, contact number, and email address of the user who approves the Executive Notification to the bottom of the email.
SG-R3747	For each user, the software will allow a user with permission to enter a phone number and title for each configured user. Both fields are optional for user configuration.
SG-R3749	The software will read a template from a flat file for the initial format of the email for an Executive Notification.
SG-R3750	The template will allow the user to set the color of the text for the email.
SG-R3751	The software will have a dialog for managing Executive Notification emails.
SG-R3752	The text of the generated email will be editable by the user.
SG-R3873	The software will allow the user to add or remove email addresses or contact lists from generated email.
SG-R3753	The "Narrative and Response Actions" section of the email will be constructed using all of the comment in the event that have the comment type configured for use with Executive Notifications, sorted in chronological

	order.
SG-R3754	The software will allow the user to modify entries in the Narrative section which will audit the event comment for the event, updating the comment permanently.
SG-R3755	The software will allow the user to select which comments are included in the Narrative section.
SG-R3756	The software will default new comments as selected.
SG-R3757	The software will store and recall which comments were marked as selected for future notifications.
SG-R3758	The software will allow the user to add new Event Notification comments directly from the Executive Notification management dialog.
SG-R3759	When the software displays an updated Executive Notification, the software shall highlight the comment not in the previous Narrative.
SG-R3760	The software will allow a user to capture a snapshot from a CCTV camera using the Video On Desktop dialog.
SG-R3761	The software will allow the user to attach the snapshot to the Executive Notification.
SG-R3762	The software will allow the user to attach a file to the Executive Notification.
SG-R3763	The software will allow users with permission to open an active Executive Notification, make edits, and send an updated Executive Notification.
SG-R3765	The software will have a single GUI to support creating an Event Location.
SG-R3766	The software will allow a user will permission to select a Roadway, County, Direction, and add a Location, including all fields necessary to complete the addition.
SG-R3767	If a Roadway, County, Direction, or Reference Point has not been configured, the dialog will allow the user to input the necessary information to add the needed information.

2.13.3 Test Approach

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

- Various criteria will be generated to produce Executive Notifications
- The generated messages will be compared to the template and possible user modifications of the email will be tested.

2.13.4 Test Descriptions

Subsystems Required

- EM
- 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	
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Perform the following steps from a workstation:

	RMSis ID	Test Steps	Expected Result	P	F
1	SG-R3731	<p>Open and log in to the Operator Map as an administrator user.</p> <p>Open the Injury Type configuration dialog.</p> <p>View the available columns and configuration options.</p> <p>Configure at least one injury type with each of the available "Fatality Type" options.</p>	<p>There is a column named "Fatality Type". Available options include "No Fatalities", "Single Fatality", and "Multiple Fatalities".</p> <p>The system allows configuring the "Fatality Type" field for an injury type.</p>	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3747	<p>Open the User and Group configuration dialog.</p> <p>View the available columns.</p> <p>Configure a title and phone number for the current user.</p> <p>If not already configured, also configure the first name, last name, and email address of the current user.</p> <p>Save the updated user configuration.</p>	<p>There are columns named "Title" and "Phone Number".</p> <p>The system allows configuring the "Title" and "Phone Number" for a user.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3740	<p>Create a new event.</p> <p>Set various event type attribute flags from the "Fire", "Rollover", "HAZMAT", "Wrong Way Driver", "Work Zone", and "Work Zone Status" values.</p> <p>Audit the event, selecting the "Event Type Details" data.</p> <p>Change the event type attribute flags and save the updated values.</p> <p>Go back to the event details window for the event and review the event type attributes.</p>	<p>The event type attribute flags can be audited.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
4	SG-R3724 SG-R3725 SG-R3726 SG-R3727 SG-R3728	<p>Open the executive notification template file.</p> <p>Ensure the template uses the [ROUTE NAME], [ROUTE DIR], [PROXIMITY], [CROSS STREET], and [COUNTY] template tags within either the subject or body sections of the template.</p> <p>Using valid XML-escaped HTML syntax, wrap the content of the body section in a tag that sets the font to "Arial", the font size to "14", and the font color to "Red".</p> <p>Using valid XML-escaped HTML syntax, wrap a selection of text from the body section in a tag that sets the font to "Times New Roman", the font size to "12", and the font color to "Green".</p> <p>If any changes have been made to the template file, save the file and restart EM.</p>	<p>The executive notification template file allows the following tags in the email subject and body: [ROUTE NAME], [ROUTE DIR], [PROXIMITY], [CROSS STREET], and [COUNTY].</p> <p>The executive notification template file allows users to configure the font, font size, and text color used in the email.</p> <p>The executive notification template file allows users to configure the text color on a word, or group of words, basis.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SG-R3704 SG-R3705 SG-R3751	<p>Create a new event. When creating the event, select the event type of "Crash".</p> <p>Select an injury type that has the attribute of "Multiple Fatalities".</p> <p>Save the event.</p> <p>Note the executive notification dialog popup.</p>	<p>An executive notification is generated for the event.</p> <p>A new dialog is opened allowing the user to manage the executive notification email.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
6	SG-R3749 SG-R3750 SG-R3752	In the executive notification dialog for the event in the previous step, review the initial suggested email content. Use the rich text editor to change the content and formatting (including text color) of the executive notification email.	The initial content of the executive notification email is formatted using the content of the template file. The initial content of the executive notification email has replaced the template tags with details from the event. The rich text editor allows the user to change the text of the executive notification email.	<input type="checkbox"/>	<input type="checkbox"/>
7	SG-R3753 SG-R3755 SG-R3756 SG-R3758	In the lower half of the window, review the default state of the selected comments to include in the narrative. Using the ribbon button, add a comment to the event. Open the event details window for the event. Review the event chronology for the event.	The executive notification window allows comments to be included or excluded. By default, the new executive notification comment automatically added to the event is included. The new executive notification comment is shown in the bottom half of the window.	<input type="checkbox"/>	<input type="checkbox"/>
8	SG-R3753 SG-R3754	Using the ribbon button, select a comment in the bottom half of the window. Using the ribbon button, select the option to modify the comment text. Edit and save the comment text. Open the event details window for the event. Review the event chronology for the event.	The executive notification window allows comment text to be modified using audit functionality.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
9	SG-R3760	<p>Open the Video on Desktop window and view a configured camera stream.</p> <p>Right click on the stream and select the option to "Take Snapshot". At the prompt. select a location and file name to save the file.</p>	<p>The software allows the user to capture and save a snapshot from a Video on Desktop video stream.</p>	<input type="checkbox"/>	<input type="checkbox"/>
10	SG-R3761 SG-R3762	<p>Return to the executive notification email dialog.</p> <p>Using the button in the ribbon, select the option to add an attachment to the email. Select the saved Video on Desktop snapshot from the previous step.</p> <p>Again, using the button in the ribbon, select the option to add an attachment to the email. Select another file to be attached.</p>	<p>The software allows the user to attach the saved Video on Desktop snapshot to the executive notification.</p> <p>The software allows the user to attach files to the executive notification.</p>	<input type="checkbox"/>	<input type="checkbox"/>
11	SG-R3751 SG-R3873	<p>Using the button in the ribbon, select the option to edit the recipients.</p>	<p>The recipient editor allows the user to add or remove email lists and individual email addresses from the executive notification.</p>	<input type="checkbox"/>	<input type="checkbox"/>
12	SG-R3743 SG-R3746 SG-R3753	<p>Send the executive notification email.</p> <p>Review the received email.</p>	<p>The received email includes the selected comments sorted in chronological order in the narrative section.</p> <p>The received email includes the name, title, contact number, and email address of the current user.</p>	<input type="checkbox"/>	<input type="checkbox"/>
13	SG-R3704 SG-R3706 SG-R3732	<p>Create a new event.</p> <p>Review the event type attributes.</p> <p>When creating the event, check the event type attribute to indicate the event is in a work zone and select the "Active" option for the work zone status.</p> <p>Save the event.</p>	<p>An executive notification is generated for the event.</p> <p>A new dialog is presented to the user for managing the generated executive notification.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
14	SG-R3704 SG-R3707	<p>Create a new event. When creating the event, select an event type of "Crash".</p> <p>Create a second event. When creating the second event, select an event type of "Visibility".</p> <p>Set the primary event of the "Crash" event to the "Visibility" event.</p> <p>Save the "Crash" event.</p>	<p>An executive notification is generated for the "Visibility" event.</p>	<input type="checkbox"/>	<input type="checkbox"/>
15	SG-R3704 SG-R3708	<p>Create a new event. When creating the event, select an event type of "Visibility".</p> <p>Create a second event. When creating the second event, select an event type of "Crash".</p> <p>Set the primary event of the "Visibility" event to the "Crash" event.</p> <p>Save the "Visibility" event.</p>	<p>An executive notification is generated for the crash event.</p>	<input type="checkbox"/>	<input type="checkbox"/>
16	SG-R3704 SG-R3709	<p>THIS IS NOT POSSIBLE</p> <p>Adjust the RWIS simulator value for visibility distance to trigger an RWIS alarm.</p> <p>Create an event from the alarm with an event type of "Crash".</p>	<p>THIS IS NOT POSSIBLE.</p> <p>Event type can never be set to Crash for an RWIS alert.</p>	<input type="checkbox"/>	<input type="checkbox"/>
17	SG-R3704 SG-R3710	<p>Create a new event. When creating the event, select an event type of "Crash".</p> <p>Adjust the RWIS simulator value for visibility distance to trigger an RWIS alarm.</p> <p>Associate the alarm to the existing "Crash" event.</p>	<p>An executive notification is generated for the event.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
18	SG-R3704 SG-R3711 SG-R3733 SG-R3734 SG-R3735	<p>Open the Config File Editor. Review the EM configuration value for "involvedVehicleCountThreshold".</p> <p>Create a new event. When creating the event, select an event type of "Crash".</p> <p>Review the involved vehicle section.</p> <p>Select the option to indicate the event exceeds the involved vehicle threshold.</p> <p>Save the event.</p>	<p>The software allows the user to configure a number of involved vehicles used to generate an executive notification.</p> <p>The software allows the user to select an option indicating an event exceeds this configured value of involved vehicles.</p> <p>An executive notification is generated for the event.</p> <p>The executive notification comment indicates the threshold value.</p>	<input type="checkbox"/>	<input type="checkbox"/>
19	SG-R3704 SG-R3711	<p>Create a new event. When creating the event, select an event type of "Crash".</p> <p>Add enough involved vehicles to the event to exceed the involved vehicle threshold.</p> <p>Save the event.</p>	An executive notification is created for the event.	<input type="checkbox"/>	<input type="checkbox"/>
20	SG-R3704 SG-R3712	<p>Create a new event.</p> <p>Add an involved vehicle to the event. Select a vehicle make and model that uses the vehicle type of "Bus".</p> <p>Select an injury type that has the "Fatality Type" attribute of "Single Fatality" or "Multiple Fatalities".</p> <p>Save the event.</p>	An executive notification is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
21	SG-R3704 SG-R3713	<p>Create a new event.</p> <p>Change the estimated duration of the event to exceed an hour.</p> <p>Ensure the lane map for the event contains at least 3 travel lanes.</p> <p>Block all lanes.</p> <p>Save the event.</p>	An executive notification is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
22	SG-R3717 SG-R3718	For same the event from the previous step, unblock two lanes. Save the event.	An executive notification update is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
23	SG-R3717 SG-R3721	For the same event, unblock all lanes. Save the event.	An executive notification update is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
24	SG-R3717 SG-R3719	For the same event, add a new comment to the event using the executive notification comment type.	An executive notification update is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
25	SG-R3717 SG-R3720	Wait 2 hours from the time the last executive notification email was sent.	An executive notification update is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
26	SG-R3704 SG-R3713	Create a new event. Block all lanes. Wait one hour.	An executive notification is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
27	SG-R3704 SG-R3713	Create a new event. Change the estimated duration of the event to exceed an hour. Change the lane configuration to (Sh)(Exit)(Sh). Block all lanes.	An executive notification is not generated.	<input type="checkbox"/>	<input type="checkbox"/>
28	SG-R3704 SG-R3714 SG-R3738	Create a new event. When creating the event, select the event type of "Bridge Closed".	An executive notification is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
29	SG-R3739	Create and activate a response plan for the new event with only a single FL511 item. Review the event type SAE code sent to the C2C Test Server.	The event type SAE code is 26.	<input type="checkbox"/>	<input type="checkbox"/>
30	SG-R3704 SG-R3715 SG-R3736	Create a new event. When creating the event, select the event type of "Wildfire". Block all lanes.	An executive notification is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
31	SG-R3717 SG-R3721	For the same event, unblock all lanes. Save the event.	An executive notification update is generated for the event.	<input type="checkbox"/>	<input type="checkbox"/>
32	SG-R3737	Create and activate a response plan for the new event with only a single FL511 item. Review the event type SAE code sent to the C2C Test Server.	The event type SAE code is 921.	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
33	SG-R3715	<p>Create a new event. When creating the event, select the event type of "Wildfire".</p> <p>Change the lane configuration to (Sh)(Exit)(Sh). Block all lanes.</p>	An executive notification is not generated.	<input type="checkbox"/>	<input type="checkbox"/>
34	SG-R3742 SG-R3744 SG-R3746	<p>Open a second Operator Map and log in as the user with limited permissions.</p> <p>Using the limited user session, generate a new executive notification for an event.</p> <p>Edit the subject, body, included narrative, email recipients, and attachments as desired.</p> <p>Attempt to send the executive notification.</p> <p>Select the option to send the executive notification to the other user session which has administrator privileges.</p> <p>From the administrator session, note the inter-operator prompt.</p> <p>Select the option to review and approve the email.</p> <p>Send the executive notification. Review the received email.</p>	<p>The event owner is the only user to receive the executive notification.</p> <p>The user is unable to directly send the executive notification.</p> <p>A prompt allowing the user to send the executive notification email to another user with permission is shown to the user.</p> <p>The other user is able to review and send the executive notification.</p> <p>The information on the approver at the bottom of the email is the information of the administrator user.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
35	SG-R3745 SG-R3746	<p>From the Operator Map logged in as a user with permissions to generate an executive notification, but not to send one. Generate a new executive notification for an event.</p> <p>Edit the subject, body, included narrative, email recipients, and attachments as desired.</p> <p>Attempt to send the executive notification.</p> <p>Select the option for another user to enter their credentials.</p> <p>Enter the credentials of the administrator user.</p> <p>Review the received email.</p>	<p>The user is unable to directly send the executive notification.</p> <p>A prompt allowing another user with permission to send the executive notification email is shown to the user.</p> <p>The executive notification is able to be sent using the administrator user's credentials.</p> <p>The information on the approver at the bottom of the email is the information of the administrator user.</p>	<input type="checkbox"/>	<input type="checkbox"/>
36	SG-R3763	<p>From the event list dialog, select an event that has already sent an executive notification.</p> <p>Change the location of the event.</p> <p>From the ribbon, select the option to "Manage Executive Notification".</p> <p>Review the location details that were generated from the template.</p> <p>Make any edits to the subject, body, included comments, attachments, and recipients.</p> <p>Send the executive notification.</p>	<p>The user is able to open, edit, and send an active executive notification.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
37	SG-R3763	<p>Open the event details dialog of an event that has already sent an executive notification.</p> <p>Change the location of the event.</p> <p>From the ribbon, select the option to "Manage Executive Notification".</p> <p>Review the location details that were generated from the template.</p> <p>Make any edits to the subject, body, included comments, attachments, and recipients.</p> <p>Send the executive notification.</p>	<p>The user is able to open, edit, and send an active executive notification.</p>	<input type="checkbox"/>	<input type="checkbox"/>
38	SG-R3759	<p>Create a new event.</p> <p>Add an executive notification comment to the event.</p> <p>De-select the executive notification comment.</p> <p>Send the executive notification email.</p> <p>Add another executive notification comment to the event.</p> <p>Note the selection state of the first executive notification comment.</p>	<p>The first executive notification comment is deselected.</p>	<input type="checkbox"/>	<input type="checkbox"/>
39	SG-R3757 SG-R3731	<p>Open and log in to the Operator Map as an administrator user.</p> <p>Open the Injury Type configuration dialog.</p> <p>View the available columns and configuration options.</p> <p>Configure at least one injury type with each of the available "Fatality Type" options.</p>	<p>There is a column named "Fatality Type". Available options include "No Fatalities", "Single Fatality", and "Multiple Fatalities".</p> <p>The system allows configuring the "Fatality Type" field for an injury type.</p>	<input type="checkbox"/>	<input type="checkbox"/>
40	SG-R3765	<p>Open the new dialog from the context menu with "Configuration -> EM -> Locations -> Guided Location Configuration..."</p>	<p>The new dialog opens and only the county dropdown and county dialog button are enabled.</p>		

	RMsis ID	Test Steps	Expected Result	P	F
41	SG-R3765 SG-R3766	Select a county, roadway, direction, reference point, and lane mapping using the dropdown menus.	Each dropdown should enable the next section. Once a lane map is selected, the existing locations grid will be enabled and the "Create Location" button will be enabled. The existing locations grid will show any locations that have the same county, roadway, direction, reference point, and lane map.	<input type="checkbox"/>	<input type="checkbox"/>
42	SG-R3765 SG-R3766	Create a new location.	Clicking the "create location" button pops open a modal that displays the location configuration grid. The grid is automatically populated with a new row that includes the lane mapping and reference point selected in the main dialog. The county, roadway, and direction dropdowns also populate to the values in the main dialog. The user is able to save the new location and close out of the modal.	<input type="checkbox"/>	<input type="checkbox"/>
43	SG-R3765	Change the county, roadway, reference point, and lane map after they have been initially selected.	Changing the county dropdown will reset the roadway and direction dropdowns, but not the reference point or lane map. Changing the roadway will reset the direction dropdown, but the county should not change. Changing the direction, reference point, or lane map will not reset any other dropdowns.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
44	SG-R3765 SG-R3767	Configure a County by selecting "Edit Counties...". Click "New County", save the new county, and click "Close".	The county configuration dialog appears inside a modal popup. All controls that are not part of the modal are disabled. The user is able to add a new county, close the modal, and select the newly added county in the county dropdown.	<input type="checkbox"/>	<input type="checkbox"/>
45	SG-R3765	Follow the same steps are 4.A, but this time remove the currently selected county.	After the county is removed, the county dropdown is cleared. The user is able to select a different county, but not the county that was just removed.	<input type="checkbox"/>	<input type="checkbox"/>
46	SG-R3765	Configure a County by selecting "Configure Counties...". Click "Add County", do not save the new county, and click "Close".	The dialog prompts the user to confirm that they want to close without saving. Clicking "no" will return to the modal dialog with their unsaved changes still intact. Clicking "yes" will return to the parent dialog without saving any changes.	<input type="checkbox"/>	<input type="checkbox"/>
47	SG-R3765 SG-R3767	Configure a Roadway by selecting "Add Roadways...". Click "Add Roadway", save the new roadway, and click "Close".	The roadway configuration dialog appears inside a modal popup. All controls that are not part of the modal are disabled. The user is able to add a new roadway, close the modal, and select the newly added roadway in the roadway dropdown.	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
48	SG-R3765 SG-R3767	Select a roadway and then select "Configure Roadways..." Add a new direction to the roadway. Save the modal dialog and close it.	The roadway configuration dialog appears inside a modal popup with the selected roadway from the dropdown in the parent dialog already selected in the grid in the child dialog. Once the new direction is added, it can be saved and will appear in the list of directions in the direction dropdown.	<input type="checkbox"/>	<input type="checkbox"/>
49	SG-R3765, SG-R3767	Select a reference point and then select "Configure Reference Points". Add a new reference point. Save the modal dialog and close it.	The reference point configuration dialog appears inside a modal popup. All controls that are not part of the modal are disabled. The user is able to add a new reference point, close the modal, and select the newly added reference point in the reference point dropdown.	<input type="checkbox"/>	<input type="checkbox"/>
50	SG-R3765	Configure a lane map by selecting "Configure Lane Maps...". Click "Add Lane Map", save the new lane map, and click "Close".	The lane map configuration dialog appears inside a modal popup. All controls that are not part of the modal are disabled. The user is able to add a new lane map, close the modal, and select the newly added lane map in the lane map dropdown.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.14IC-13: EM Intersections (4187)

2.14.1 Objectives

The objective of this integration case is to test the ability of the system to configure and use EM Intersections as part of event management.

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: EM Intersection Requirements

RMsis ID	Requirement Text
SG-R3679	The software will allow the user to add, modify, and delete intersection locations in the EM Location Configuration Dialog.
SG-R3681	Intersection configuration will contain a read-only visual depiction of the approach configuration and allow the user to modify the approach angle to the intersection.
SG-R3682	Each intersection will have a County, Short Name, Long Name, Description, Sort Order, Latitude/Longitude, and a Publish flag.
SG-R3683	Each approach in an intersection will contain its Roadway, Direction, Lane Map, and Heading as configurable fields.
SG-R3871	The Heading will default to the degree for the selected Direction Value • East with default to 0 degrees • North will default to 90 degrees • West will default to 180 degrees • South will default to 270 degrees
SG-R3684	An intersection will contain 2 or more approaches configured by the user.
SG-R3686	The software will allow the user to select an intersection as a location for an event.
SG-R3687	Intersections will be available to select from the list of reference points along with point-based reference points.
SG-R3688	When selecting a location for an event and filtering locations by county, roadway, and direction, intersection locations will be available as long as the intersection's county and any of its associated roadways and directions match the filter criteria.
SG-R3872	When viewing the lane blockage as part of an event, the user will be able to view a read-only visual depiction of the intersection including current lane blockage.
SG-R3689	When an intersection is selected as the location for an event, the event record will contain the intersection location, each of the approaches, and lane blockage information for each approach.
SG-R3690	The software will allow the user to modify lane blockage for each approach in the event location.
SG-R3691	The software will generate suggested response plans for intersection locations by selecting suggested devices using the roadway and direction information for each approach.
SG-R3693	The software will support choosing intersections for reporting.
SG-R3694	When selecting a location for a report and filtering locations by county, roadway, and direction, intersection locations will be available as long as the

	intersection's county and any of its associated roadways and directions match the filter criteria.
SG-R3695	Report templates that accept event location filters will be modified to handle intersections locations.
SG-R3697	The software will provide a tool to assist users in configuring intersection on a roadway.
SG-R3698	The tool will accept as input a county, roadway, start and end points, and a set of shapefiles and will output a list of intersections for the specified roadway with physical locations, approaches, and lane types.
SG-R3699	The tool will allow the user to view, add, modify or delete the proposed intersection configuration.
SG-R3700	The tool will provide a method for a user with permissions to import the proposed intersection configuration into the SunGuide configuration.
SG-R3701	The tool will allow a user with permission to import approved intersection locations.

2.14.3 Test Approach

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

- An import tool will be used to get new intersection locations.
- Configuration dialogs will be tested to ensure the fields are being appropriately captured.
- Events will be managed using the new intersection-based locations.
- A new location configuration dialog will be tested to ease to process of creating an event location.

2.14.4 Test Descriptions

Subsystems Required

- EM
- 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	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3679 SG-R3681 SG-R3682 SG-R3683 SG-R3871	<p>Create a new intersection in the Location Configuration Dialog.</p> <p>Verify the top pane contains County, Short Name, Long Name, Description, Latitude/Longitude, and a Publish flag.</p> <p>Configure 2 or more approaches in the bottom pane of the dialog.</p> <p>Verify the bottom pane contains Sort Order, Roadway, Direction, Lane Map, and Heading as configurable fields.</p> <p>Set the direction to Northbound and note the heading value.</p> <p>Set the direction to Eastbound and note the heading value.</p> <p>Set the direction to Southbound and note the heading value.</p> <p>Set the direction to Westbound and note the heading value.</p> <p>Verify the headings for each approach and modify the values if desired.</p> <p>Verify the 'Overview' tab displays the approaches using the currently set heading values.</p> <p>Modify the heading values on the 'Approaches' tab and verify the 'Overview' tab reflects the new values.</p> <p>Save the location and verify the 'Overview' tab reflects the headings in once the save operation is complete.</p>	<p>'Overview' tab accurately reflects the approaches heading value in the visual depiction of the approaches.</p> <p>The top pane contains County, Short Name, Long Name, Description, Latitude/Longitude, and a Publish flag.</p> <p>The bottom pane Sort Order, Roadway, Direction, Lane Map, and Heading as configurable fields.</p> <p>When setting the direction the heading is automatically selected.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
2	SG-R3679	<p>Add another intersection location.</p> <p>Modify the intersection location by changing the number of approaches, headings on the approaches, and the roadway of the approaches. Save the changes,</p> <p>Delete the location.</p>	<p>Users are able to modify the intersection locations.</p> <p>Users are able to delete the intersection locations.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3679 SG-R3684	<p>Create a new location and give it an offset of 'At Intersection'.</p> <p>Configure a single approach for the location.</p> <p>Attempt to save the location.</p>	<p>Save operation fails because an intersection requires 2 or more approaches.</p>	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3686 SG-R3687 SG-R3688	<p>Open the context menu in the Map.</p> <p>Navigate to 'Event Management' > 'Add New Event'</p> <p>Proceed through the drop down menus to select the intersection location created in step 1.</p> <p>Cycle through selection each roadway associated to an approach on the configure location, and then each direction for each roadway.</p>	<p>The intersection location is displayed in the drop down menu.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
5	SG-R3686 SG-R3689	<p>Open the context menu in the Map.</p> <p>Navigate to 'Event Management' > 'Add New Event'</p> <p>Proceed through the drop down menus to select the intersection location created in step 1</p> <p>Create the event at the configured intersection location.</p> <p>In the 'Event Details' dialog expand the 'Location/Congestion' section.</p> <p>Verify the right half of the 'Location/Congestion' control displays a tab for each approach configured for the underlying location and has the corresponding roadway and direction set for each approach.</p>	<p>The event record in the 'Event Details' dialog displays an associated tab within the 'Location/Congestion' for each approach.</p> <p>The 'Location/Congestion' control allows the user to set congestion and an associated head/tail for each configured approach along the same roadway and direction as the underlying approach.</p>	<input type="checkbox"/>	<input type="checkbox"/>
6	SG-R3686 SG-R3690 SG-R3872	<p>Open the context menu in the Map.</p> <p>Navigate to 'Event Management' > 'Event List'.</p> <p>Select the event created in step 7.</p> <p>Expand the 'Lane Blockage' section.</p> <p>Verify the control displays a tab for each approach configured for the underlying location and has the corresponding roadway and direction set for each approach.</p> <p>Verify each tab allows you to edit the lane blockage for each approach.</p> <p>Verify the visual depiction the lane blockage in the Overview Tab.</p>	<p>The event record in the 'Event Details' dialog displays an associated tab within the 'Lane Blockage' sections for each approach.</p> <p>The 'Lane Blockage' control allows the user to set blockage for each configured approach.</p> <p>The software provides a visual depiction on the lane blockage in the Event Details Dialog.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
7	SG-R3686 SG-R3691	<p>Ensure there is at least one DMS configured down stream from the intersection configured for testing.</p> <p>Navigate to 'Event Management' > 'Event List'.</p> <p>Select the event created in step 7.</p> <p>Use the 'Open Response Plan' button to open the 'Response Plan' Dialog.</p> <p>In the 'Response Plan' Dialog click the 'Get New Suggestion' button.</p> <p>Verify the response plan returned included the downstream DMS on each approach.</p>	The suggested response plan retrieves devices down stream of the intersection along each configured approach.	<input type="checkbox"/>	<input type="checkbox"/>

	RMSis ID	Test Steps	Expected Result	P	F
8	SG-R3693 SG-R3694 SG-R3695	<p>Open the context menu in the Map.</p> <p>Navigate to 'Reports'</p> <p>Perform the steps below for each of the following reports:</p> <ul style="list-style-type: none"> • Agency Response Times • Event Details • Event Lane Blockage • Event Level, Event List • Event List with Lane Blockage • Event Response Times • Event Summary • FHP Request • Notifier Contact Summary • Ramp Event List • Road Ranger Assists • Road Ranger Void Activity • Secondary Crash • Secondary Event • SIRV Assists Reports <p>Verify the intersection location configured in step 1 is available in the drop down for each configured roadway and direction associated with the locations approaches.</p> <p>When the reports are run, metrics from intersections are not included in the reports.</p>	<p>The location is available for each roadway and direction pair of each associated roadway.</p> <p>Intersections locations are not included in the performance metrics for single approach events.</p>	<input type="checkbox"/>	<input type="checkbox"/>

	RMsis ID	Test Steps	Expected Result	P	F
9	SG-R3697	<p>Open the SunGuide Toolset utility.</p> <p>Navigate to the 'Import Intersections' tab.</p> <p>Look at the fields available when the "Generate Pre-Requisite Files" radio button is selected.</p> <p>Select the "Create Intersections" radio button.</p> <p>Notice the new fields available for use.</p>	<p>The tool provided is part of the SunGuide Toolset.</p> <p>When "Generate Pre-Requisite Files" is selected, the folder where the ShapeFiles are located is needed as a parameter.</p> <p>When the "Create Intersections" radio button is selected, a user can select County, Roadway, Direction, Start and End Points as defined in SunGuide and the generated CSV file.</p>	<input type="checkbox"/>	<input type="checkbox"/>

<p>10</p>	<p>SG-R3698 SG-R3699</p>	<p>Select the "Create Intersections" radio button.</p> <p>Open to the SunGuide Config file by clicking on the button to the right of the text box in the Connection Options.</p> <p>Input a User Name and Password which will be used to connect to SunGuide.</p> <p>Click on the "Connect" Button.</p> <p>When connected, the "County" combobox will be populated with the Counties configured in the SunGuide system.</p> <p>Open the Intersection CSV file by click on the button to the right of the CSV File text box.</p> <p>Wait for the toolset to load the file. The toolset will remain responsive to input while loading the data. Verify the data has been loaded by looking at the log window in the toolset.</p> <p>Once loaded, select a Roadway, Direction, Starting Intersection and Ending Section.</p> <p>Click on the "Run" button.</p> <p>An Edit Intersection window will popup which will display all the possible locations.</p> <p>Select a Location from the Data Grid.</p> <p>Notice the list of approaches are listed in the second half of the dialog.</p> <p>Remove all locations except for one by selecting a location and pressing the delete key.</p>	<p>The toolset allows a user with permission to import intersections based on parameters entered.</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>
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Software Integration Case Procedures

	RMSis ID	Test Steps	Expected Result	P	F
		<p>Select the lone location in the Data Grid.</p> <p>Edit the Short Name to any string less than 20 characters.</p> <p>Edit the Long Name.</p> <p>Edit the Description.</p> <p>Change the County.</p> <p>For one of the approaches, change the Direction.</p> <p>Click the "Save" button.</p> <p>View the toolset log, notice the tool is adding LaneMaps, Roadways, ReferencePoints, and finally the Locations for the Intersection.</p>			
11	<p>SG-R3700</p> <p>SG-R3701</p>	<p>Change the SunGuide Username/Password to an invalid one or one without permissions to add location data in the Toolset.</p> <p>Press on the "Run" button.</p> <p>Press the "Save" button on the popup window.</p> <p>Notice the failures in the Toolset Log Window about the user not having permission.</p>	<p>The system will not allow a user without permission to import intersection locations.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.15IC-14: WWD Crash Descriptor (4650)

2.15.1 Objectives

The objective of this integration case is to test the ability of the system set a wrong way driving event flag as part of an event.

2.15.2 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 14: Executive Notification Requirements

RMsis ID	Requirement Text
SG-R3639	An event will have an attribute indicating the event is associated with Wrong Way Driving.
SG-R3640	If the event type is set to "Wrong Way Driver", the attribute will automatically be set by the system.
SG-R3641	Once the Wrong Way Driving attribute is set, an operator must manually toggle the attribute to clear it.
SG-R3869	The system will allow the user to audit the Wrong Way Driving attribute of an event
SG-R3644	When an operator manually creates an event with event type of "Wrong Way Driver", the operator will be presented with a dialog to ask if they would like to automatically create and activate a response plan.
SG-R3645	If the operator chooses not to create and activate a response plan, the system will only create an event.
SG-R3646	If the operator chooses to create and activate a response plan, the event will be created, a response plan will be created, and the response plan will be automatically activated.

2.15.3 Test Approach

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

- Regular and Wrong Way driving events will be created to show the use of the flag on the event.
- Various scenarios based on whether a user wants to create a response plan will be tested.

2.15.4 Test Descriptions

Subsystems Required

- EM
- Operator Map

Devices Required

The following devices will be used during the test:

- None

Software Integration Case Procedures

Configuration Required

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

- None

Test Procedure

Test Start Date / Time	
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Perform the following steps from a workstation:

	RMsis ID	Test Steps	Expected Result	P	F
1	SG-R3644 SG-R3646 SG-R3639 SG-R3640	Right click on the map and create a new Wrong way driving event. Choose to create and activate a response plan.	A popup asks the user if they would like to activate a response plan. A response plan is created and activated The Wrong Way Driver box is checked.	<input type="checkbox"/>	<input type="checkbox"/>
2	SG-R3641	Using the event from the last step, change the event type to something that is not wrong way driver. Save the event. Clear the Wrong Way Driver box and save the event.	The Wrong Way Driver box remains checked when the user makes changes to the Event Type. Users can manually modify the state of the Wrong Way Driver box.	<input type="checkbox"/>	<input type="checkbox"/>
3	SG-R3639 SG-R3640	Create a WWD alert with the simulator. Then resolve it by creating an event.	Event will still be created, but WWD checkbox will be checked. In the case of IDS, the user is not prompted to create a response plan or not.	<input type="checkbox"/>	<input type="checkbox"/>
4	SG-R3644 SG-R3645	Right click on the map and create a new Wrong way driving event. Choose to only create the event with no response plan.	Event will be created without an active response plan.	<input type="checkbox"/>	<input type="checkbox"/>

Software Integration Case Procedures

	RMsis ID	Test Steps	Expected Result	P	F
5	SG-R3641	Chose to audit one of the previously created events. Toggle the state of the Wrong Way Driver box and save the event. Check the state of the event in the database to ensure the flag changed to the new value.	An event's Wrong Way Driver flag can be audited.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

2.16IC-15: JIRA Issues

2.16.1 Objectives

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

2.16.2 Requirements to be Tested

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

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 workstation will run through different scenarios to test JIRA issues that have been resolved.
- Notes will be made if a test step fails indicating the system and type of failure.

2.16.4 Test Descriptions

The following sections detail the tests to be performed.

2.16.5 Footprints to be tested

- SG-3939 – Row Highlighting

2.16.5.1 FP 3939 – Stronger Highlighting in WPF dialogs

Reporting District: D3

I am entering this issue on behalf of District 3. I've included several key D3 staff members in the CC field, so they can continue the conversation generated by this issue.

The D3 operators commented that the highlighting in WPF dialogs is too faint to see in some cases. Would you please enhance SunGuide to have stronger highlighting in all WPF dialogs?.

The following sections detail the tests to be performed.

Subsystems Required

- TSS
- EM
- CCTV
- 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	
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Perform the following steps from a workstation:

	Test Steps	Previous Result	Expected Result	P	F
1	<p>Under the Preferences >> User Preferences in the Operator Map context menu, select a new column to highlight the selected row background as well as a new text color.</p> <p>Go the DMS status dialog and select a row.</p> <p>Select a new cell in the row and notice the cell color change.</p> <p>Go the CCTV status dialog and select a row.</p> <p>Select a new cell in the row and notice the cell color change.</p> <p>Go the Event List dialog and select a row.</p> <p>Select a new cell in the row and notice the cell color change.</p>	<p>There was a color change in the previous version, but it was faint on some monitor screens.</p>	<p>Operators can choose the selected color and the contract between selected and unselected rows can be made to be much more drastic.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date & Time	
FDOT Witness	
SwRI Witness	

3. Notes