

SunGuide®:

Software Integration Case Procedures

SunGuide-SICP-9.0



Prepared for:

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List of Acronyms

AVL	Automatic Vehicle Location
BMS	Beacon Management Subsystem
C2C	Center to Center
CCTV	Closed Circuit Television
CF	Configuration File
CAN	Contact Notification Application
DMS	Dynamic Message Sign
EH	Executive Handler
EM	Event Management
FAT	Factory Acceptance Test
FDOT	Florida Department of Transportation
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
LCS	Lane Control System
MLS	Managed Lanes Subsystem
NTCIP	Nation Transportation Communication for ITS Protocol
ONVIF	Open Network Video Interface Forum
RISC	Rapid Incident Scene Clearance
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
9.0	December 3, 2023	Initial release for Release 9.0 functionality

1. Scope

1.1 Document Identification

This document serves as the Software Integration Case Procedures (SICP) for Release 9.0 of the SunGuide® software. This version is implementing:

Issue Number	Issue
SG-1053	Add filter in reports for "Comment Type" and Comment keyword search
SG-5668	WWD Detection on Mainlines using MVDS
SG-6131	Involved Vehicle Make and Model Automatically Approved
SG-6417	Configure RPG Distance for DMS Messages when Travel Lanes are Cleared
SG-2964	Multiple Logical Devices Mapped to Same Physical Device
SG-6135	SunGuide EM Ribbon Update
SG-6193	Enhance the Contact section in SunGuide
SG-4562	Nearest camera for SPARR created events
SG-3047	Multi-select cameras into new video wall window from map
SG-5364	Request to enhance for Vehicle dispatch documentation
SG-5682	Wrong Way Driver response plan's location
SG-3232	Associating FHP and TSS Alerts to Already Created Events
SG- 4758	RWIS Alerts need the alert type and value added
SG-6397	RISC Module Chronology Report
SG-4385	Apply On a per day basis filter to device report
SG-6312	Add Device and Link Geographic Filtering into C2C Subscriber
SG-6463	Status Log Level Monitor
SG-4941	Emails for Device Issues
SG-6355	Security improvements
SG-5876	Issue 564 Phase 3
SG-6367	LCS module for SunGuide
SG-6201	Add EM audit events to DAR XML feed

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

1.2 Project Overview

The Florida Department of Transportation (FDOT) is conducting a program that is developing SunGuide software. 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. The goal of the SunGuide software is to have a common software base that can be deployed throughout the state of Florida. The SunGuide software development effort is based on ITS software available from the state of Texas; significant customization of the software is being performed as well as the development of new software modules. The following figure provides a graphical view of the software to be developed:

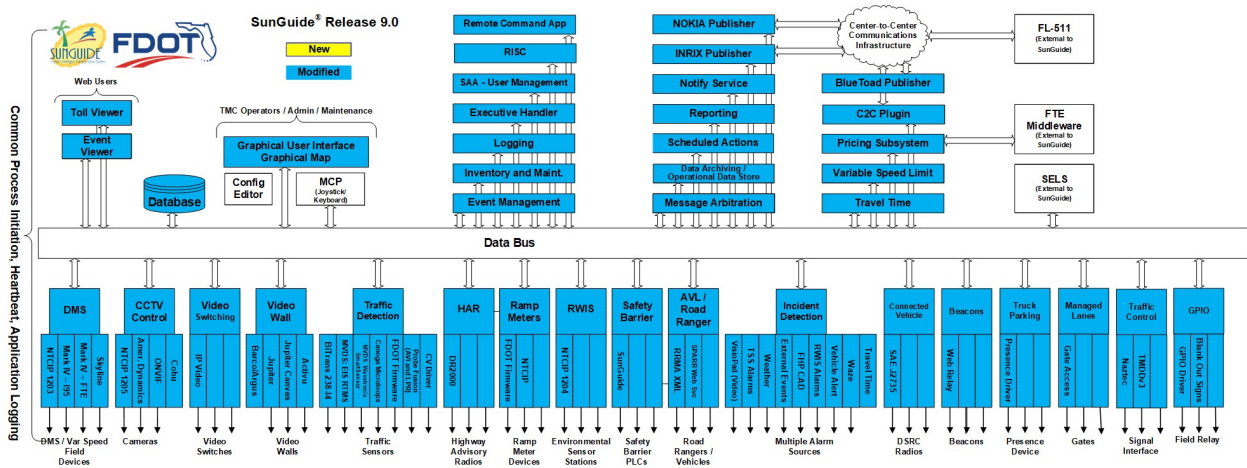


Figure 1-1 - High-Level Architectural Concept

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 017: Letter to SwRI for BE492, March 3, 2021.
- SunGuide Project website: <http://sunguide.datasys.swri.edu>.

1.4 Contacts

The following are contact persons for the SunGuide software project:

- Derek Vollmer, ITS Section, TSM&O, Central Office, derek.vollmer@dot.state.fl.us, 850-410-5606
- Christine Shafik, ITS Section, State TSM&O Software Engineer, Central Office, Christine.Shafik@dot.state.fl.us, 850-410-5615
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- Tucker Brown, SwRI Project Manager, tbrown@swri.org, 210-522-3035
- AJ Skillern, SwRI Software Project Manager, askillern@swri.org, 210-522-5207

For current contact information please refer to this link: <http://sunguidesoftware.com/contact-us>

2. Integration Cases

The requirements contained in the following sections were extracted from the Software Requirements Specification (SRS).

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	Issue Number	Issue
1	SG-1053	Add filter in reports for "Comment Type" and Comment Keyword
2	SG-4758	RWIS Alerts need the type and value added
3	SG-6193	Enhance the Contact section in Sunguide
4	SG-6556	Generic Alert Interface
5	SG-6131	Involved Vehicle Make and Model Automatically Approved
6	SG-2964	Multiple Logical Devices Mapped to Same Physical Device
7	SG-3047	Multi-select cameras into new video wall window from map
8	SG-6355	Security Improvements - Password Security
9	SG-6135	Sunguide EM Ribbon Update
10	SG-4941	Emails for Device Issue
11	SG-4562	Nearest Camera for Sparr created events
12	SG-6201	Add EM audit events to DAR XML feed
13	SG-5364	Request to enhance for Vehicle dispatch documentation
14	SG-5876	Ceased Use
15	SG-3232	Associating FHP and TS Alerts to Already Created Events
16	SG-6463	Status Log Level Monitor
17	SG-6312	Add Device and Link Geographic Filtering into C2C Subscriber
18	SG-5668	WWD Detection on Mainlines using MVDS
19	SG-6355	Security Improvements - Inter-Process Communication (Encryption)
20	SG-6367	LCS module for SunGuide
21	SG-4385	Apply on a per day basis filter to device report
22	SG-6355	Security Improvements - Password Hashing Complexity
23	SG-6397	RISC Module Chronology Report
24	SG-6417	Configure RPG Distance for DMS Messages when Travel Lanes are Cleared
25	SG-5682	Wrong Way Driver Response Plan's location

2.1.1 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

2.1.2 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*.

2.1.3 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.

2.1.4 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 9.0 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.

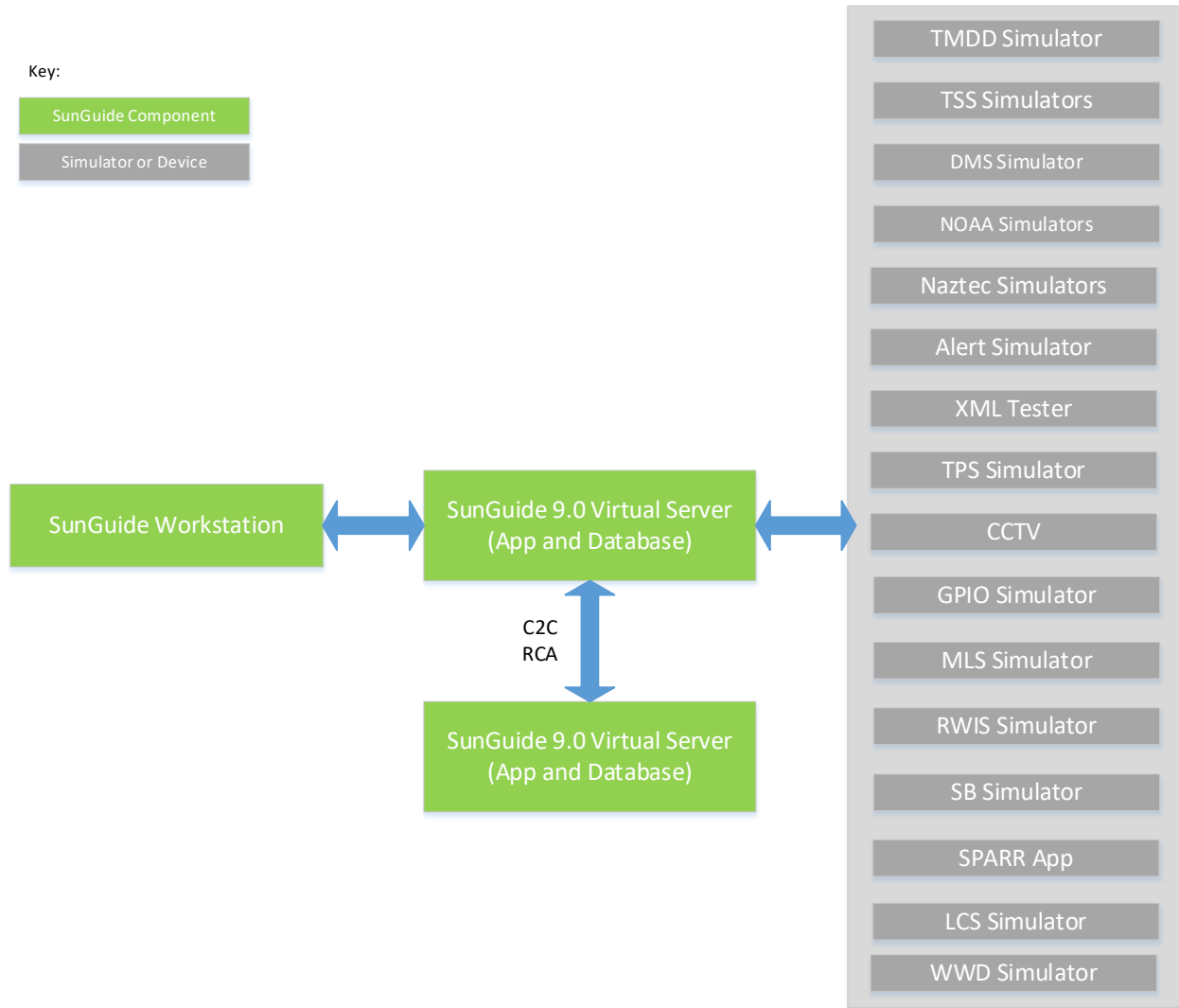


Figure 2-1: Hardware/Software Testing Environment

2.1.5 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.

2.1.6 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.

3. IC-1: SG-1053 Add filter in reports for "Comment Type" and Comment Keyword

3.1 Objectives

The objective of this integration case is to test the requirements associated with adding additional filter parameters to the reporting dialog and event chronology report.

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.

Requirement Number	Requirement Text
SRT-967	The system will support a Comment Type filter for use in reporting that will allow a user to search for a specific comment type in the comments of an event.
SRT-968	The system will support a Comment Text filter for use in reporting that will allow a user to perform a case insensitive search for specific text in the comments of an event.
SRT-969	The system will support a Keyword filter for use in reporting that will allow a user to perform a case insensitive search for specific text in the event chronology of an event.
SRT-970	The Event Chronology report will allow the user to filter the events in the report based on a Comment Type filter, Comment Text filter, or a Keyword filter.

3.3 Test Approach

These tests will show the functionality of filtering events returned by the event chronology report using the comment type filter, comment text filter, and event chronology keyword filter.

3.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- RS
- EM

Configured Devices

- N/A

Other Prerequisite Conditions

- An event with a valid status that has the word "FOO" with the specified casing present in a comment of any type except "General". The word "BAZ" should be present in the chronology.
- An event with a valid status that has the word "BAR" with the specified casing present in a comment using the type "General". The word "BAZ" should be present in the chronology.
- An event with a valid status that has the word "BAZ" with the specified casing in the chronology, but not in a comment. No comment associated to the event should use the comment type "General".
- An event with a valid status that has the word "BAR2" with the specified casing present in a comment using the type "General", and the word "BAZ" with the specified casing should be present in the chronology but not in a comment.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-967 SRT-968 SRT-969	Open the Reporting dialog and select the Event Chronology report. Observe the list of available parameters.	The system supports a Comment Type filter for use in reporting that will allow a user to search for a specific comment type in the comments of an event. The system supports a Comment Text filter for use in reporting that will allow a user to perform a case insensitive search for specific text in the comments of an event. The system supports a Keyword filter for use in reporting that will allow a user to perform a case insensitive search for specific text in the chronology of an event.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-970	Specify a from and to interval of event IDs that include the pre-configured events. Run the report with no comment text filter, no keyword filter, and a comment type filter of "Any".	The Event Chronology report allows the user to filter the events in the report based on a Comment Type filter, Comment Text filter, or a Keyword filter.	<input type="checkbox"/>	<input type="checkbox"/>

		Observe the completed report.	All the pre-configured events are returned.		
3	SRT-970	Reset the report parameters. Specify a from and to interval of event IDs that include the pre-configured events, and a comment type of "General". Run the report. Observe the completed report.	The Event Chronology report allows the user to filter the events in the report based on a Comment Type filter, Comment Text filter, or a Keyword filter. Only the events that have comments using the "General" comment type are returned.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-970	Reset the report parameters. Specify a from and to interval of event IDs that include the pre-configured events, and a comment text value of "foo". Run the report. Observe the completed report.	The Event Chronology report allows the user to filter the events in the report based on a Comment Type filter, Comment Text filter, or a Keyword filter. Only the events that have comments with the text "FOO" are returned, regardless of case.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-970	Reset the report parameters. Specify a from and to interval of event IDs that include the pre-configured events, a comment type of "General", and a comment text of "bar". Run the report. Observe the completed report.	The Event Chronology report allows the user to filter the events in the report based on a Comment Type filter, Comment Text filter, or a Keyword filter. Only the events that have "General" comments with the text "BAR" are returned, regardless of case.	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-970	Reset the report parameters. Specify a from and to interval of event IDs that include the pre-configured events, and a keyword text value of "baz". Reset the comment type filter to "Any" and clear the comment text filter value. Run the report. Observe the completed report.	The Event Chronology report allows the user to filter the events in the report based on a Comment Type filter, Comment Text filter, or a Keyword filter. Only the events that have chronology entries with the text "BAZ" are returned, regardless of case.	<input type="checkbox"/>	<input type="checkbox"/>

7	SRT-970	<p>Reset the report parameters. Specify a from and to interval of event IDs that include the pre-configured events, a comment type of "General", a comment text value of "bar2", and a keyword value of "baz". Run the report. Observe the completed report.</p>	<p>The Event Chronology report allows the user to filter the events in the report based on a Comment Type filter, Comment Text filter, or a Keyword filter. Only events that have comments of type "General" with the text "BAR2" present, and a chronology entry using the text "BAZ" are returned, regardless of case</p>	<input type="checkbox"/>	<input type="checkbox"/>
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

4. IC-2: SG-4758 RWIS Alerts need the type and value added

4.1 Objectives

The objective of this integration case is to test the requirements associated with adding alert type and threshold/current values to the display of RWIS alarms.

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.

Requirement Number	Requirement Text
SRT-1029	The RWIS alert dialog will display the threshold type, the threshold value, and the triggering measurement at the time of the alert.

4.3 Test Approach

These test steps will show the addition of alarm value type and value for an RWIS alarm.

4.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- Databus
- SAA
- IDS
 - IDS RWIS Alarm Driver
- RWIS
 - RWIS Driver

Configured Devices

- A simulated RWIS device

Other Prerequisite Conditions

- An RWIS threshold configured for the simulated RWIS device for low visibility.

Test Procedure

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

Requirement Number(s)	Test Steps	Expected Results	P	F
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1	<p>SRT-1029</p>	<p>Lower the simulated visibility value until an alert is generated for the simulated RWIS device.</p> <p>Open the System Alerts dialog. Open the alert details for the RWIS alert that was triggered.</p> <p>Observe the list of available fields for the alert data.</p>	<p>The RWIS alert dialog displays the threshold type, the threshold value, and the triggering measurement at the time of the alert.</p>	<input type="checkbox"/>	<input type="checkbox"/>
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

5. IC-3: SG-6193 Enhance the Contact section in SunGuide Objectives

The objective of this integration case is to test the requirements associated with changing the contact section of the event details dialog and timestamp field.

5.1 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.

Requirement Number	Requirement Text
SRT-989	When entering a contact and the user has chosen an agency, the software will allow the user to select from an existing contact or manually type a contact.
SRT-990	When entering a contact, the timestamp field will automatically be filled with the current time but will allow the user to modify the time.

5.2 Test Approach

These tests will show that users can enter a preexisting contact for an agency and edit the timestamp field.

5.3 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- Databus
- SAA
- CNA
- EM

Configured Devices

- N/A

Other Prerequisite Conditions

- N/A

Test Procedure

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

Requirement	Test Steps	Expected Results	P	F
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	Number(s)				
1	SRT-989 SRT-990	Create a new event. Under the contacts section, click the button to add a new contact. Select an agency for the new contact entry. Select a contact name from the list. Observe the timestamp associated with the contact entry.	When entering a contact and the user has chosen an agency, the software allows the user to select from an existing contact. When entering a contact, the timestamp field is automatically filled with the current time.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-990	Edit the timestamp associated with the contact entry. Save the event.	When entering a contact, the user has the ability to modify the time.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-989	Click the button to add a new contact. Select an agency for the new contact entry. Instead of picking from the drop down, type a new contact name into the box. Save the event.	When adding a contact and selecting an agency, the software allows the user to manually type the contact in.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-990	Change the timestamp for an existing contact entry.	When entering a contact, the user has the ability to modify the time.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
FDOT Witness	
SwRI Witness	

6. IC-4: SG-6556 Generic Alert Interface

6.1 Objectives

The objective of this integration case is to test the requirements associated with the receiving alerts from a generic protocol source.

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.

Requirement Number	Requirement Text
SRT-1214	The software will accept alerts defined by the FDOT IDS Alert Protocol.
SRT-1215	The software will implement the protocol defined by the FDOT document “FDOT IDS Alert Protocol - SunGuide Requirements_072723.docx”.
SRT-1216	When an alert is triggered through this protocol, an alert will be displayed in the Alert List.
SRT-1217	The alert will contain alert ID, timestamp, alert type, update timestamp, description, device ID, device name, latitude, longitude, location description, slideshow of images, and a list of custom fields if the information was provided in the alert.
SRT-1218	For the alert, the user will have the option to create a new event, create a secondary event, associate to an existing event, acknowledge, or dismiss the alert.
SRT-1219	The software will store alert ID, timestamp, alert type, and location description in the database.
SRT-1220	If available in the alert, the software will store the update timestamp, description, device ID, device name, latitude, longitude, list of image URLs, list video URLs, video replay URL, and a list of custom fields in the database.

6.3 Test Approach

The test steps will validate the system receiving alerts from a generic protocol source.

6.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CNA
- EM
- IDS
 - IDS Generic Alert Protocol Driver

Configured Devices

- N/A

Other Prerequisite Conditions

- A Postman session configured to point to the Generic Alert web service at `http://<testserver>:44346/GenericAlerts/v1/alert`
- The config file section for the Generic Alert driver should have the following configuration settings:
 - The `contactInfo` agency should be a valid EM agency.
 - The `contactInfo` contact should be a valid CNA contact that belongs to the EM agency.
 - The `commentType` should be a valid EM comment type.
 - The `webServiceName` should be `GenericAlerts`.
 - The `webServicePort` should use port `44346`.
 - The `protocol` should be `http://`
 - The `alertImagePath` should point to a valid location on the test server.
- 10 images available at the path `http://<testserver>//images/<image_filename>`

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1214 SRT-1215 SRT-1216	Using Postman, send an alert to the Generic Alert Protocol Driver. In the alert data, only send the <code>alertId</code> , <code>alertTimestamp</code> , <code>alertType</code> , and location description fields. Open and log into the Operator Map. Open the System Alerts dialog. Review the list of open alarms.	The software accepts alerts defined by the FDOT IDS Alert Protocol. The software implements the protocol defined by the FDOT document "FDOT IDS Alert Protocol - SunGuide Requirements_072723.docx". When an alert is triggered through this protocol, an alert is	<input type="checkbox"/>	<input type="checkbox"/>

			displayed in the Alert List.		
2	SRT-1217	From the System Alerts dialog, right click on the alarm that was generated and open the Alarm Details dialog. Observe and click the button at the top-right corner of the dialog labeled 'Pop-out' to open the Handle Alarm dialog. Review the list of alarm fields and their reported values.	The alert contains the alert ID, timestamp, and alert type.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1219	Review the data in the IDS_INCIDENT_ALARM, IDS_GENERIC_ALERT_DATA, tables for the created alarm.	The software stores alert ID, timestamp, and alert type in the database.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-1218	From the Handle Alarm dialog for the generated alarm, review the list of available alarm handling options. From the System Alerts dialog, right click on the alarm that was generated and open the Alarm Details dialog. Review the list of alarm fields and their reported values. From the Handle Alarm dialog for the generated alarm, resolve the alarm by creating a new event.	For the alert, the user has the option to create a new event, create a secondary event, associate to an existing event, acknowledge, or dismiss the alert. The user can resolve the alarm by creating a new event for the alert.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1214 SRT-1215 SRT-1216 SRT-1217	Using Postman, generate another alarm. In the alert data, supply a value for all possible alarm fields, including at least one snapshot URL to a preconfigured image, one video URL, and one custom field. From the System Alerts dialog, open the Handle Alarm dialog. Review the list of alarm fields and their reported values.	The software accepts alerts defined by the FDOT IDS Alert Protocol. The software implements the protocol defined by the FDOT document "FDOT IDS Alert Protocol - SunGuide Requirements_072723.docx". When an alert is triggered through this protocol, an alert is displayed in the Alert List.	<input type="checkbox"/>	<input type="checkbox"/>

			The alert contains the alert ID, timestamp, alert type, update timestamp, description, device ID, device name, latitude, longitude, location description, slideshow of images, and a list of custom fields.		
6	SRT-1219 SRT-1220	Review the data in the IDS_INCIDENT_ALARM, IDS_GENERIC_ALERT_DATA, IDS_GENERIC_ALERT_CUSTOM_FIELDS, and FDOT_OWN.IDS_GENERIC_ALERT_MEDIA_DATA tables for the created alarm.	The software stores the alert ID, timestamp, and alert type in the database. The software stores the update timestamp, description, device ID, device name, latitude, longitude, location Description, list of image URLs, list video URLs, video replay URL, and a list of custom fields in the database.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1218	From the Handle Alarm dialog for the generated alarm, resolve the alarm by creating a new secondary event.	The user can resolve the alarm by creating a new secondary event for the alert.	<input type="checkbox"/>	<input type="checkbox"/>
8	SRT-1214 SRT-1215 SRT-1216 SRT-1217 SRT-1218	Using Postman, generate another alarm. In the alert data, supply a value for all possible alarm fields, including 10 snapshot URLs to preconfigured images, 10 video URLs, and 10 custom fields. From the System Alerts dialog, open the Handle Alarm dialog. Resolve the alarm by associating the alarm to an existing event.	The software accepts alerts defined by the FDOT IDS Alert Protocol. The software implements the protocol defined by the FDOT document "FDOT IDS Alert Protocol - SunGuide Requirements_072723.docx". When an alert is triggered through this protocol, an alert	<input type="checkbox"/>	<input type="checkbox"/>

			<p>is displayed in the Alert List.</p> <p>For the alert, the user has the option to create a new event, create a secondary event, associate to an existing event, acknowledge, or dismiss the alert.</p> <p>The user can resolve the alarm by associating it to an existing event.</p>		
9	<p>SRT-1214 SRT-1215 SRT-1216 SRT-1217 SRT-1218</p>	<p>Using Postman, generate another alarm. In the alert data, only send the alertId, alertTimestamp, alertType, location description, latitude, and longitude fields.</p> <p>From the System Alerts dialog, open the Handle Alarm dialog.</p> <p>Resolve the alarm by acknowledging the alarm.</p>	<p>The software accepts alerts defined by the FDOT IDS Alert Protocol.</p> <p>The software implements the protocol defined by the FDOT document "FDOT IDS Alert Protocol - SunGuide Requirements_072723.docx".</p> <p>When an alert is triggered through this protocol, an alert is displayed in the Alert List.</p> <p>For the alert, the user has the option to create a new event, create a secondary event, associate to an existing event, acknowledge, or dismiss the alert.</p> <p>The user can resolve the alarm by associating it to an existing event.</p>	<input type="checkbox"/>	<input type="checkbox"/>

10	SRT-1214 SRT-1215 SRT-1216 SRT-1217 SRT-1218	<p>Using Postman, generate another alarm. In the alert data send at least the alertId, alertTimestamp, alertType, and location description fields.</p> <p>From the System Alerts dialog, open the Handle Alarm dialog.</p> <p>Resolve the alarm by dismissing it as a false alarm.</p>	<p>The software accepts alerts defined by the FDOT IDS Alert Protocol.</p> <p>The software implements the protocol defined by the FDOT document "FDOT IDS Alert Protocol - SunGuide Requirements_072723.docx".</p> <p>When an alert is triggered through this protocol, an alert is displayed in the Alert List.</p> <p>For the alert, the user has the option to create a new event, create a secondary event, associate to an existing event, acknowledge, or dismiss the alert.</p> <p>The user can resolve the alarm by dismissing it as a false alarm.</p>	<input type="checkbox"/>	<input type="checkbox"/>
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

7. IC-5: SG-6131 Involved Vehicle Make and Model Automatically Approved

7.1 Objectives

The objective of this integration case is to test the requirements associated with automatically approving words for involved vehicles of an event when activating a message to DMS.

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.

Requirement Number	Requirement Text
SRT-971	When checking a DMS message for spelling conflicts, the software will automatically approve words that are configured as vehicle make long name, vehicle model short name, vehicle color short names, or state abbreviation short names that do not appear in the approved words list.
SRT-972	When checking a DMS message for spelling conflicts, the software will automatically approve words that appear as the license plate tag in an involved vehicle of an active event that do not appear in the approved words list.

7.3 Test Approach

These tests will show that involved vehicle information is automatically approved when not included in the approved words list of DMS.

7.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CNA
- EM
- DMS
- MAS

Configured Devices

- At least one simulated DMS that can fit 3 lines of text

Other Prerequisite Conditions

- The test user should be an administrator with permission to receive spelling conflict notifications.
- The queue for the above DMS should be blank.
- A message template configured with the following template text: "[VEH MAKE][nl][VEH MODEL][nl][VEH COLOR][np][VEH STATE][nl][LICENSE TAG]"
- A device template configured for the simulated DMS that uses the above message template for all possible default event type templates.
- A vehicle make with the short name "SHORTMAKE" and long name "LONGMAKE".
- A vehicle model with the short name "SHORTMODEL" and long name "LONGMODEL" that belongs to the previous make.
- A vehicle color with the short name "SHORTCOLOR" and long name "LONGCOLOR".
- A state with the short name "SHORTSTATE" and long name "LONGSTATE".
- The following words should not be in the approved words list for DMS:
 - SHORTMAKE
 - LONGMAKE
 - SHORTMODEL
 - LONGMODEL
 - SHORTCOLOR
 - LONGCOLOR
 - SHORTSTATE
 - LONGSTATE
 - FOOBAR

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-971 SRT-972	Create a new event. In the Event Details dialog for the new event, add an involved vehicle that uses the preconfigured vehicle make, model, color, and state. Set the license plate tag to be "FOOBAR". Save the event and suggest a response plan. Add the preconfigured DMS manually if it is not	The suggested DMS message for the pre-configured DMS should contain the vehicle make long name, and the model and color short names each on separate lines in the first phase. The vehicle state and tag should be on separate lines of the second phase of the message. When checking a DMS message for spelling conflicts, the software automatically	<input type="checkbox"/>	<input type="checkbox"/>

		<p>automatically suggested and added.</p> <p>Activate the response plan.</p> <p>Wait for the message to post to the sign.</p>	<p>approves words that are configured as vehicle make long name, vehicle model long name, vehicle color long names, or state abbreviation short names that do not appear in the approved words list.</p> <p>When checking a DMS message for spelling conflicts, the software automatically approves words that appear as the license plate tag in an involved vehicle of an active event that do not appear in the approved words list.</p> <p>The message is posted to the simulated DMS with no spelling conflict notification.</p>		
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

8. IC-6: SG-2964 Multiple Logical Devices Mapped to Same Physical Device

8.1 Objectives

The objective of this integration case is to test the requirements associated with making a new dialog that checks all devices for unique communication parameters.

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.

Requirement Number	Requirement Text
SRT-980	A user with permission will be able to access a configuration dialog allowing the user to check for unique communication parameters across all device types currently connected to the Operator Map.
SRT-981	Communication parameters can be defined as host and port combination or a URL.
SRT-982	A user will be able to check for unique communication parameters across all device types currently connected to the Operator Map.
SRT-983	The system will display all conflicting communication parameters in the dialog.

8.3 Test Approach

The tests will show that different devices with conflicting communication parameters will be identified for the user to review.

8.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- AVL/RR
- BMS
- CCTV
- CVS
- DMS
- EM
- GPIO
- IDS
- LCS
- MLS

- RMS
- RWIS
- SB
- TPS
- TSS
- VS

Configured Devices

- 2 of each device type below configured with the IP 10.10.10.10, Port 999, and Address or Device ID of 123 (if applicable):
 - DMS
 - One DMS should have a different address other than 123.
 - TSS Detector
 - Specify RTMS Driver, Radar type, and WavetronixHD protocol
 - Camera
 - Specify NTCIP Driver
 - RSE
 - LCS
 - RWIS Station
 - Vehicle Alert Device
 - Specify the protocol as Click512
 - AVL/RR Vehicle
 - Ramp Metering Controller
 - I/O Device
 - Specify the status type as "External" and device type as "Blank Out Sign"
 - Managed Lane Controller
 - Specify no PMPP communications
 - Configure a third to use PMPP
 - Beacon
 - Specify connection type as TCP
 - Safety Barrier
 - Video switch source
 - Video switch destination
- 2 of each device type below configured with the URL: <http://10.10.10.10/TestingUniqueness> and Address of 123 (if applicable):
 - TSS Detector
 - Specify RTMS Driver, Radar type, and IPSens protocol
 - Camera
 - Specify ONVIF Driver
 - TPS Facility
 - Vehicle Alert Device
 - Specify the protocol as ISS
 - I/O Device

- Specify the status type as "External" and device type as "Bridge"
- Beacon
 - Specify connection type as HTTP

Other Prerequisite Conditions

- A user account that belongs to the administrator group.
- A user account that has all permissions but the SAA permission "Allows the user to configure user, group, and other system information".

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-980 SRT-981 SRT-982 SRT-983	<p>Log into a map as the user with the SAA permission "Allows the user to configure user, group, and other system information".</p> <p>From the map's context menu, navigate to "Configuration" and then select the option for "Device Address Conflict Checking".</p> <p>In the dialog that appears, observe the IP Address/Host, Port, and URLs for the displayed devices.</p>	<p>A user with permission is able to access a configuration dialog allowing the user to check for unique communication parameters across all device types currently connected to the Operator Map.</p> <p>Communication parameters are defined as host and port combinations or a URL</p> <p>A user can initiate a check for unique host and port combinations across all device types currently connected to the Operator Map.</p> <p>The system displays all conflicting host and port combinations in the dialog.</p> <p>All devices configured in the preconfiguration are present in the dialog</p>	<input type="checkbox"/>	<input type="checkbox"/>

2	SRT-980	<p>Log into a map as the user without permission to "Allows the user to configure user, group, and other system information".</p> <p>Review the list of options available under the "Configuration" context menu.</p>	<p>A user without permission is unable to access a configuration dialog allowing the user to check for unique communication parameters across all device types currently connected to the Operator Map.</p>	<input type="checkbox"/>	<input type="checkbox"/>
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

9. IC-7: SG-3047 Multi-select cameras into new video wall window from map

9.1 Objectives

The objective of this integration case is to test the requirements associated with ceasing the use of active configurations.

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.

Requirement Number	Requirement Text
SRT-993	The system will allow the user to select multiple icons by holding the Shift key and dragging the mouse.
SRT-994	The system will allow the user to toggle icon selection by holding the Control key and clicking an icon.
SRT-995	When more than one icon is selected, the system will show context menu entries on the selected icons for actions that apply to the set of selected icons.
SRT-996	When more than one icon is selected and at least one selected icon is a camera icon, the software will allow the user to select an option to send all selected cameras to a Video On Desktop dialog.
SRT-997	When more than one icon is selected and at least one selected icon is a DMS icon, the software will allow the user to select an option to send a message to all the selected DMS.
SRT-998	When more than one icon is selected and at least one selected icon is a DMS icon, the software will allow the user to select an option to open the DMS Status dialog and select all of the all the DMS selected on the map.

9.3 Test Approach

These tests will demonstrate the functionality of selecting and performing actions against a selection of icons on the map.

9.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CCTV
 - At least one CCTV Driver
- DMS
 - DMS Driver

- MAS

Configured Devices

- One or more active DMSs.
- One or more active CCTV cameras with streams configured.

Other Prerequisite Conditions

- N/A

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-993	Open and log into the Operator Map. On the map, hold down the Shift key and drag the mouse while the right mouse button is pressed. Select a section of the map containing at least one CCTV icon and at least one DMS icon then release the right mouse button and Shift Key.	The system allows the user to select multiple icons by holding the Shift key and dragging the mouse. The icons within the selection are highlighted.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-994	While holding down the Control key, use the mouse to left click on an icon that is not highlighted.	The system allows the user to toggle icon selection by holding the Control key and clicking an icon. The icon is highlighted.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-994	While holding down the Control key, use the mouse to left click on the icon that was highlighted in the previous step.	The system allows the user to toggle icon selection by holding the Control key and clicking an icon. The icon is no longer highlighted.	<input type="checkbox"/>	<input type="checkbox"/>

4	SRT-995 SRT-996 SRT-997 SRT-998	<p>Right click any of the selected icons.</p> <p>Review the list of available context menu options.</p>	<p>When more than one icon is selected, the system shows context menu entries on the selected icons for actions that apply to the set of selected icons.</p> <p>When more than one icon is selected and at least one selected icon is a camera icon, the software allows the user to select an option to send all selected cameras to a Video On Desktop dialog.</p> <p>When more than one icon is selected and at least one selected icon is a DMS icon, the software allows the user to select an option to send a message to all the selected DMS.</p> <p>When more than one icon is selected and at least one selected icon is a DMS icon, the software will allow the user to select an option to open the DMS Status dialog and select all of the all the DMS selected on the map.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-996	<p>Select the option to open a new Video on Desktop dialog.</p>	<p>When more than one icon is selected and at least one selected icon is a camera icon, the software allows the user to select an option to send all selected</p>	<input type="checkbox"/>	<input type="checkbox"/>

			cameras to a Video On Desktop dialog. A new video dialog window opens populated with streams for all the selected camera icons.		
6	SRT-997	Right click any of the selected icons on the map and select the option to send a DMS message.	When more than one icon is selected and at least one selected icon is a DMS icon, the software allows the user to select an option to send a message to all the selected DMS. A dialog opens that allows the user to send messages to all of the selected DMS icons.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-998	Right click any of the selected icons on the map and select the option to open the DMS Status dialog.	When more than one icon is selected and at least one selected icon is a DMS icon, the software will allow the user to select an option to open the DMS Status dialog and select all of the all the DMS selected on the map. The DMS status dialog opens and selects the rows that represent the selected DMS icons.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
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FDOT Witness	
SwRI Witness	

10. IC-8: SG-6355 Security Improvements - Password Security

10.1 Objectives

The objective of this integration case is to test the requirements associated with enforcing password complexity requirements.

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.

Requirement Number	Requirement Text
SRT-1054	The software will store a systemwide setting for each user type that specifies whether a user's password will expire after a specified number of days.
SRT-1055	The software will store a systemwide setting that specifies the number of days before a user's password expires.
SRT-1056	When the setting to enforce the user's password to expire after a specified number of days is enabled, the software will require the user to change their password on the next log in after the specified number of days since the last password change.
SRT-1057	The software will store a systemwide setting that specifies whether a user's password must have a minimum length.
SRT-1058	The software will store a systemwide setting that specifies the minimum length of a user's password.
SRT-1059	When the minimum length of a user's password is enforced, the software will require the user to have a password at least the minimum length when setting a user's password.
SRT-1060	The software will store a systemwide setting that specifies whether a user's password must have a maximum length.
SRT-1061	The software will store a systemwide setting that specifies the maximum length of a user's password.
SRT-1062	When the maximum length of a user's password is enforced, the software will require the user to have a password no longer than the maximum length when setting a user's password.
SRT-1063	The software will store a systemwide setting that specifies whether a user's password can be reused before a specified number of password changes.
SRT-1064	The software will store a systemwide setting that specifies the number of password changes before a password can be reused.
SRT-1065	When the setting to enforce a specified number of password changes before a password is reused is enforced, the software will allow the user to set the password to a previous password if it is not in the specified number of most recent passwords.

SRT-1066	The software will store a systemwide setting that specifies whether a password may be changed before a minimum number of days.
SRT-1067	The software will store a systemwide setting that specifies the minimum number of days before a password may be changed.
SRT-1068	When the setting to enforce a minimum number of days before a password may be changed is enabled, the software will allow a user to change the password after the minimum number of days have elapsed since the last password change.
SRT-1069	The software will allow a user with administrative permissions to set the password for a user regardless of the minimum number of days before a password may be changed.
SRT-1070	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of lowercase letters.
SRT-1071	The software will store a systemwide setting that specifies the minimum number of lowercase letters in a user's password.
SRT-1072	When the minimum number of lowercase letters in a user's password is enforced, the software will require the user to have the minimum number of lowercase letters when setting a password.
SRT-1073	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of uppercase letters.
SRT-1074	The software will store a systemwide setting that specifies the minimum number of uppercase letters in a user's password.
SRT-1075	When the minimum number of uppercase letters in a user's password is enforced, the software will require the user to have the minimum number of uppercase letters when setting a password.
SRT-1076	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of digits.
SRT-1077	The software will store a systemwide setting that specifies the minimum number of digits in a user's password.
SRT-1078	When the minimum number of digits in a user's password is enforced, the software will require the user to have the minimum number of digits when setting a password.
SRT-1079	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of special characters.
SRT-1080	The software will store a systemwide setting that specifies the minimum number of special characters in a user's password.
SRT-1081	When the minimum number of special characters in a user's password is enforced, the software will require the user to have the minimum number of special characters when setting a password.
SRT-1082	The software will store a systemwide setting that specifies whether a user's first name, last name, or username is allowed in the user's password.

SRT-1083	If the setting to allow a user's first name, last name, or username in the password is disabled, the software will not allow a user to set the password if it contains the user's first name, last name, or username.
SRT-1084	The software will store a systemwide setting that specifies whether spaces are allowed in a password.
SRT-1085	When the setting to allow spaces in a password is disabled, the software will not allow the user to set the password if it contains a space.
SRT-1086	The software will allow a user to view the password requirements settings.
SRT-1087	Except for password reuse requirements, the software will inform the user of the currently met password criteria when setting a password.
SRT-1088	The software will store a systemwide setting that specifies whether the password should begin with a letter.
SRT-1089	If the setting to force the password to begin with a letter is enabled, the software will not allow a user to save a password that does not begin with a letter.
SRT-1090	The software will store a systemwide setting that specifies whether specific characters are disallowed in the password.
SRT-1091	The software will store a systemwide setting that specifies the specific characters that are disallowed in the password.
SRT-1092	When the disallowed special characters setting is enforced, the software will not allow the user to save a password that includes the disallowed characters.

10.3 Test Approach

The tests will show that our software enforces the password requirements for a user.

10.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA

Configured Devices

- N/A

Other Prerequisite Conditions

- A non-Windows administrator user to execute the test with the username 'Carol'. The user's first and last name's should be "Alice" and "Eve", respectively.

- Another non-Windows operator user account with the username 'Dan', and first and last names of "Bob" and "Craig", respectively.
- Three non-Windows administrator users, one of each user type (Normal, System, Remote) with known passwords.
 - Note the database IDs of each user.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1054	Observe the <code>IS_PASSWORD_CHANGE_REQUIRED</code> column on the <code>dbo.SAA_USER_TYPES</code> table.	The software stores a systemwide setting for each user type that specifies whether a user's password will expire after a specified number of days based.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1055 SRT-1057 SRT-1058 SRT-1060 SRT-1061 SRT-1063 SRT-1064 SRT-1066 SRT-1067 SRT-1070 SRT-1071 SRT-1073 SRT-1074 SRT-1076 SRT-1077 SRT-1079 SRT-1080 SRT-1082 SRT-1084 SRT-1088 SRT-1090	Observe the following columns on the <code>dbo.SAA_OPERATIONS</code> table: <ul style="list-style-type: none"> • <code>PASSWORD_DURATION</code> • <code>PASSWORD_MIN_LENGTH</code> • <code>PASSWORD_MAX_LENGTH</code> • <code>PASSWORD_HISTORY</code> • <code>PASSWORD_MIN_AGE</code> • <code>PASSWORD_LOWERCASE</code> • <code>PASSWORD_UPPERCASE</code> • <code>PASSWORD_DIGIT</code> • <code>PASSWORD_SPECIAL_CHAR</code> • <code>PASSWORD_DISALLOW_NAME</code> • <code>PASSWORD_DISALLOW_SPACES</code> • <code>PASSWORD_BEGIN_WITH_LETTER</code> • <code>PASSWORD_DISALLOWED_CHARS</code> Execute the below queries to disable the systemwide settings against the active database:	The software stores a systemwide setting that specifies the number of days before a user's password expires. The software stores a systemwide setting that specifies whether a user's password must have a minimum length. The software stores a systemwide setting that specifies the minimum length of a user's password. The software stores a systemwide setting that specifies whether a user's password must have a maximum length.	<input type="checkbox"/>	<input type="checkbox"/>

	<p>SRT-1091</p>	<pre> UPDATE dbo.SAA_OPERATIONS SET PASSWORD_DURATION = 0, PASSWORD_MIN_LENGTH = NULL, PASSWORD_MAX_LENGTH = NULL, PASSWORD_HISTORY = NULL, PASSWORD_MIN_AGE = NULL, PASSWORD_LOWERCASE = NULL, PASSWORD_UPPERCASE = NULL, PASSWORD_DIGIT = NULL, PASSWORD_SPECIAL_CHAR = NULL, PASSWORD_DISALLOW_NAME = 0, PASSWORD_DISALLOW_SPACES = 0, PASSWORD_BEGIN_WITH_LETTER = 0, PASSWORD_DISALLOWED_CHARS = NULL; UPDATE dbo.SAA_USER_TYPES SET IS_PASSWORD_CHANGE_REQUIRED = 0; </pre> <p>Restart SAA.</p>	<p>The software stores a systemwide setting that specifies the maximum length of a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password can be reused before a specified number of password changes.</p> <p>The software stores a systemwide setting that specifies the number of password changes before a password can be reused.</p> <p>The software stores a systemwide setting that specifies whether a password may be changed before a minimum number of days.</p> <p>The software stores a systemwide setting that specifies the minimum number of days before a password may be changed.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of lowercase letters.</p> <p>The software stores a systemwide setting that specifies the minimum number of lowercase letters in a user's password.</p>		
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			<p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of uppercase letters.</p> <p>The software stores a systemwide setting that specifies the minimum number of uppercase letters in a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of digits.</p> <p>The software stores a systemwide setting that specifies the minimum number of digits in a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of special characters.</p> <p>The software stores a systemwide setting that specifies the minimum number of special characters in a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's first name, last name, or username is allowed in the user's password.</p>		
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			<p>The software stores a systemwide setting that specifies whether spaces are allowed in a password.</p> <p>The software stores a systemwide setting that specifies whether the password should begin with a letter.</p> <p>The software stores a systemwide setting that specifies whether specific characters are disallowed in the password.</p> <p>The software stores a systemwide setting that specifies the specific characters that are disallowed in the password.</p>		
3	SRT-1086	<p>Open and log into the map as 'Carol'.</p> <p>Open the User and Group Management dialog. On the Settings tab, review the Password Management section.</p>	<p>The software allows a user to view the password requirements settings.</p> <p>The settings for the following are disabled:</p> <ul style="list-style-type: none"> • For each user type, whether the password will expire after a specified number of days • Whether a password must be longer than a minimum length • Whether a password must be shorter than a maximum length 	<input type="checkbox"/>	<input type="checkbox"/>

			<ul style="list-style-type: none">• Whether a password must not be reused within a specific number of passwords• Whether a password may not be changed within a specific number of days• Whether a password must have a minimum number of lowercase letters• Whether a password must have a minimum number of uppercase letters• Whether a password must have a minimum number of digits• Whether a password must have a minimum number of special characters• Whether a password must not have white space• Whether a password must start with a letter		
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			<ul style="list-style-type: none"> Whether a password may not have specific characters <p>Whether a password may not contain the user's username, first name, or last name</p>		
4	SRT-1059 SRT-1087	<p>From the User and Group Management dialog, open the dialog to set the password for 'Dan'.</p> <p>Attempt to set Dan's password to be 'a'. Observe the status of the currently met password criteria.</p> <p>Save Dan's password.</p>	<p>If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password.</p> <p>When the minimum length of a user's password is not enforced, the software allows the user to have a password with no minimum length.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1062 SRT-1068 SRT-1069 SRT-1087	<p>Open the set password dialog for Dan again.</p> <p>Attempt to set Dan's password to be 'P@ssw0rd012345678901234567890123456789012345678901264578901234'.</p> <p>Observe the status of the currently met password criteria.</p> <p>Save Dan's password.</p>	<p>If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password.</p> <p>When the setting to enforce the minimum number of days before a password may be changed is disabled, the software allows a user to change the password before a minimum number of days have elapsed since the last password change.</p> <p>The software allows a user with administrative permissions to set the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			password for a user regardless of the minimum number of days before a password may be changed. When the maximum length of a user's password is not enforced, the software allows the user to have a password with no maximum length.		
6	SRT-1065 SRT-1087	<p>Open the set password dialog for Dan again. Attempt to set Dan's password to be the same as the preceding step. Observe the status of the currently met password criteria. Save Dan's password.</p>	<p>If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the setting to enforce a specified number of password changes before a password is reused is not enforced, the software allows the user to set the password to a previous password if it is not in the specified number of most recent passwords.</p>	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1072 SRT-1087	<p>Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@SSWORD'. Observe the status of the currently met password criteria. Save Dan's password.</p>	<p>If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the minimum number of lowercase letters in a user's password is not enforced, the software does not require the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			user to have a minimum number of lowercase letters when setting a password.		
8	SRT-1075 SRT-1087	<p>Open the set password dialog for Dan again.</p> <p>Attempt to set Dan's password to 'p@ssw0rd'. Observe the status of the currently met password criteria.</p> <p>Save Dan's password.</p>	<p>If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password.</p> <p>When the minimum number of uppercase letters in a user's password is not enforced, the software does not require the user to have a minimum number of uppercase letters when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1078 SRT-1087	<p>Open the set password dialog for Dan again.</p> <p>Attempt to set Dan's password to 'P@ssword'. Observe the status of the currently met password criteria.</p> <p>Save Dan's password.</p>	<p>If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password.</p> <p>When the minimum number of digits in a user's password is not enforced, the software does not require the user to have a minimum number of digits when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>
10	SRT-1081 SRT-1087	<p>Open the set password dialog for Dan again.</p> <p>Attempt to set Dan's password to 'Passw0rd'. Observe the status of the currently met password criteria.</p> <p>Save Dan's password.</p>	<p>If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			When the minimum number of special characters in a user's password is not enforced, the software does not require the user to have a minimum number of special characters when setting a password.		
11	SRT-1083 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@sswOrdBob'. Observe the status of the currently met password criteria. Save Dan's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is disabled, the software allows a user to set the password if it contains the user's first name.	<input type="checkbox"/>	<input type="checkbox"/>
12	SRT-1092 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@sswOrdCraig'. Observe the status of the currently met password criteria. Save Dan's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is disabled, the software allows a user to set the password if it contains the user's last name.	<input type="checkbox"/>	<input type="checkbox"/>
13	SRT-1083 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@sswOrdAN'. Observe the status	If no password criteria setting is enabled, the software does not inform the user of the currently	<input type="checkbox"/>	<input type="checkbox"/>

		of the currently met password criteria. Save Dan's password.	met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is disabled, the software allows a user to set the password if it contains the user's username.		
14	SRT-1085 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@ssw0rd '. Observe the status of the currently met password criteria. Save Dan's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the setting to allow spaces in a password is enabled, the software allows the user to set the password if it contains a space.	<input type="checkbox"/>	<input type="checkbox"/>
15	SRT-1087 SRT-1088	Open the set password dialog for Dan again. Attempt to set Dan's password to 'OP@ssw0rd'. Observe the status of the currently met password criteria. Save Dan's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. If the setting to force the password to begin with a letter is disabled, the software allows a user to save a password that does not begin with a letter.	<input type="checkbox"/>	<input type="checkbox"/>
16	SRT-1087 SRT-1092	Open the set password dialog for Dan again. Attempt to set Dan's password to '!@#%&*()'. Observe the status of the currently met password criteria. Save Dan's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the disallowed special characters setting is not enforced, the	<input type="checkbox"/>	<input type="checkbox"/>

			software allows the user to save a password that includes any character.		
17	SRT-1059 SRT-1087	From the map's context menu, select the option to change password for the current user, 'Carol'. Attempt to set Carol's password to 'a'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the minimum length of a user's password is not enforced, the software allows the user to have a password with no minimum length.	<input type="checkbox"/>	<input type="checkbox"/>
18	SRT-1062 SRT-1068 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to be 'P@ssw0rd0123456789012345678901234567890123456789012345678901234'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the setting to enforce the minimum number of days before a password may be changed is disabled, the software allows a user to change the password before a minimum number of days have elapsed since the last password change. When the maximum length of a user's password is not enforced, the software allows the user to have a password with no maximum length.	<input type="checkbox"/>	<input type="checkbox"/>
19	SRT-1065 SRT-1087	Open the change password dialog to change Carol's password again. Change Carol's password to be the same as the preceding step. Observe the status of the currently met password criteria.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password.	<input type="checkbox"/>	<input type="checkbox"/>

		Save Carol's password.	When the setting to enforce a specified number of password changes before a password is reused is not enforced, the software allows the user to set the password to a previous password if it is not in the specified number of most recent passwords.		
20	SRT-1072 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@SSWORD'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the minimum number of lowercase letters in a user's password is not enforced, the software does not require the user to have a minimum number of lowercase letters when setting a password.	<input type="checkbox"/>	<input type="checkbox"/>
21	SRT-1075 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'p@ssw0rd'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the minimum number of uppercase letters in a user's password is not enforced, the software does not require the user to have a minimum number of uppercase letters when setting a password.	<input type="checkbox"/>	<input type="checkbox"/>
22	SRT-1078 SRT-1087	Open the change password dialog to change Carol's password again.	If no password criteria setting is enabled, the software does not inform	<input type="checkbox"/>	<input type="checkbox"/>

		Attempt to change Carol's password to 'P@ssword'. Observe the status of the currently met password criteria. Save Carol's password.	the user of the currently met password criteria when setting a password. When the minimum number of digits in a user's password is not enforced, the software does not require the user to have a minimum number of digits when setting a password.		
23	SRT-1081 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'Passw0rd'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the minimum number of special characters in a user's password is not enforced, the software does not require the user to have a minimum number of special characters when setting a password.	<input type="checkbox"/>	<input type="checkbox"/>
24	SRT-1083 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rdAlice'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is disabled, the software allows a user to set the password if it contains the user's first name.	<input type="checkbox"/>	<input type="checkbox"/>
25	SRT-1083 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rdEve'.	If no password criteria setting is enabled, the software does not inform the user of the currently	<input type="checkbox"/>	<input type="checkbox"/>

		Observe the status of the currently met password criteria. Save Carol's password.	met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is disabled, the software allows a user to set the password if it contains the user's last name.		
26	SRT-1083 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rdcarol'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is disabled, the software allows a user to set the password if it contains the user's username.	<input type="checkbox"/>	<input type="checkbox"/>
27	SRT-1085 SRT-1087	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rd '. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the setting to allow spaces in a password is enabled, the software allows the user to set the password if it contains a space.	<input type="checkbox"/>	<input type="checkbox"/>
28	SRT-1087 SRT-1088	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'OP@ssw0rd'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. If the setting to force the password to begin with a	<input type="checkbox"/>	<input type="checkbox"/>

			letter is disabled, the software allows a user to save a password that does not begin with a letter.		
29	SRT-1087 SRT-1091	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to '!@#\$\$%^&*()'. Observe the status of the currently met password criteria. Save Carol's password.	If no password criteria setting is enabled, the software does not inform the user of the currently met password criteria when setting a password. When the disallowed special characters setting is not enforced, the software allows the user to save a password that includes any character.	<input type="checkbox"/>	<input type="checkbox"/>
30	SRT-1056	Update the database to set the last password change date for the three known users of each user type using the below query: UPDATE dbo.SAA_CHANGE_PASSWORD_DATE SET LAST_CHANGE_DATE = DATEADD(DAY, -1000, SYSDATETIMEOFFSET()) WHERE USER_ID IN (<ID1>, <ID2>, <ID3>); Restart SAA. Open and log into a Map as the Normal user. Wait until login is complete. Open and log into a Map as the System user. Wait until login is complete. Open and log into a Map as the Remote user. Wait until login is complete.	When the setting to enforce the user's password to expire after a specified number of days is disabled, the software does not require the user to change their password on the next log in after the specified number of days since the last password change.	<input type="checkbox"/>	<input type="checkbox"/>
31	SRT-1057 SRT-1058 SRT-1060 SRT-1061 SRT-1063 SRT-1064 SRT-1070	Execute the below query to enable the systemwide settings against the active database: UPDATE dbo.SAA_OPERATIONS SET PASSWORD_MIN_LENGTH = 8, PASSWORD_MAX_LENGTH = 30, PASSWORD_LOWERCASE = 1, PASSWORD_UPPERCASE = 1, PASSWORD_DIGIT = 1,	The software stores a systemwide setting that specifies whether a user's password must have a minimum length. The software stores a systemwide setting that	<input type="checkbox"/>	<input type="checkbox"/>

	<p>SRT-1071 SRT-1073 SRT-1074 SRT-1076 SRT-1077 SRT-1079 SRT-1080 SRT-1082 SRT-1084 SRT-1088 SRT-1090 SRT-1091</p>	<pre> PASSWORD_SPECIAL_CHAR = 1, PASSWORD_DISALLOW_NAME = 1, PASSWORD_DISALLOW_SPACES = 1, PASSWORD_BEGIN_WITH_LETTER = 1, PASSWORD_DISALLOWED_CHARS = '^="{}'; Restart SAA. </pre>	<p>specifies the minimum length of a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a maximum length.</p> <p>The software stores a systemwide setting that specifies the maximum length of a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password can be reused before a specified number of password changes.</p> <p>The software stores a systemwide setting that specifies the number of password changes before a password can be reused.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of lowercase letters.</p> <p>The software stores a systemwide setting that specifies the minimum number of lowercase letters in a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of uppercase letters.</p>		
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			<p>The software stores a systemwide setting that specifies the minimum number of uppercase letters in a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of digits.</p> <p>The software stores a systemwide setting that specifies the minimum number of digits in a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's password must have a minimum number of special characters.</p> <p>The software stores a systemwide setting that specifies the minimum number of special characters in a user's password.</p> <p>The software stores a systemwide setting that specifies whether a user's first name, last name, or username is allowed in the user's password.</p> <p>The software stores a systemwide setting that specifies whether spaces are allowed in a password.</p> <p>The software stores a systemwide setting that specifies whether the</p>		
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			<p>password should begin with a letter.</p> <p>The software stores a systemwide setting that specifies whether specific characters are disallowed in the password.</p> <p>The software stores a systemwide setting that specifies the specific characters that are disallowed in the password.</p>		
32	<p>SRT-1086</p>	<p>Open and log into the map as 'Carol'</p> <p>Open the User and Group Management dialog. On the Settings tab, review the Password Management section.</p>	<p>The software allows a user to view the password requirements settings.</p> <p>The settings for the following are enabled and set to the following:</p> <ul style="list-style-type: none"> • Whether a password must be longer than a minimum length is set to 8 • Whether a password must be shorter than a maximum length is set to 30 • Whether a password must have a minimum number of lowercase letters is set to 1 • Whether a password must have a minimum number of uppercase letters is set to 1 	<input type="checkbox"/>	<input type="checkbox"/>

			<ul style="list-style-type: none"> • Whether a password must have a minimum number of digits is set to 1 • Whether a password must have a minimum number of special characters is set to 1 • Whether a password must not have white space is checked • Whether a password must start with a letter is checked • Whether a password may not have specific characters contains the following characters: ^ = " { } <p>Whether a password may not contain the user's username, first name, or last name is checked</p>		
33	SRT-1059 SRT-1087	<p>From the User and Group Management dialog, open the dialog to set the password for 'Dan'.</p> <p>Attempt to set Dan's password to 'P@ssw0r'. Observe the status of the currently met password criteria.</p> <p>Add a 'd' to the end of the password. Observe the status of</p>	<p>Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. When the minimum length of a user's password is enforced, the software requires the</p>	<input type="checkbox"/>	<input type="checkbox"/>

		the currently met password criteria. Save Dan's password.	user to have a password at least the minimum length when setting a user's password.		
34	SRT-1062 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@sswOrd01234567890123456789012'. Observe the status of the currently met password criteria. Remove the final '2' from the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. When the minimum length of a user's password is enforced, the software requires the user to have a password at least the minimum length when setting a user's password.	<input type="checkbox"/>	<input type="checkbox"/>
35	SRT-1072 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@SSWORD'. Observe the status of the currently met password criteria. Add a 'd' to the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. When the minimum number of lowercase letters in a user's password is , enforced, the software requires the user to have a minimum number of lowercase letters when setting a password.	<input type="checkbox"/>	<input type="checkbox"/>
36	SRT-1075 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'p@sswOrd'. Observe the status of the currently met password criteria. Add a 'D' to the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. When the minimum number of uppercase letters in a user's password is enforced, the software requires the	<input type="checkbox"/>	<input type="checkbox"/>

			user to have a minimum number of uppercase letters when setting a password.		
37	SRT-1078 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@sswordd'. Observe the status of the currently met password criteria. Add a '1' to the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. When the minimum number of digits in a user's password is enforced, the software requires the user to have a minimum number of digits when setting a password.	<input type="checkbox"/>	<input type="checkbox"/>
38	SRT-1081 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'Passw0rd'. Observe the status of the currently met password criteria. Add a '\$' to the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. When the minimum number of special characters in a user's password is enforced, the software requires the user to have a minimum number of special characters when setting a password.	<input type="checkbox"/>	<input type="checkbox"/>
39	SRT-1083 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@ssw0rdBob'. Observe the status of the currently met password criteria. Remove the 'b' from the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is enabled, the software does not allow a	<input type="checkbox"/>	<input type="checkbox"/>

			user to set the password if it contains the user's first name.		
40	SRT-1083 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@ssw0rdCraig'. Observe the status of the currently met password criteria. Remove the 'g' from the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is enabled, the software does not allow a user to set the password if it contains the user's last name.	<input type="checkbox"/>	<input type="checkbox"/>
41	SRT-1083 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@ssw0rdAN'. Observe the status of the currently met password criteria. Remove the 'N' from the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. If the setting to allow a user's first name, last name, or username in the password is enabled, the software does not allow a user to set the password if it contains the user's username.	<input type="checkbox"/>	<input type="checkbox"/>
42	SRT-1085 SRT-1087	Open the set password dialog for Dan again. Attempt to set Dan's password to 'P@ssw0rd '. Observe the status of the currently met password criteria. Remove the space from the end of the password. Observe the status of the currently met password criteria. Save Dan's password.	Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password. When the setting to allow spaces in a password is disabled, the software does not allow the user to set the password if it contains a space.	<input type="checkbox"/>	<input type="checkbox"/>

43	SRT-1087 SRT-1089	<p>Open the set password dialog for Dan again.</p> <p>Attempt to set Dan's password to 'OP@ssw0rd'. Observe the status of the currently met password criteria.</p> <p>Remove the '0' from the start of the password. Observe the status of the currently met password criteria.</p> <p>Save Dan's password.</p>	<p>Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password.</p> <p>If the setting to force the password to begin with a letter is enabled, the software does not allow a user to save a password that does not begin with a letter.</p>	<input type="checkbox"/>	<input type="checkbox"/>
44	SRT-1087 SRT-1092	<p>Open the set password dialog for Dan again.</p> <p>Attempt to set Dan's password to 'P@ssw0rd^'. Observe the status of the currently met password criteria.</p> <p>Remove the '^' from the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Dan's password.</p>	<p>Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password.</p> <p>When the disallowed special characters setting is enforced, the software does not allow the user to save a password that includes the disallowed characters.</p>	<input type="checkbox"/>	<input type="checkbox"/>
45	SRT-1059 SRT-1087	<p>From the map's context menu, select the option to change the password for the current user, 'Carol'.</p> <p>Attempt to change Carol's password to 'P@ssw0r'. Observe the status of the currently met password criteria.</p> <p>Add a 'd' to the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>Except for password reuse requirements, the software informs the user of the currently met password criteria when setting a password.</p> <p>When the minimum length of a user's password is enforced, the software requires the user to have a password at least the minimum length when setting a user's password.</p>	<input type="checkbox"/>	<input type="checkbox"/>
46	SRT-1062 SRT-1068 SRT-1087	<p>Open the change password dialog to change Carol's password again.</p> <p>Attempt to change Carol's password to 'P@ssw0rd0123456</p>	<p>Except for password reuse requirements, the software informs the user of the currently met</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>7890123456789012'. Observe the status of the currently met password criteria.</p> <p>Remove the final '2' from the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>password criteria when setting a password.</p> <p>When the minimum length of a user's password is enforced, the software requires the user to have a password at least the minimum length when setting a user's password.</p>		
47	<p>SRT-1065 SRT-1087</p>	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@SSWORD'. Observe the status of the currently met password criteria.</p> <p>Add a 'd' to the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password.</p> <p>When the minimum number of lowercase letters in a user's password is , enforced, the software requires the user to have a minimum number of lowercase letters when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>
48	<p>SRT-1072 SRT-1087</p>	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'p@ssw0rd'. Observe the status of the currently met password criteria.</p> <p>Add a 'D' to the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password.</p> <p>When the minimum number of uppercase letters in a user's password is enforced, the software requires the user to have a minimum number of uppercase letters when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>
49	<p>SRT-1075, SRT-1087</p>	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@sswordd'.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Observe the status of the currently met password criteria.</p> <p>Add a '1' to the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>password criteria when setting a password.</p> <p>When the minimum number of digits in a user's password is enforced, the software requires the user to have a minimum number of digits when setting a password.</p>		
50	<p>SRT-1078 SRT-1087</p>	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'Passw0rd'. Observe the status of the currently met password criteria.</p> <p>Add a '\$' to the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password.</p> <p>When the minimum number of special characters in a user's password is enforced, the software requires the user to have a minimum number of special characters when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>
51	<p>SRT-1081 SRT-1087</p>	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rdAlice'. Observe the status of the currently met password criteria.</p> <p>Remove the 'e' from the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password.</p> <p>If the setting to allow a user's first name, last name, or username in the password is enabled, the software does not allow a user to set the password if it contains the user's first name.</p>	<input type="checkbox"/>	<input type="checkbox"/>
52	<p>SRT-1083 SRT-1087</p>	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rdEve'.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Observe the status of the currently met password criteria.</p> <p>Remove the 'e' from the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>password criteria when setting a password.</p> <p>If the setting to allow a user's first name, last name, or username in the password is enabled, the software does not allow a user to set the password if it contains the user's last name.</p>		
53	SRT-1083 SRT-1087	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rdcarol'. Observe the status of the currently met password criteria.</p> <p>Remove the 'l' from the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password.</p> <p>If the setting to allow a user's first name, last name, or username in the password is enabled, the software does not allow a user to set the password if it contains the user's username.</p>	<input type="checkbox"/>	<input type="checkbox"/>
54	SRT-1083 SRT-1087	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rd '. Observe the status of the currently met password criteria.</p> <p>Remove the space from the end of the password. Observe the status of the currently met password criteria.</p> <p>Save Carol's password.</p>	<p>Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password.</p> <p>When the setting to allow spaces in a password is disabled, the software does not allow the user to set the password if it contains a space.</p>	<input type="checkbox"/>	<input type="checkbox"/>
55	SRT-1085 SRT-1087	<p>Open the change password dialog to change Carol's password again. Attempt to change Carol's password to '0P@ssw0rd'. Observe the status of the currently met password criteria.</p> <p>Remove the '0' from the start of the password. Observe the status</p>	<p>Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password.</p> <p>If the setting to force the password to begin with a</p>	<input type="checkbox"/>	<input type="checkbox"/>

		of the currently met password criteria. Save Carol's password.	letter is enabled, the software does not allow a user to save a password that does not begin with a letter.		
56	SRT-1087 SRT-1089	Open the change password dialog to change Carol's password again. Attempt to change Carol's password to 'P@ssw0rd^'. Observe the status of the currently met password criteria. Remove the '^' from the end of the password. Observe the status of the currently met password criteria. Save Carol's password.	Except for password reuse requirements. the software informs the user of the currently met password criteria when setting a password. When the disallowed special characters setting is enforced, the software does not allow the user to save a password that includes the disallowed characters.	<input type="checkbox"/>	<input type="checkbox"/>
57	SRT-1054 SRT-1055 SRT-1056	Update the database to require users to change their password at next login by using the below queries: <pre>UPDATE dbo.SAA_CHANGE_PASSWORD_DATE SET LAST_CHANGE_DATE = DATEADD(DAY, -1000, SYSDATETIMEOFFSET()) WHERE USER_ID IN (<ID1>, <ID2>, <ID3>);</pre> <pre>UPDATE dbo.SAA_OPERATIONS SET PASSWORD_DURATION = 7;</pre> <pre>UPDATE dbo.SAA_USER_TYPES SET IS_PASSWORD_CHANGE_REQUIRED = 1;</pre> Restart SAA. Open and log into a Map as the Normal user. Wait for the password change prompt. Set the password to a new password. Open the User and Group Management dialog. On the Settings tab, review the Password Management section. Open and log into a Map as the System user. Wait for the	The software stores a systemwide setting for each user type that specifies whether a user's password will expire after a specified number of days based. The software stores a systemwide setting that specifies the number of days before a user's password expires. When the setting to enforce the user's password to expire after a specified number of days is disabled, the software requires the user to change their password on the next log in after the specified number of days since the last password change.	<input type="checkbox"/>	<input type="checkbox"/>

		password change prompt. Set the password to a new password Open and log into a Map as the Remote user. Wait for the password change prompt. Set the password to a new password			
58	SRT-1063 SRT-1064 SRT-1065 SRT-1087	<p>Update the password reuse requirement by running the following query:</p> <pre>UPDATE dbo.SAA_OPERATIONS SET PASSWORD_HISTORY = 10;</pre> <p>Restart SAA.</p> <p>Open and log into a Map as Carol. Open the User and Group Management dialog. On the Settings tab, review the Password Management section.</p> <p>From the User and Group Management dialog, open the dialog to set the password for 'Dan'. Set the password to the password 'P@ssword0'.</p> <p>Set the password for Dan to the password 'P@ssword1'.</p> <p>Set the password for Dan to the password 'P@ssword2'.</p> <p>Set the password for Dan to the password 'P@ssword3'.</p> <p>Set the password for Dan to the password 'P@ssword4'.</p> <p>Set the password for Dan to the password 'P@ssword5'.</p> <p>Set the password for Dan to the password 'P@ssword6'.</p> <p>Set the password for Dan to the password 'P@ssword7'.</p> <p>Set the password for Dan to the password 'P@ssword8'.</p> <p>Set the password for Dan to the password 'P@ssword9'.</p> <p>Open the set password dialog to set the password for Dan. Attempt to set the password 'P@ssword0'.</p>	<p>The software stores a systemwide setting that specifies whether a user's password can be reused before a specified number of password changes.</p> <p>The software stores a systemwide setting that specifies the number of password changes before a password can be reused.</p> <p>The User and Group Management Dialog shows the setting that a password must not be reused within a specific number of passwords is set to 10.</p> <p>When the setting to enforce a specified number of password changes before a password is reused is enforced, the software allows the user to set the password to a previous password if it is not in the specified number of most recent passwords.</p> <p>Except for password reuse requirements, the software will inform the user of the currently met password criteria when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Observe the status of the currently met password criteria.</p> <p>Modify the password to the password 'P@ssword10'. Observe the status of the currently met password criteria. Set the password for Dan.</p> <p>Set the password for Dan to the password 'P@ssword0'.</p>			
59	<p>SRT-1063</p> <p>SRT-1064</p> <p>SRT-1065</p> <p>SRT-1087</p>	<p>Open the change password dialog to change Carol's password.</p> <p>Change the password to the password 'P@ssword0'.</p> <p>Change the password to the password 'P@ssword1'.</p> <p>Change the password to the password 'P@ssword2'.</p> <p>Change the password to the password 'P@ssword3'.</p> <p>Change the password to the password 'P@ssword4'.</p> <p>Change the password to the password 'P@ssword5'.</p> <p>Change the password to the password 'P@ssword6'.</p> <p>Change the password to the password 'P@ssword7'.</p> <p>Change the password to the password 'P@ssword8'.</p> <p>Change the password to the password 'P@ssword9'.</p> <p>Open the change password dialog. Attempt to change the password to the password 'P@ssword0'. Observe the status of the currently met password criteria.</p> <p>Modify the password to the password 'P@ssword10'. Observe the status of the currently met password criteria. Set the password for Carol.</p> <p>Open the change password dialog. Change the password to the password 'P@ssword0'.</p>	<p>The software stores a systemwide setting that specifies whether a user's password can be reused before a specified number of password changes.</p> <p>The software stores a systemwide setting that specifies the number of password changes before a password can be reused.</p> <p>When the setting to enforce a specified number of password changes before a password is reused is enforced, the software allows the user to set the password to a previous password if it is not in the specified number of most recent passwords.</p> <p>Except for password reuse requirements, the software will inform the user of the currently met password criteria when setting a password.</p>	<input type="checkbox"/>	<input type="checkbox"/>

60	<p>SRT-1066 SRT-1067 SRT-1069 SRT-1087</p>	<p>Update the database to disallow changes to a user's password within a specified amount of days by running the following query: <pre>UPDATE dbo.SAA_OPERATIONS SET PASSWORD_MIN_AGE = 1;</pre> <p>Observe the users' last password change date by running the following query: <pre>SELECT LAST_CHANGE_DATE FROM dbo.SAA_CHANGE_PASSWORD_DATE WHERE USER_ID IN (SELECT USER_ID FROM dbo.CT_USER WHERE USER_NAME IN ('Carol', 'Dan'));</pre> <p>Restart SAA. Open and log into a Map as the 'Carol'. Open the User and Group Management dialog. On the Settings tab, review the Password Management section. Open the dialog to set the password for 'Dan'. Set the password for Dan to 'NewP@ssw0rd'.</p> </p></p>	<p>The software stores a systemwide setting that specifies whether a password may be changed before a minimum number of days. The software stores a systemwide setting that specifies the minimum number of days before a password may be changed. The software allows a user with administrative permissions to set the password for a user regardless of the minimum number of days before a password may be changed.</p>	<input type="checkbox"/>	<input type="checkbox"/>
61	<p>SRT-1068</p>	<p>From the map's context menu, select the option to change the password for the current user, 'Carol'. Attempt to change the password to 'NewP@ssw0rd'.</p>	<p>When the setting to enforce a minimum number of days before a password may be changed is enabled, the software does not allow a user to change the password before the minimum number of days have elapsed since the last password change.</p>	<input type="checkbox"/>	<input type="checkbox"/>
62	<p>SRT-1068</p>	<p>Update the database to change the users' last password change date to more than one day ago by running the following query: <pre>UPDATE dbo.SAA_PASSWORD_HISTORY SET SET_DATE = DATEADD(DAY, -1, SET_DATE) WHERE USER_ID IN (SELECT USER_ID FROM</pre> </p>	<p>When the setting to enforce a minimum number of days before a password may be changed is enabled, the software allows a user to change the password after the minimum</p>	<input type="checkbox"/>	<input type="checkbox"/>

	<pre> dbo.CT_USER WHERE USER_NAME IN ('Carol', 'Dan')); UPDATE dbo.SAA_CHANGE_PASSWORD_DATE SET LAST_CHANGE_DATE = DATEADD(DAY, -1, LAST_CHANGE_DATE) WHERE USER_ID IN (SELECT USER_ID FROM dbo.CT_USER WHERE USER_NAME IN ('Carol', 'Dan')); Restart SAA. Open and log into a Map as 'Carol'. From the map's context menu, select the option to change the password for the current user, 'Carol'. Change the password to 'NewP@ssw0rd'. </pre>	<p>number of days have elapsed since the last password change.</p>		
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

11. IC-9: SG-6135 SunGuide EM Ribbon Update

11.1 Objectives

The objective of this integration case is to test the requirements associated with the ribbon functionality of the Event Details dialog.

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.

Requirement Number	Requirement Text
SRT-984	In the ribbon of an event, the Planned Event section will be the rightmost section.
SRT-985	In the ribbon of an event, the Location section will be the section to the left of the Planned Event section.
SRT-986	When the ribbon is too large to be shown in full on the event dialog, the ribbon will collapse sections from right to left until there is enough space to show the remainder of the items in the ribbon.
SRT-987	When the Event Details dialog has focus and the user presses the Control+O keys, the software will open the event's response plan, if available.
SRT-988	When the Event Details dialog has focus and the user presses Control+R keys, the software will open the event's RISC dialog, if available.

11.3 Test Approach

These tests will show the functionality of copying both scheduled items and schedules.

11.4 Test Descriptions

These tests will show the ribbon of the Event Details dialog is organized and collapses according to specific rules and users can use specific shortcuts as hot keys.

Subsystems/Drivers Required

- DataBus
- SAA
- CNA
- EM
- RISC

Configured Devices

- N/A

Other Prerequisite Conditions

- N/A

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-819 SRT-820 SRT-821 SRT-822	<p>Open the dialog for schedule management. Select the pre-configured schedule. Copy the schedule.</p> <p>Review the name of the original and copied schedule. Rename the copied schedule.</p> <p>Open the scheduled item list for the original and copied schedule.</p> <p>For each scheduled item in the copied schedule, compare the configuration of the scheduled item with the configuration for the original item in the original schedule. Rename the scheduled item in the copied scheduled.</p>	<p>The system allows the operator to select a Schedule and make a copy of the schedule.</p> <p>The new schedule has a unique name among schedules and allows the user to modify the name of the item after creation.</p> <p>The software made a copy of each Scheduled Item in the original schedule including the start and end dates, reoccurrence pattern, action, and any selected devices.</p> <p>The new scheduled items have a unique name among scheduled items and allow the user to modify the name of the item after creation.</p>	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-817 SRT-818	<p>Open the scheduled items dialog for the pre-configured schedule.</p> <p>Select the scheduled item for CCTV movement. Copy the scheduled item.</p> <p>Open the scheduled item editor the original and copied scheduled item. Compare the configuration of the scheduled items.</p>	<p>The system allows the operator to select a Scheduled Item and make a copy of the item in the same schedule including the start and end dates, reoccurrence pattern, action, and any selected devices.</p> <p>The new scheduled item has a unique name among scheduled items and allows the user to modify the name of the item after creation.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		Edit the name of the copied scheduled item and save the changes.			
3	SRT-817 SRT-818	<p>Select the scheduled item for the DMS message. Copy the scheduled item.</p> <p>Open the scheduled item editor the original and copied scheduled item. Compare the configuration of the scheduled items.</p> <p>Edit the name of the copied scheduled item and save the changes.</p>	<p>The system allows the operator to select a Scheduled Item and make a copy of the item in the same schedule including the start and end dates, reoccurrence pattern, action, and any selected devices.</p> <p>The new scheduled item has a unique name among scheduled items and allows the user to modify the name of the item after creation.</p>	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-817 SRT-818	<p>Select the scheduled item for the DMS group message. Copy the scheduled item.</p> <p>Open the scheduled item editor the original and copied scheduled item. Compare the configuration of the scheduled items.</p> <p>Edit the name of the copied scheduled item and save the changes.</p>	<p>The system allows the operator to select a Scheduled Item and make a copy of the item in the same schedule including the start and end dates, reoccurrence pattern, action, and any selected devices.</p> <p>The new scheduled item has a unique name among scheduled items and allows the user to modify the name of the item after creation.</p>	<input type="checkbox"/>	<input type="checkbox"/>
Test End Date/Time					
FDOT Witness					
SwRI Witness					

12. IC-10: SG-4941 Emails for Device Issue

12.1 Objectives

The objective of this integration case is to test the requirements associated with alerting operators when a percentage of a group of devices reports as Error or Failed.

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.

Requirement Number	Requirement Text
SRT-1040	A device group will consist of a list of devices which report an Op Status.
SRT-1042	A monitored groups of devices will contain a name, one or more device groups, a percentage of devices that are in an Error Op Status before triggering a notification, a recovery percentage for devices with an Error Op Status, a percentage of devices that have a Failed Op Status before triggering a notification, a recovery percentage for devices with a Failed Op Status, an optional list of Contacts or Contact Groups, an option to send email notifications, and an option to create an alert.
SRT-1049	As part of the alert details, the software will display a grid of the group's devices and their current Op Statuses.
SRT-1048	If an alert is presented to the user, the alert will contain the name of the monitored group.
SRT-1047	If email and alert options for a monitored group are not configured, no notification will be sent.
SRT-1050	The options for handling the alert should only include Dismiss as already Detected, Dismiss as False Alarm, and Acknowledge, Take No Action.
SRT-1046	The percentage of devices with a Failed Op Status must decrease below the recovery threshold before the monitored group will trigger another notification.
SRT-1044	The percentage of devices with an Error Op Status must decrease below the recovery threshold before the monitored group will trigger another notification.
SRT-1039	The software will allow a user with permission to configure a device group.
SRT-1041	The software will allow a user with permission to configure a monitored group of devices.
SRT-1053	The software will archive in the database the instances where the monitored group exceeds the notification threshold and log the name of the monitored group, the time of the alert, indicate if an email or alert was sent, and whether the triggering event was caused by an Error or a Failed state of the devices.
SRT-1051	The software will have a configuration file value for an email to send a notification when a device transitions to Out of Service.

SRT-1052	When a device transitions to Out of Service, an email will be sent to the email configured in the configuration file.
SRT-1045	When the software detects that the number of devices in a monitored group with a Failed Op Status exceeds the threshold for a notification, the system will send notifications based on the setting for the monitored group.
SRT-1043	When the software detects that the number of devices in a monitored group with an Error Op status exceeds the threshold for a notification, the system will send notifications based on the setting for the monitored group.

12.3 Test Approach

The tests will show that the software can generate alarms and notifications for devices in specific op status states.

12.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CNA
- BMS
 - BMS Beacon Driver
- CCTV
 - CCTV NTCIP Driver
- CVS
 - CVS J2735 Driver
- DMS
 - DMS Driver
- EM
- GPIO
 - GPIO Driver
- HAR
 - HAR DR2000 Driver
- IDS
 - IDS Vehicle Alert Driver
 - IDS Device Status Alarm Driver
- LCS
 - LCS NTCIP Driver
- MAS
- MLS
 - MLS NTCIP Driver
- RMS
 - RMS NTCIP Driver

- RWIS
 - RWIS NTCIP Driver
- SB
 - SB Driver
- TPS
 - TPS Driver
- TSS
 - TSS RTMS Driver

Configured Devices

- A simulated beacon in an "Active" op status.
- A simulated camera in an "Active" op status.
- A simulated RSE in an "Active" op status.
- A simulated DMS in an "Active" op status.
- A simulated I/O device, of any type in an "Active" op status.
- A simulated HAR in an "Active" op status.
- A simulated vehicle alert device in an "Active" op status.
- A simulated LCS in an "Active" op status.
- A simulated controller in an "Active" op status.
- A simulated RMC in an "Active" op status.
- A simulated station in an "Active" op status.
- A simulated safety barrier in an "Active" op status.
- A simulated truck parking facility in an "Active" op status.
- A simulated detector in an "Active" op status.

Other Prerequisite Conditions

- A valid SMTP server configured.
- A user that is a member of the administrator group.
- A non-administrator user that has all permissions except for the following from IDS:
 - "Allows users to manage equipment groups"
 - "Allows users to manage device alarm groups"
- A CNA contact configured with the email address of the person running the test.
- A CNA contact group that contains the CNA contact of the person running the test.

Test Procedure

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

Requirement Number(s)	Test Steps	Expected Results	P	F
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1	SRT-1051	<p>Open the Config Editor. Review the config file for a configuration value to send an email when a device transitions to Out of Service. If not present, add the tester's email address to the list of recipients to receive out of service notifications. Save any changes.</p> <p>If the config file has changed, restart the driver.</p>	The software has a configuration file value for an email to send a notification when a device transitions to Out of Service.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1052	<p>Open and log into the Operator Map as the administrator user.</p> <p>Open the Beacon Status dialog.</p> <p>Change the op status of the simulated beacon for this test to Out of Service.</p> <p>Review the received email.</p>	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1052	<p>Open the Camera Control dialog.</p> <p>Change the op status of the simulated camera for this test to Out of Service.</p> <p>Review the received email.</p>	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-1052	<p>Open the DMS Status dialog.</p> <p>Change the op status of the simulated DMS for this test to Out of Service.</p> <p>Review the received email.</p>	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1052	<p>Open the HAR Status dialog.</p> <p>Change the op status of the simulated HAR for this test to Out of Service.</p> <p>Review the received email.</p>	When a device transitions to Out of Service, an email is sent to the email configured in the	<input type="checkbox"/>	<input type="checkbox"/>

			configuration file.		
6	SRT-1052	Open the I/O Device Manager dialog. Change the op status of the simulated I/O device for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1052	Open the LCS Status dialog. Change the op status of the simulated LCS for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
8	SRT-1052	Open the MLS Controller Status dialog. Change the op status of the simulated controller for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1052	Open the Ramp Meter Status dialog. Change the op status of the simulated ramp meter for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
10	SRT-1052	Open the RSE Status dialog. Change the op status of the simulated RSE for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email	<input type="checkbox"/>	<input type="checkbox"/>

			configured in the configuration file.		
11	SRT-1052	Open the RWIS Status dialog. Change the op status of the simulated RWIS for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
12	SRT-1052	Open the Safety Barrier Status dialog. Change the op status of the simulated safety barrier for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
13	SRT-1052	Open the Truck Parking Facility Status dialog. Change the op status of the simulated truck parking facility for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
14	SRT-1052	Open the TSS Status dialog. Change the op status of the simulated detector for this test to Out of Service. Review the received email.	When a device transitions to Out of Service, an email is sent to the email configured in the configuration file.	<input type="checkbox"/>	<input type="checkbox"/>
15	SRT-1052	Open the Vehicle Alert Device Status dialog. Change the op status of the simulated vehicle alert device for this test to Out of Service.	When a device transitions to Out of Service,	<input type="checkbox"/>	<input type="checkbox"/>

		Review the received email.	an email is sent to the email configured in the configuration file.		
16	SRT-1039 SRT-1040	Open the Equipment Group Configuration dialog. Add a new equipment group and review the list of available devices to add to the group. Add the simulated device of each type to the equipment group. Save the changes.	The software allows a user with permission to configure a device group. A device group consists of a list of devices which report an Op Status.	<input type="checkbox"/>	<input type="checkbox"/>
17	SRT-1041 SRT-1042	Open the Device Alarm Group Configuration dialog. Review the list of available fields to configure on a device alarm group. Add a new device alarm group with the following configuration: <ul style="list-style-type: none"> • Set the error alarm threshold to 99 and the error recovery threshold to 0. • Set the failed alarm threshold to 100 and the failed recovery threshold to 100. • Enable emails and Operator Map alerts. • Associate only the equipment groups created in the previous step. • Associate at least the tester's contact. • Do not associate a contact group. Save the new device alarm group.	The software allows a user with permission to configure a monitored group of devices. A monitored groups of devices contains a name, one or more device groups, a percentage of devices that are in an Error Op Status before triggering a notification, a recovery percentage for devices with an Error Op Status, a	<input type="checkbox"/>	<input type="checkbox"/>

			percentage of devices that have a Failed Op Status before triggering a notification, a recovery percentage for devices with a Failed Op Status, an optional list of Contacts or Contact Groups, an option to send email notifications, and an option to create an alert.		
18	SRT-1043	<p>Stop all simulators for the devices used in this test.</p> <p>Open the Beacon Status dialog. Change the op status of the simulated beacon to Active. Wait for the beacon to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the Camera Control dialog. Change the op status of the simulated camera for this test to Active. Attempt to PTZ the camera to transition the camera to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the DMS Status dialog. Change the op status of the simulated DMS for this test to Active. Wait for the DMS to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p>	When the software detects that the number of devices in a monitored group with an Error Op status exceeds the threshold for a notification, the system sends notifications based on the setting for the monitored group.	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Open the HAR Status dialog. Change the op status of the simulated HAR for this test to Active. Attempt to send a message to the HAR and wait for the HAR to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the I/O Device Manager dialog. Change the op status of the simulated I/O device for this test to Active. Wait for the I/O device to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the LCS Status dialog. Change the op status of the simulated device for this test to Active. Wait for the LCS device to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the MLS Controller Status dialog. Change the op status of the simulated controller to Active. Wait for the controller to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the Ramp Meter Status dialog. Change the op status of the simulated RMC to Active. Wait for the controller to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the RSE Status dialog. Change the op status of the simulated RSE to Active. Wait for the RSE to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the RWIS Status dialog. Change the op status of the simulated station to Active. Wait for the station to transition to an Error op</p>		
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		<p>status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the Safety Barrier Status dialog. Change the op status of the simulated station to Active. Wait for the safety barrier station to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the Truck Parking Facility Status dialog. Change the op status of the simulated facility to Active. Wait for the facility to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the TSS Status dialog. Change the op status of the simulated detector to Active. Wait for the detector to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Open the Vehicle Alert Device Status dialog. Change the op status of the simulated vehicle alert device for this test to Active. Wait for the vehicle alert device to transition to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Review the System Alerts dialog.</p> <p>Review the received email.</p>			
19	<p>SRT-1048 SRT-1049</p>	<p>Open the Alarm Details dialog for the alarm. Review the list of available fields on the alarm.</p>	<p>When an alert is presented to the user, the alert contains the name of the monitored group. As part of the alert details, the software displays a grid</p>	<input type="checkbox"/>	<input type="checkbox"/>

			of the group's devices and their current Op Statuses.		
20	SRT-1050	From the Alarm Details dialog for the alarm, review the list of available resolution options. Dismiss the alarm as a false alarm.	The options for handling the alert only include Dismiss as already Detected, Dismiss as False Alarm, and Acknowledge, Take No Action. The user can handle the alert by dismissing it as a false alarm.	<input type="checkbox"/>	<input type="checkbox"/>
21	SRT-1053	Review the related archive data in the database using the following query: <pre>SELECT * FROM FDOT_OWN.IDS_INCIDENT_ALARM ALARM JOIN FDOT_OWN.IDS_DEVICE_STATUS_ALARM_DATA DEVICE ON ALARM.REF_ID = DEVICE.INCIDENT_ALARM_ID;</pre>	The software archives in the database the instances where the monitored group exceeds the notification threshold and logs the name of the monitored group, the time of the alert, indicates if an email or alert was sent, and whether the triggering event was caused by an	<input type="checkbox"/>	<input type="checkbox"/>

			Error or a Failed state of the devices.		
22	SRT-1044	<p>Start the simulator for the simulated beacon. Start the driver to resume communication attempts. Wait for the beacon to return to an Active op status.</p> <p>Stop the simulator for the simulated beacon. Wait for the beacon to return to an Error op status. Stop the driver to discontinue communication attempts to the device.</p> <p>Review the System Alerts dialog.</p> <p>Wait for an email.</p>	<p>The percentage of devices with an Error Op Status must decrease below the recovery threshold before the monitored group triggers another notification.</p> <p>No alarm is generated and no email is sent.</p>	<input type="checkbox"/>	<input type="checkbox"/>
23	SRT-1043 SRT-1044 SRT-1050	<p>Start the simulator for each simulated device. Start the driver to resume communication attempts. Wait for the status of each device to return to Active.</p> <p>Stop the simulator for each simulated device. Wait for the status of each device to return to Error.</p> <p>Review the System Alerts dialog.</p> <p>Review the received email.</p> <p>Dismiss the alarm by dismissing it as already detected.</p>	<p>The percentage of devices with an Error Op Status must decrease below the recovery threshold before the monitored group triggers another notification.</p> <p>When the software detects that the number of devices in a monitored group with an Error Op status exceeds the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>threshold for a notification, the system send notifications based on the setting for the monitored group. The options for handling the alert only include Dismiss as already Detected, Dismiss as False Alarm, and Acknowledge, Take No Action. The user can handle the alert by dismissing it as already detected.</p>		
24	<p>SRT-1053</p>	<p>Review the related archive data in the database using the following query:</p> <pre>SELECT * FROM FDOT_OWN.IDS_INCIDENT_ALARM ALARM JOIN FDOT_OWN.IDS_DEVICE_STATUS_ALARM_DATA DEVICE ON ALARM.REF_ID = DEVICE.INCIDENT_ALARM_ID;</pre>	<p>The software archives in the database the instances where the monitored group exceeds the notification threshold and logs the name of the monitored group, the time of the alert, indicates</p>	<input type="checkbox"/>	<input type="checkbox"/>

			if an email or alert was sent, and whether the triggering event was caused by an Error or a Failed state of the devices.		
25	SRT-1041 SRT-1042	<p>Start the simulator for each simulated device. Wait for the status of each device to return to Active.</p> <p>Open the Device Alarm Group Configuration dialog.</p> <p>Modify the device alarm group with the following configuration:</p> <ul style="list-style-type: none"> • Set the error alarm threshold to 100 and the error recovery threshold to 100. • Set the failed alarm threshold to 50 and the failed recovery threshold to 25. • Enable Operator Map alerts. • Disable emails. • Associate only the equipment groups created in the previous step. • Do not associate a contact. • Associate at least the contact group with the tester's contact. <p>Save the device alarm group.</p>	<p>The software allows a user with permission to configure a monitored group of devices. A monitored groups of devices contains a name, one or more device groups, a percentage of devices that are in an Error Op Status before triggering a notification, a recovery percentage for devices with an Error Op Status, a percentage of devices that have a Failed Op Status before triggering a notification, a recovery</p>	<input type="checkbox"/>	<input type="checkbox"/>

			percentage for devices with a Failed Op Status, an optional list of Contacts or Contact Groups, an option to send email notifications, and an option to create an alert.		
26	SRT-1045 SRT-1050	<p>Stop the simulator for eight of the simulated devices. Wait for the status of each simulated device to change to Failed.</p> <p>Review the System Alerts dialog.</p> <p>Wait for an email.</p> <p>Dismiss the alarm by selecting the option to acknowledge and take no action.</p>	<p>When the software detects that the number of devices in a monitored group with a Failed Op Status exceeds the threshold for a notification, the system sends notifications based on the setting for the monitored group.</p> <p>The options for handling the alert only include Dismiss as already Detected, Dismiss as False Alarm, and Acknowledge,</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>Take No Action.</p> <p>The user can handle the alert using the option to acknowledge and take no action.</p> <p>If email options for a monitored group are not configured, no notification is sent.</p>		
27	SRT-1053	<p>Review the related archive data in the database using the following query:</p> <pre>SELECT * FROM FDOT_OWN.IDS_INCIDENT_ALARM ALARM JOIN FDOT_OWN.IDS_DEVICE_STATUS_ALARM_DATA DEVICE ON ALARM.REF_ID = DEVICE.INCIDENT_ALARM_ID;</pre>	<p>The software archives in the database the instances where the monitored group exceeds the notification threshold and logs the name of the monitored group, the time of the alert, indicates if an email or alert was sent, and whether the triggering event was caused by an Error or a Failed state of the devices.</p>	<input type="checkbox"/>	<input type="checkbox"/>
28	SRT-1046	<p>Start the simulator for one of the simulated devices. Wait for the status of the simulated device to return to Active.</p>	<p>The percentage of devices with a</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Stop the simulator for one of the simulated devices. Wait for the status of the simulated device to return to Failed. Review the System Alerts dialog. Wait for an email.</p>	<p>Failed Op Status must decrease below the recovery threshold before the monitored group triggers another notification. No alarm is generated and no email is sent.</p>		
29	<p>SRT-1045 SRT-1046</p>	<p>Start the simulator for five of the simulated devices. Wait for the status of each simulated device to return to Active. Stop the simulator for five of the simulated devices. Wait for the status of the simulated device to return to Failed. Review the System Alerts dialog. Wait for an email.</p>	<p>When the software detects that the number of devices in a monitored group with a Failed Op Status exceeds the threshold for a notification, the system sends notifications based on the setting for the monitored group. The percentage of devices with a Failed Op Status must decrease below the recovery threshold before the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			monitored group triggers another notification.		
30		Start the simulator for all of the simulated devices. Wait for the status of each simulated device to return to Active. Review the System Alerts dialog.	The alarm is automatically resolved.	<input type="checkbox"/>	<input type="checkbox"/>
31	SRT-1053	Review the related archive data in the database using the following query: <pre>SELECT * FROM FDOT_OWN.IDS_INCIDENT_ALARM ALARM JOIN FDOT_OWN.IDS_DEVICE_STATUS_ALARM_DATA DEVICE ON ALARM.REF_ID = DEVICE.INCIDENT_ALARM_ID;</pre>	The software archives in the database the instances where the monitored group exceeds the notification threshold and logs the name of the monitored group, the time of the alert, indicates if an email or alert was sent, and whether the triggering event was caused by an Error or a Failed state of the devices.	<input type="checkbox"/>	<input type="checkbox"/>
32	SRT-1041 SRT-1042	Open the Device Alarm Group Configuration dialog. Modify the device alarm group with the following configuration: <ul style="list-style-type: none"> Set the error alarm threshold to 100 and the error recovery threshold to 100. Set the failed alarm threshold to 50 and the failed recovery threshold to 25. 	The software allows a user with permission to configure a monitored group of devices. A monitored groups of devices	<input type="checkbox"/>	<input type="checkbox"/>

		<ul style="list-style-type: none"> • Disable Operator Map alerts. • Enable emails. • Associate only the equipment groups created in the previous step. • Associate at least the tester's contact. • Associate at least the contact group with the tester's contact. <p>Save the device alarm group.</p>	<p>contains a name, one or more device groups, a percentage of devices that are in an Error Op Status before triggering a notification, a recovery percentage for devices with an Error Op Status, a percentage of devices that have a Failed Op Status before triggering a notification, a recovery percentage for devices with a Failed Op Status, an optional list of Contacts or Contact Groups, an option to send email notifications, and an option to create an alert.</p>		
33	<p>SRT-1045 SRT-1047</p>	<p>Stop the simulator for eight of the simulated devices. Wait for the status of each simulated device to change to Failed. Review the System Alerts dialog. Review the received email.</p>	<p>When the software detects that the number of devices in a monitored</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>

			<p>group with a Failed Op Status exceeds the threshold for a notification, the system sends notifications based on the setting for the monitored group. If alert options for a monitored group are not configured, no notification is sent.</p>		
34	<p>SRT-1053</p>	<p>Review the related archive data in the database using the following query:</p> <pre>SELECT * FROM FDOT_OWN.IDS_INCIDENT_ALARM ALARM JOIN FDOT_OWN.IDS_DEVICE_STATUS_ALARM_DATA DEVICE ON ALARM.REF_ID = DEVICE.INCIDENT_ALARM_ID;</pre>	<p>The software archives in the database the instances where the monitored group exceeds the notification threshold and logs the name of the monitored group, the time of the alert, indicates if an email or alert was sent, and whether the triggering event was caused by an Error or a</p>	<input type="checkbox"/>	<input type="checkbox"/>

			Failed state of the devices.		
35	SRT-1041	Open the Device Alarm Group Configuration dialog. Delete the device alarm group.	The software allows a user with permission to configure a monitored group of devices.	<input type="checkbox"/>	<input type="checkbox"/>
36	SRT-1039 SRT-1040	Open the Equipment Group Configuration dialog, modify an equipment group by adding a device and removing a device. Save the changes.	The software allows a user with permission to configure a device group.	<input type="checkbox"/>	<input type="checkbox"/>
37	SRT-1039	From the Equipment Group Configuration dialog, delete the equipment group. Save the changes.	The software allows a user with permission to configure a device group. A device group consists of a list of devices which report an Op Status.	<input type="checkbox"/>	<input type="checkbox"/>
38	SRT-1039	Open and log into the Operator Map as the non-administrator user. Attempt to open the Equipment Group Configuration dialog.	The software does not allow a user without permission to configure a device group.	<input type="checkbox"/>	<input type="checkbox"/>
39	SRT-1041	From the Operator Map of the non-administrator user, attempt to open the Device Alarm Group Configuration dialog.	The software does not allow a user without permission to configure a monitored group of devices.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
FDOT Witness	
SwRI Witness	

13. IC-11: SG-4562 Nearest Camera for Sparr created events

13.1 Objectives

The objective of this integration case is to test the requirements associated with adding functionality to EM to add the nearest camera to a new or modified event from the AVL interface.

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.

Requirement Number	Requirement Text
SRT-991	When an event is created with a location outside the user interface, the software will automatically set the nearest, in-service camera as the associated camera of the event.
SRT-992	When the location of an event is modified outside of the user interface, the software will automatically set the nearest, in-service camera as the associated camera of the event.

13.3 Test Approach

These tests will show that managing events will still assign the nearest camera to the event based on the location.

13.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CCTV
- EM
- CNA
- AVLRR
 - SPARR Driver

Configured Devices

- Identify or configure two pairs of cameras, each on the same roadway and direction, and at the same approximate location as an EM location chosen for testing.
 - In each pair, the camera closer to the EM location should be in an "Out of Service" op status.
 - In each pair, the camera further from the EM location should be in an "Active" op status.

- All other nearby cameras should have an op status other than "Out of Service".

4.3 Other Prerequisite Conditions

- SPARR App connected to the system.
- An XML Tester application connected and authenticated to EM.
- Identify two or more EM locations that will be used for testing and meet the criteria in relation to the camera configuration above.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-991	Open the SPARR app and log in. Create an event at the predefined EM location. Open and log in to the Map. Open the Event Details dialog for the event that was created. Observe the currently assigned nearest CCTV.	When an event is created with a location outside the user interface, the software automatically sets the nearest, in-service camera as the associated camera of the event.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-991	From XML Tester, send a request to create an event with the predefined location and no nearest CCTV set. Open the Event Details dialog for the event that was created. Observe the currently assigned nearest CCTV.	When an event is created with a location outside the user interface, the software automatically sets the nearest, in-service camera as the associated camera of the event.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-992	From XML Tester, send a request to modify the event location created in the previous step to the second predefined EM location. After receiving the response, send another request to modify the event details and change the point of the event to the same latitude and longitude of the new location.	When the location of an event is modified outside the user interface, the software automatically sets the nearest, in-service camera as the associated camera of the event.	<input type="checkbox"/>	<input type="checkbox"/>

		Open the Event Details dialog for the event that was modified. Observe the currently assigned nearest CCTV.			
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

14. IC-12: SG-6201 Add EM audit events to DAR XML feed

14.1 Objectives

The objective of this integration case is to test the requirements associated with adding EM audit events to DAR XML feed.

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.

Requirement Number	Requirement Text
SRT-1026	The system will allow the users to receive updates for events no longer in the list of available events.
SRT-1027	The software will send updates for events no longer in the available event list through the interface to RITIS.
SRT-1028	When an event that is no longer in the list of available events is audited, the system will send the complete event object through the interface to RITIS.

14.3 Test Approach

The tests will show that our software sends DAR the complete event XML when an event that is no longer available is audited.

14.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- AVL/RR
- CNA
- EM
- DAR
- DARRITIS

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- Identify an event that is no longer in the event list of the map. The event should have the following pre-configuration:

- A location assigned.
- At least one lane blockage entry.
- At least one vehicle dispatch entry.
- At least one comment.
- An agency with at least two contacts
- Configure DAR to upload files to a local FTP server.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1026	Open the User Management dialog. Observe the permissions for the DAR system user.	The system allows users to receive updates for events no longer in the list of available event list. There is a permission to receive updates to events not in the list of available events.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1027 SRT-1028	Open the Event Audit dialog and retrieve the information to audit the notifying agency and contact Modify the notifying contact. Save the audited event information. Wait approximately one minute. Review the XML that was uploaded to the test FTP server.	The software sends updates for events no longer in in the available event list through the interface to RITIS. When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1027 SRT-1028	Open the Event Audit dialog and retrieve the information to audit the event status. Modify the timestamp of an event status. Save the audited event information.	The software sends updates for events no longer in in the available event list through the interface to RITIS. When an event that is no longer in the list of available events is audited, the system sends the	<input type="checkbox"/>	<input type="checkbox"/>

		Wait approximately one minute. Review the XML that was uploaded to the test FTP server.	complete event object through the interface to RITIS.		
4	SRT-1027 SRT-1028	Open the Event Audit dialog and retrieve the information to audit the event type. Modify the event type of an entry. Save the audited event information. Wait approximately one minute. Review the XML that was uploaded to the test FTP server.	The software sends updates for events no longer in in the available event list through the interface to RITIS. When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1027 SRT-1028	Open the Event Audit dialog and retrieve the information to audit the location. Modify the location of the event. Save the audited event information. Wait approximately one minute. Review the XML that was uploaded to the test FTP server.	The software sends updates for events no longer in in the available event list through the interface to RITIS. When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-1027 SRT-1028	Open the Event Audit dialog and retrieve the information to audit the blockage. Modify the lane map. Save the audited event information. Wait approximately one minute. Review the XML that was uploaded to the test FTP server.	The software sends updates for events no longer in in the available event list through the interface to RITIS. When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1027 SRT-1028	Open the Event Audit dialog and retrieve the information to audit the vehicle dispatch information.	The software sends updates for events no longer in in the available event list through the interface to RITIS.	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Modify the timestamp of a vehicle.</p> <p>Add an activity to the dispatched vehicle.</p> <p>Save the audited event information.</p> <p>Wait approximately one minute. Review the XML that was uploaded to the test FTP server.</p>	<p>When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.</p>		
8	<p>SRT-1027 SRT-1028</p>	<p>Open the Event Audit dialog and retrieve the information to audit the responders.</p> <p>Modify a responder entry's timestamps.</p> <p>Save the audited event information.</p> <p>Wait approximately one minute. Review the XML that was uploaded to the test FTP server.</p>	<p>The software sends updates for events no longer in in the available event list through the interface to RITIS.</p> <p>When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.</p>	<input type="checkbox"/>	<input type="checkbox"/>
9	<p>SRT-1027 SRT-1028</p>	<p>Open the Event Audit dialog and retrieve the information to audit the involved vehicles.</p> <p>Add an involved vehicle.</p> <p>Save the audited event information.</p> <p>Wait approximately one minute. Review the XML that was uploaded to the test FTP server.</p>	<p>The software sends updates for events no longer in in the available event list through the interface to RITIS.</p> <p>When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.</p>	<input type="checkbox"/>	<input type="checkbox"/>
10	<p>SRT-1027 SRT-1028</p>	<p>Open the Event Audit dialog and retrieve the information to audit the comments.</p> <p>Modify the timestamp of a comment.</p> <p>Save the audited event information.</p> <p>Wait approximately one minute. Review the XML</p>	<p>The software sends updates for events no longer in in the available event list through the interface to RITIS.</p> <p>When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		that was uploaded to the test FTP server.			
11	SRT-1027 SRT-1028	<p>Open the Event Audit dialog and retrieve the information to audit the event details.</p> <p>Modify an attribute and update the CAD number.</p> <p>Save the audited event information.</p> <p>Wait approximately one minute. Review the XML that was uploaded to the test FTP server.</p>	<p>The software sends updates for events no longer in in the available event list through the interface to RITIS.</p> <p>When an event that is no longer in the list of available events is audited, the system sends the complete event object through the interface to RITIS.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
FDOT Witness	
SwRI Witness	

15. IC-13: SG-5364 Request to enhance for Vehicle dispatch documentation

15.1 Objectives

The objective of this integration case is to test the requirements associated with notifying users when vehicles dispatched to multiple events arrive at another event.

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.

Requirement Number	Requirement Text
SRT-999	The software will have a configuration option to notify operators when a vehicle arrives at different event than the dispatched event.
SRT-1000	When a vehicle is dispatched to multiple events and arrives at one of them, the owners of the events to which the vehicle did not arrive will receive a popup indicating the vehicle has arrived at another event.
SRT-1001	The software will allow the operator to cancel the dispatch or close the popup, leaving the vehicle dispatched to the event.

15.3 Test Approach

The tests will show that our software notifies owners events when a vehicle that has been dispatched to an event they own arrives at a different event.

15.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- EM
- CNA
- AVLRR
 - SPARR Driver

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- At least one AVL/RR vehicle configured in a "Patrolling" status.

- The System Setting for "Notify event owners when a dispatched vehicle arrives at another event." is disabled.
- Two different users, both with administrator permissions

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-999	<p>Open and log into a map. Open the System Settings Configuration dialog.</p> <p>Enable the setting labeled "Notify event owners when a dispatched vehicle arrives at another event." and save the updated system settings.</p>	The software has a configuration option to notify operators when a vehicle arrives at different event than the dispatched event.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1000 SRT-1001	<p>Create an event. Dispatch the preconfigured vehicle to the event. Open and log into a second map as the other user. Create a new event from the second user's map. Dispatch and arrive the same preconfigured vehicle to the second user's event. Observe the options on the notification popup.</p> <p>From the popup, select the option to cancel the dispatch. Return to the first user's event details dialog and observe the vehicle dispatch section.</p> <p>From the second user's map, open the Event Details dialog for the event. In the Vehicle Dispatch section, add at least one activity to the vehicle dispatch entry and depart the vehicle from the event.</p>	<p>When a vehicle is dispatched to multiple events and arrives at one of them, the owners of the events to which the vehicle did not arrive receive a popup indicating the vehicle has arrived at another event.</p> <p>The popup only appears for the first user's map.</p> <p>The software allows the operator to cancel the dispatch.</p> <p>The vehicle dispatch section of the first user's event has a cancelled timestamp for the vehicle dispatch entry, indicating the dispatched vehicle request was cancelled.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1000 SRT-1001	From the original user's map, create another event, and dispatch	When a vehicle is dispatched to multiple	<input type="checkbox"/>	<input type="checkbox"/>

		<p>the preconfigured vehicle to the event.</p> <p>Create a new event from the second user's map. Dispatch and arrive the same preconfigured vehicle to the second user's event. From the popup, select the option to not cancel the dispatch. Return to the first user's event details dialog and observe the vehicle dispatch section.</p> <p>From the second user's map, open the Event Details dialog for the event. In the Vehicle Dispatch section, add at least one activity to the vehicle dispatch entry and depart the vehicle from the event.</p> <p>From the first user's map, open the Event Details dialog for the event. In the Vehicle Dispatch section, arrive the vehicle, add at least one activity to the vehicle dispatch entry, and depart the vehicle from the event.</p>	<p>events and arrives at one of them, the owners of the events to which the vehicle did not arrive receive a popup indicating the vehicle has arrived at another event.</p> <p>The popup only appears for the first user's map.</p> <p>The software allows the operator to close the popup, leaving the vehicle dispatched to the event.</p> <p>The vehicle's current availability status is "Arrived".</p> <p>The vehicle dispatch section of the first user's event has no arrival or cancelled timestamp indicating the dispatch vehicle request is still pending arrival or cancellation.</p>		
4	SRT-999	<p>Open the System Settings Configuration dialog.</p> <p>Disable the setting labelled "Notify event owners when a dispatched vehicle arrives at another event." and save the updated system settings.</p> <p>Create an event. Dispatch the preconfigured vehicle to the event.</p> <p>Create a new event from the second user's map. Dispatch and arrive the same preconfigured vehicle to the second user's event.</p> <p>Wait for a popup to appear.</p>	<p>No popup is displayed for either map indicating the vehicle was arrived at another event.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
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FDOT Witness	
SwRI Witness	

16. IC-14: SG-5876 Ceased Use

16.1 Objectives

The objective of this integration case is to test the requirements associated with retaining deleted configuration items for use in reporting in the remaining subsystems.

16.2 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.

Requirement Number	Requirement Text
SRT-1100	When a beacon is deleted, it will be removed from the running system but remain in the database.
SRT-1101	When an RSE is deleted, it will be removed from the running system but remain in the database.
SRT-1102	When a Contact Notification Area is deleted, it will be removed from the running system but remain in the database.
SRT-1103	When a Contact Group is deleted, it will be removed from the running system but remain in the database.
SRT-1104	When a Contact is deleted, it will be removed from the running system but remain in the database.
SRT-1105	When a DMS Message Action is deleted, it will be removed from the running system but remain in the database.
SRT-1106	When an I/O Device Group is deleted, it will be removed from the running system but remain in the database.
SRT-1107	When an I/O Device is deleted, it will be removed from the running system but remain in the database.
SRT-1108	When a I/O State is deleted, it will be removed from the running system but remain in the database.
SRT-1109	When a HAR is deleted, it will be removed from the running system but remain in the database.
SRT-1110	When an Icon Group is deleted, it will be removed from the running system but remain in the database.
SRT-1111	When a Citilog Camera is deleted, it will be removed from the running system but remain in the database.
SRT-1112	When a Vehicle Alert Device is deleted, it will be removed from the running system but remain in the database.
SRT-1113	When an Action List Template is deleted, it will be removed from the running system but remain in the database.
SRT-1114	When an Action Template is deleted, it will be removed from the running system but remain in the database.
SRT-1115	When an MLS Controller is deleted, it will be removed from the running system but remain in the database.

SRT-1116	When a Gate is deleted, it will be removed from the running system but remain in the database.
SRT-1117	When a Managed Road is deleted, it will be removed from the running system but remain in the database.
SRT-1118	When a Ramp is deleted, it will be removed from the running system but remain in the database.
SRT-1119	When a Segment is deleted, it will be removed from the running system but remain in the database.
SRT-1120	When an RWIS Station is deleted, it will be removed from the running system but remain in the database.
SRT-1121	When an RWIS Threshold is deleted, it will be removed from the running system but remain in the database.
SRT-1122	When a Remote Center is deleted, it will be removed from the running system but remain in the database.
SRT-1123	When a Ramp Metering Controller is deleted, it will be removed from the running system but remain in the database.
SRT-1124	When a RISC Contract is deleted, it will be removed from the running system but remain in the database.
SRT-1125	When a RISC Contract Zone is deleted, it will be removed from the running system but remain in the database.
SRT-1126	When a Report is deleted, it will be removed from the running system but remain in the database.
SRT-1127	When a Report Group is deleted, it will be removed from the running system but remain in the database.
SRT-1128	When a Schedule is deleted, it will be removed from the running system but remain in the database.
SRT-1129	When a Scheduled Item is deleted, it will be removed from the running system but remain in the database.
SRT-1130	When an Action List is deleted, it will be removed from the running system but remain in the database.
SRT-1131	When a Safety Barrier is deleted, it will be removed from the running system but remain in the database.
SRT-1132	When a Traffic Signal Route is deleted, it will be removed from the running system but remain in the database.
SRT-1133	When a Travel Time Destination is deleted, it will be removed from the running system but remain in the database.
SRT-1134	When a Travel Time Device Template is deleted, it will be removed from the running system but remain in the database.
SRT-1135	When a Travel Time Message Template is deleted, it will be removed from the running system but remain in the database.
SRT-1136	When a Travel Time Link is deleted, it will be removed from the running system but remain in the database.

SRT-1137	When a Travel Time Threshold is deleted, it will be removed from the running system but remain in the database.
SRT-1138	When a Truck Parking Facility is deleted, it will be removed from the running system but remain in the database.
SRT-1139	When a Truck Parking Area is deleted, it will be removed from the running system but remain in the database.
SRT-1140	When a Truck Parking Zone is deleted, it will be removed from the running system but remain in the database.
SRT-1141	When a Truck Parking Verification Schedule is deleted, it will be removed from the running system but remain in the database.
SRT-1142	When a Video Destination is deleted, it will be removed from the running system but remain in the database.
SRT-1143	When a Video Source is deleted, it will be removed from the running system but remain in the database.
SRT-1144	When a Video Tour is deleted, it will be removed from the running system but remain in the database.
SRT-1145	When a Virtual Wall is deleted, it will be removed from the running system but remain in the database.
SRT-1146	When a Video Switching Workstation is deleted, it will be removed from the running system but remain in the database.
SRT-1147	When a Lane Control Sign is deleted, it will be removed from the running system but remain in the database.
SRT-1148	When a Lane Control Sign Graphic is deleted, it will be removed from the running system but remain in the database.
SRT-1149	When a Floodgate Library Folder is deleted, it will be removed from the running system but remain in the database.
SRT-1150	When a Floodgate Library Message is deleted, it will be removed from the running system but remain in the database.
SRT-1151	When a TAM Library Folder is deleted, it will be removed from the running system but remain in the database.
SRT-1152	When a TAM Library Message is deleted, it will be removed from the running system but remain in the database.
SRT-1153	When an SAA Equipment Group is deleted, it will be removed from the running system but remain in the database.
SRT-1154	When an IDS Device Alarm Group is deleted, it will be removed from the running system but remain in the database.
SRT-1155	The software will allow the user to retrieve the list of ceased use RISC contract zones and use the ceased items as parameters when running reports.
SRT-1156	The software will allow the user to retrieve the list of ceased use RWIS stations and use the ceased items as parameters when running reports.
SRT-1157	The software will allow the user to retrieve the list of ceased use travel time links and use the ceased items as parameters when running reports.

16.3 Test Approach

These test steps will ensure every application of the ceased use boolean column functions properly in the system.

16.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- BMS
- C2C Subscriber
- CNA
- CVS
- GPIO
- HAR
- IDS
- LCS
- MLS
- RCA
- RISC
- RMS
- RS
- RWIS
- SAS
- SB
- TCS
 - TCS Naztec Driver
- TPS
- TVT
- VS

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- Naztec Simulator should be running and simulating at least one plan.
- The following reports should be configured in the system:
 - RISC Chronology Report
 - Segment Average Travel Time Line Graph

Test Procedure

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

	Requirement Number (s)	Test Steps	Expected Results	P	F
1	SRT-1100	From the Operator Map, open the Beacon Configuration dialog. Add and save a beacon. Delete the beacon and save. Review the <code>FDOT_OWN.BMS_EQUIP</code> table in the database.	When a Beacon is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1101	Open the RSE Configuration dialog. Add and save an RSE. Delete the RSE and save. Review the <code>FDOT_OWN.CVS_RSE</code> table in the database.	When an RSE is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1102	Open the Area Configuration dialog. Add and save an area. Delete the area and save. Review the <code>FDOT_OWN.CNA_AREA</code> table in the database.	When a Contact Group Notification Area is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-1103	Open the Contact Group Configuration dialog. Add and save a contact group. Delete the contact group and save. Review the <code>FDOT_OWN.CNA_CONTACT_GROUPS</code> table in the database.	When a Contact Group is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>

5	SRT-1104	Open the Contact Configuration dialog. Add and save a contact. Delete the contact and save. Review the <code>FDOT_OWN.CNA_CONTACT_INFO</code> table in the database.	When a Contact is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-1105	Open the DMS Message Action Configuration dialog. Add and save a DMS message action. Delete the DMS message action and save. Review the <code>FDOT_OWN.GPIO_DMS_MESSAGE_ACTION</code> table in the database.	When a DMS Message Action is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1106	Open the I/O Device Group Configuration dialog. Add and save an I/O device group. Delete the I/O device group. Review the <code>FDOT_OWN.GPIO_DEVICE_GROUP</code> table in the database.	When an I/O Device Group is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
8	SRT-1107	Open the I/O Device Configuration dialog. Add and save an I/O device. Delete the I/O device. Review the <code>FDOT_OWN.GPIO_DEVICE</code> table in the database.	When an I/O Device is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1108	Open the I/O State Configuration dialog. Add and save an I/O state. Delete the I/O state. Review the <code>FDOT_OWN.GPIO_DEVICE_TYPE_DESCRIPTION_VALUE_OPTIONS</code> table in the database.	When an I/O State is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
10	SRT-1109	Open the HAR Configuration dialog. Add and save a HAR.	When a HAR is deleted, it is removed from the running	<input type="checkbox"/>	<input type="checkbox"/>

		Delete the HAR. Review the <code>FDOT_OWN.HAR_EQUIP</code> table in the database.	system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.		
1 1	SRT-1110	Open the Icon Group Configuration dialog. Add and save an icon group. Delete the icon group and save. Review the <code>FDOT_OWN.SAA_ICON_GROUP</code> table in the database.	When an Icon Group is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
1 2	SRT-1111	Open the Citilog Camera Configuration dialog. Add and save a Citilog camera. Delete the Citilog Camera and save. Review the <code>FDOT_OWN.IDS_CITILOG_CAMERA</code> table in the database.	When a Citilog Camera is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
1 3	SRT-1112	Open the Vehicle Alert Device Configuration dialog. Add and save a vehicle alert device. Delete the vehicle alert device and save. Review the <code>FDOT_OWN.IDS_VEHICLE_ALERT_DEVICE</code> table in the database.	When a Vehicle Alert Device is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
1 4	SRT-1113	Open the Action List Template Configuration dialog. Add and save an action list template. Delete the action list template and save. Review the <code>FDOT_OWN.MLS_T_ACTION_LIST</code> table in the database.	When an Action List Template is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE_TIME</code> column for the entry is set.	<input type="checkbox"/>	<input type="checkbox"/>
1 5	SRT-1114	Open the Action Template Configuration dialog. Add and save an action template. Delete the action template and save. Review the <code>FDOT_OWN.MLS_T_ACTION</code> table in the database.	When an Action is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE_TIME</code> column for the entry is set.	<input type="checkbox"/>	<input type="checkbox"/>

1 6	SRT-1115	Open the Controller Configuration dialog. Add and save a controller. Delete the controller and save. Review the <code>FDOT_OWN.MLS_CONTROLLER</code> table in the database.	When a Controller is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE_TIME</code> column for the entry is set.	<input type="checkbox"/>	<input type="checkbox"/>
1 7	SRT-1116	Open the Gate Configuration dialog. Add and save a gate. Delete the gate and save. Review the <code>FDOT_OWN.MLS_GATE</code> table in the database.	When an Gate is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE_TIME</code> column for the entry is set.	<input type="checkbox"/>	<input type="checkbox"/>
1 8	SRT-1117	Open the Managed Road Configuration dialog. Add and save a managed road. Delete the managed road and save. Review the <code>FDOT_OWN.MLS_MANAGED_ROAD</code> table in the database.	When a Managed Road is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE_TIME</code> column for the entry is set.	<input type="checkbox"/>	<input type="checkbox"/>
1 9	SRT-1118	Open the Segment Configuration dialog. Add and save a segment. Delete the segment and save. Review the <code>FDOT_OWN.MLS_SEGMENT</code> table in the database.	When a Segment is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE_TIME</code> column for the entry is set.	<input type="checkbox"/>	<input type="checkbox"/>
2 0	SRT-1119	Open the Ramp Configuration dialog. Add and save a ramp. Delete the ramp and save. Review the <code>FDOT_OWN.MLS_RAMP</code> table in the database.	When a Ramp is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE_TIME</code> column for the entry is set.	<input type="checkbox"/>	<input type="checkbox"/>
2 1	SRT-1120	Open the Station Configuration dialog. Add and save a new station. Delete the station and save. Review the <code>FDOT_OWN.RWIS_EQUIP</code> table in the database.	When an RWIS Station is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
2 2	SRT-1121	Open the RWIS Threshold Configuration dialog. Add and save a new threshold. Delete the threshold and save.	When an RWIS Threshold is deleted, it is removed from the running system but remains in the database.	<input type="checkbox"/>	<input type="checkbox"/>

		Review the <code>FDOT_OWN.RWIS_ALARM_CONFIG</code> table in the database.	The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.		
2 3	SRT-1122	Open the Remote Center Configuration dialog. Add and save a new remote center. Delete the remote center and save. Review the <code>FDOT_OWN.RCA_REMOTE_DISTRICTS</code> table in the database.	When a Remote Center is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
2 4	SRT-1123	Open the Ramp Meter Controller Configuration dialog. Add and save a new ramp meter controller. Delete the ramp meter controller and save. Review the <code>FDOT_OWN.RMS_CONTROLLER</code> table in the database.	When a Ramp Meter Controller is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
2 5	SRT-1124	Open the Contract Configuration dialog. Add a new contract with two contract zones. Save the configuration. Delete one of the contract zone and save. Review the <code>FDOT_OWN.RISC_CONTRACT_ZONE</code> table in the database.	When a RISC Contract Zone is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
2 6	SRT-1125	From the Contract Configuration dialog, delete the contract created in the previous step and save. Review the <code>FDOT_OWN.RISC_CONTRACT</code> table in the database.	When a RISC Contract is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
2 7	SRT-1126	Open the Reporting Configuration dialog. Add a report group with two reports. Save the configuration. Delete one of the reports.	When a Report is deleted, it is removed from the running system but remains in the database.	<input type="checkbox"/>	<input type="checkbox"/>

		Review the <code>FDOT_OWN.RS_REPORT_MENU</code> table in the database.	The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.		
28	SRT-1127	From the Reporting Configuration dialog, delete the report group created in the previous step and save. Review the <code>FDOT_OWN.RS_REPORT_MENU</code> table in the database.	When a Report Group is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
29	SRT-1128	Open the Schedule Management dialog. Add and save a new schedule. Add and save two scheduled items for the schedule. Delete one of the scheduled items. Review the <code>FDOT_OWN.SAS_SCHEDULED_ITEMS</code> table in the database.	When a Scheduled Item is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
30	SRT-1129	From the Schedule Management dialog, delete the schedule created in the previous step. Review the <code>FDOT_OWN.SAS_SCHEDULES</code> table in the database.	When a Scheduled Item is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
31	SRT-1130	Open the Action List Configuration dialog. Add and save a new action list. Delete the action list and save. Review the <code>FDOT_OWN.SAS_ACTION_LISTS</code> table in the database.	When an Action List is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
32	SRT-1131	Open the Safety Barrier Configuration dialog. Add and save a new safety barrier. Delete the safety barrier and save. Review the <code>FDOT_OWN.SB_EQUIP</code> table in the database.	When a Safety Barrier is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code>	<input type="checkbox"/>	<input type="checkbox"/>

			ATE columns for the entry are set.		
3 3	SRT-1132	Open the Signal Route Configuration dialog. Add and save a new signal route. Delete the signal route and save. Review the <code>FDOT_OWN.TCS_SIGNAL_ROUTE</code> table in the database.	When a Signal Route is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
3 4	SRT-1133	Open the Destination Configuration dialog. Add and save a new destination. Delete the destination and save. Review the <code>FDOT_OWN.TVT_DESTINATIONS</code> table in the database.	When a Travel Time Destination is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
3 5	SRT-1134	Open the TVT Device Template Configuration dialog. Add and save a new device template. Delete the device template and save. Review the <code>FDOT_OWN.TVT_DEVICE_TEMPLATE</code> table in the database.	When a Travel Time Device Template is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
3 6	SRT-1135	Open the TVT Message Template Configuration dialog. Add and save a new message template. Delete the message template and save. Review the <code>FDOT_OWN.TVT_TEMPLATES</code> table in the database.	When a Travel Time Message Template is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
3 7	SRT-1136	Open the Travel Time Link Configuration dialog. Add and save a new travel time link. Delete the travel time link and save. Review the <code>FDOT_OWN.TVT_LINKS</code> table in the database.	When a Travel Time Link is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code>	<input type="checkbox"/>	<input type="checkbox"/>

			ATE columns for the entry are set.		
38	SRT-1137	Open the Travel Time Threshold Configuration dialog. Add and save a new travel time threshold. Delete the travel time threshold and save. Review the <code>FDOT_OWN.TVT_THRESHOLDS</code> table in the database.	When a Travel Time Threshold is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
39	SRT-1138	Open the Truck Parking Facility Configuration dialog. Add a new truck parking facility with two areas. Each area should have two zones added to them. Delete a zone from the default area. Review the <code>FDOT_OWN.TPS_PARKING_ZONES</code> table in the database.	When a Truck Parking Zone is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
40	SRT-1139	From the Truck Parking Facility Configuration dialog, delete the non-default area of the facility added in the previous step. Save the configuration. Delete a zone from an area. Review the <code>FDOT_OWN.TPS_PARKING_AREAS</code> table in the database.	When a Truck Parking Area is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
41	SRT-1140	From the Truck Parking Facility Configuration dialog, delete the facility from the previous step. Save the configuration. Review the <code>FDOT_OWN.TPS_PARKING_FACILITY</code> table in the database.	When a Truck Parking Facility is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
42	SRT-1141	Open the Truck Parking Verification Schedule Configuration dialog. Add and save a new truck parking verification schedule. Delete the parking verification schedule and save.	When a Truck Parking Verification Schedule is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code>	<input type="checkbox"/>	<input type="checkbox"/>

		Review the <code>FDOT_OWN.TPS_PARKING_VERIFICATION_SCHEDULES</code> table in the database.	<code>ATE</code> columns for the entry are set.		
4 3	SRT-1142	Open the Video Destination Configuration dialog. Add and save a new video destination. Delete the video destination and save. Review the <code>FDOT_OWN.VS_DEVICE</code> table in the database.	When a Video Destination is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
4 4	SRT-1143	Open the Video Source Configuration dialog. Add and save a new video source. Delete the video source and save. Review the <code>FDOT_OWN.VS_DEVICE</code> table in the database.	When a Video Source is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
4 5	SRT-1144	Open the Video Tour Configuration dialog. Add and save a new video tour. Delete the video tour and save. Review the <code>FDOT_OWN.VS_VIDEO_TOURS</code> table in the database.	When a Video Tour is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
4 6	SRT-1145	Open the Virtual Wall Configuration dialog. Add and save a new virtual wall. Delete the virtual wall and save. Review the <code>FDOT_OWN.VS_LAYOUT</code> table in the database.	When a Virtual Wall is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
4 7	SRT-1146	Open the Workstation Configuration dialog. Add and save a new workstation. Delete the workstation and save. Review the <code>FDOT_OWN.WORKSTATIONS</code> table in the database.	When a Video Switching Workstation is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>

48	SRT-1147	<p>Open the LCS Device Configuration dialog. Add and save a new LCS. Delete the LCS and save.</p> <p>Review the <code>FDOT_OWN.LCS_EQUIP</code> table in the database.</p>	<p>When a Lane Control Sign is deleted, it is removed from the running system but remains in the database.</p> <p>The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.</p>	<input type="checkbox"/>	<input type="checkbox"/>
49	SRT-1148	<p>Open the dialog to send a message to an LCS.</p> <p>If there are no available graphics, from the server, run the Powershell script <code>Import-LcsGraphics.ps1</code> to add a graphic to the software. If added, restart LCS.</p> <p>Review the available graphics when posting a message to an LCS.</p> <p>Run the powershell script <code>Import-LcsGraphics.ps1</code> to delete the graphic from the software and re-add new graphics.</p> <p>Restart the LCS subsystem.</p> <p>Open the dialog to send a message to an LCS. Review the available graphics when posting a message to an LCS.</p> <p>Review the <code>FDOT_OWN.LCS_GRAPHIC</code> table of the database.</p>	<p>When a Lane Control Sign Graphic is deleted, it is removed from the running system but remains in the database.</p> <p>The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.</p>	<input type="checkbox"/>	<input type="checkbox"/>
50	SRT-1149	<p>Open the Floodgate Management dialog. Add a floodgate library with two floodgates. Save the configuration.</p> <p>Delete one of the floodgates.</p> <p>Review the <code>FDOT_OWN.RECORDED_FLOODGATE</code> table in the database.</p>	<p>When a Floodgate Library Message is deleted, is be removed from the running system but remain in the database.</p> <p>The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.</p>	<input type="checkbox"/>	<input type="checkbox"/>
51	SRT-1150	<p>From the Floodgate Management dialog, delete the floodgate library created in the previous step and save.</p> <p>Review the <code>FDOT_OWN.FOLDER</code> table in the database.</p>	<p>When a Floodgate Library Folder is deleted, it is removed from the running system but remain in the database.</p> <p>The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.</p>	<input type="checkbox"/>	<input type="checkbox"/>

5 2	SRT-1151	Open the TAM Library Management dialog. Add a TAM library with two TAMs. Save the configuration. Delete one of the TAMs. Review the <code>FDOT_OWN.CVS_MESSAGE</code> table in the database.	When a TAM Library Message is deleted, it is removed from the running system but remain in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
5 3	SRT-1152	From the TAM Library Management dialog, delete the library folder created in the previous step. Review the <code>FDOT_OWN.CVS_MESSAGE_LIBRARY</code> table in the database.	When a TAM Library is deleted, it is removed from the running system but remains in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
5 4	SRT-1153	From the SAA Equipment Group Configuration dialog. Add and save an equipment group. Delete the equipment group and save. Review the <code>dbo.SAA_EQUIPMENT_GROUP</code> table in the database.	When an SAA Equipment Group is deleted, it is removed from the running system but remain in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
5 5	SRT-1154	From the Device Alarm Group Configuration dialog. Add and save a device alarm group. Delete the device alarm group and save. Review the <code>FDOT_OWN.IDS_DEVICE_ALARM_CONFIG</code> table in the database.	When an IDS Device Alarm Group is deleted, it is removed from the running system but remain in the database. The <code>CEASED_USE</code> and <code>CEASED_DATE</code> columns for the entry are set.	<input type="checkbox"/>	<input type="checkbox"/>
5 6	SRT-1155	Open the Reporting dialog. Select the RISC chronology report. Retrieve the ceased use RISC contract zones. Select a ceased use zone and run the RISC chronology report.	The software allows the user to retrieve the list of ceased use RISC contract zones and use the ceased items as parameters when running reports.	<input type="checkbox"/>	<input type="checkbox"/>
5 7	SRT-1156	From the reporting dialog, Select the RWIS Visibility Report. Retrieve the ceased use RWIS stations. Select a ceased use station and run the RWIS Visibility Report.	The software allows the user to retrieve the list of ceased use RWIS stations and use the ceased items as	<input type="checkbox"/>	<input type="checkbox"/>

			parameters when running reports.		
5 8	SRT-1157	From the Reporting dialog, select the Segment Average Travel Time Line Graph report. Retrieve the ceased use TVT segments. Select a ceased use segment and run the Segment Average Travel Time Line Graph report.	The software allows the user to retrieve the list of ceased use travel time links and use the ceased items as parameters when running reports.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
FDOT Witness	
SwRI Witness	

17. IC-15: SG-3232 Associating FHP and TS Alerts to Already Created Events

17.1 Objectives

The objective of this integration case is to test the requirements associated with organizing the list of events nearest an alarm in a grid instead of a drop down.

17.2 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.

Requirement Number	Requirement Text
SRT-1004	When viewing the nearby events for an IDS alert, the system will display a list of the closest events to the location of the alert as a grid.
SRT-1005	The grid will sort the events in the list by the shortest distance between the alarm and event by default.
SRT-1006	The grid will include columns for the event id, distance from the event, roadway, direction, and event type.
SRT-1007	If the data for a column is not available, the grid will not display a value for the column.
SRT-1008	The grid will allow the user to sort and filter on each column.

17.3 Test Approach

These tests will show that the software will display the list of events near an alarm using a sortable, filterable grid.

17.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CNA
- EM
- IDS

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- The Alert Simulator should be simulating all IDS drivers.
- At least one open event with no location.
- Delete all user preferences for the user to be used during testing by running the following query against the database. If any rows are removed, SAA should be restarted prior to the test.

```
DELETE FROM dbo.SAA_METADATA_PERMISSION WHERE USER_ID = (SELECT USER_ID
FROM dbo.CT_USER WHERE USER_NAME = '<user name>');
```

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1004 SRT-1005 SRT-1006	Use the Alert Simulator to simulate an FHP alert. Find the alert on the map. Create two new events near the alert at different EM locations. Open the Event List dialog. Identify the newly created FHP alert in the list and open the alert details for the alert. Observe the list of nearby events.	When viewing the nearby events for an IDS alert, the system displays a list of the closest events to the location of the alert as a grid. The grid sorts the events in the list by the shortest distance between the alarm and event by default. The grid includes columns for the event id, distance from the event, roadway, direction, and event type.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1008	Change the sorting of the grid to sort by each of the event ID, distance, roadway, direction, and event type columns. Filter the events displayed in the grid by the values in each of the event ID, distance, roadway, direction, and event type columns.	The grid allows the user to sort and filter on each column.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1004 SRT-1005 SRT-1006	Select the alert resolution option to dismiss the alarm as already detected and click Next.	When viewing the nearby events for an IDS alert, the system displays a list of the closest events to the location of the alert as a grid.	<input type="checkbox"/>	<input type="checkbox"/>

		Observe the list of nearby events.	The grid sorts the events in the list by the shortest distance between the alarm and event by default. The grid includes columns for the event id, distance from the event, roadway, direction, and event type.		
4	SRT-1008	Change the sorting of the grid to sort by each of the event ID, distance, roadway, direction, and event type columns. Filter the events displayed in the grid by the values in each of the event ID, distance, roadway, direction, and event type columns.	The grid allows the user to sort and filter on each column.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1007	Uncheck the option to "Filter event list above by distance from alarm". Observe the column values for an active event with no location.	If the data for a column is not available, the grid does not display a value for the column. No value is displayed for any location related columns for events with no location.	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-1004 SRT-1005 SRT-1006	Click Back to return to the main alarm details screen. Select the alert resolution option to associate the alarm to an existing event and click Next. Observe the list of nearby events.	When viewing the nearby events for an IDS alert, the system displays a list of the closest events to the location of the alert as a grid. The grid sorts the events in the list by the shortest distance between the alarm and event by default. The grid includes columns for the event id, distance from the event, roadway, direction, and event type.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1008	Change the sorting of the grid to sort by each of the event ID, distance, roadway, direction, and event type columns. Filter the events displayed in the grid by the values in each of the event ID, distance,	The grid allows the user to sort and filter on each column.	<input type="checkbox"/>	<input type="checkbox"/>

		roadway, direction, and event type columns.			
8	SRT-1007	Uncheck the option to "Filter event list above by distance from alarm". Observe the column values for an active event with no location.	If the data for a column is not available, the grid does not display a value for the column. No value is displayed for any location related columns for events with no location.	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1004 SRT-1005 SRT-1006	Click Back to return to the main alarm details screen. Select the alert resolution option to set the responder arrival time and click Next. Observe the list of nearby events.	When viewing the nearby events for an IDS alert, the system displays a list of the closest events to the location of the alert as a grid. The grid sorts the events in the list by the shortest distance between the alarm and event by default. The grid includes columns for the event id, distance from the event, roadway, direction, and event type.	<input type="checkbox"/>	<input type="checkbox"/>
10	SRT-1008	Change the sorting of the grid to sort by each of the event ID, distance, roadway, direction, and event type columns. Filter the events displayed in the grid by the values in each of the event ID, distance, roadway, direction, and event type columns.	The grid allows the user to sort and filter on each column.	<input type="checkbox"/>	<input type="checkbox"/>
11	SRT-1007	Uncheck the option to "Filter event list above by distance from alarm". Observe the column values for an active event with no location.	If the data for a column is not available, the grid does not display a value for the column. No value is displayed for any location related columns for events with no location.	<input type="checkbox"/>	<input type="checkbox"/>
12	SRT-1004 SRT-1005 SRT-1006	Click Back to return to the main alarm details screen. Select the alert resolution option to create a secondary event and click Next. Observe the list of nearby events.	When viewing the nearby events for an IDS alert, the system displays a list of the closest events to the location of the alert as a grid. The grid sorts the events in the list by the shortest	<input type="checkbox"/>	<input type="checkbox"/>

			distance between the alarm and event by default. The grid includes columns for the event id, distance from the event, roadway, direction, and event type.		
13	SRT-1008	Change the sorting of the grid to sort by each of the event ID, distance, roadway, direction, and event type columns. Filter the events displayed in the grid by the values in each of the event ID, distance, roadway, direction, and event type columns.	The grid allows the user to sort and filter on each column.	<input type="checkbox"/>	<input type="checkbox"/>
14	SRT-1007	Uncheck the option to "Filter event list above by distance from alarm". Observe the column values for an active event with no location.	If the data for a column is not available, the grid does not display a value for the column. No value is displayed for any location related columns for events with no location.		

Test End Date/Time	
FDOT Witness	
SwRI Witness	

18. IC-16: SG-6463 Status Log Level Monitor

18.1 Objectives

The objective of this integration case is to test the requirements associated with adding monitoring to send alerts when a subsystem has been left in the Detail log level for too long.

18.2 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.

Requirement Number	Requirement Text
SRT-1019	The software will have a configuration file setting for a list of emails to email a notification indicating which processes are currently running in Detail log mode.
SRT-1020	The software will have a configuration file setting for the time at which the system will check for processes in detail mode.
SRT-1021	At the configured time, the software will send an email of the current processes logging in detail mode.
SRT-1022	If there are no processes in detail mode or no emails are specified in the configuration file, no email notification will be sent.
SRT-1023	If the software sends an email, the email will contain the amount of time each process has remaining in detail mode.
SRT-1024	When changing the log level of a process, the software will allow the user to specify a time interval, in minutes, for how long to maintain the chosen log level.
SRT-1025	At the end of the specified interval, the software will automatically transition the process to log using the log mode that was specified in the config file at the time the process was started.

18.3 Test Approach

The test will accomplish validating the ability to submit a crash report for Operator Map crashes.

18.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- Notify Manager
- Executive Handler Server

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- A valid SMTP server in the configuration file.
- The initial log level for Notify Manager in the config file is set to "sInfo".

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1019 SRT-1020	Open the Config Editor. Review the config file section "detailNotificationSettings" for Notify Manager. Set the notification email time to 15 minutes from the current time. Update the list of emails to include the tester's email address, at a minimum. If any settings are changed, restart Notify Manager.	The software has a configuration file setting for a list of emails to email a notification indicating which processes are currently running in Detail log mode. The software has a configuration file setting for the time the at which the system will check for processes in detail mode.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1024	Open Executive Handler Viewer and connect to the local server. Verify no processes are running in detail log mode. Attempt to change the log level of Notify Manager to detail mode. Set the duration to 30 minutes and set the log level.	When changing the log level of a process, the software allows the user to specify a time interval, in minutes, for how long to maintain the chosen log level.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1021 SRT-1023	Wait 15 minutes. Check the tester's email.	At the configured time, the software sends a notification of the current processes logging in detail mode. The notification email has the amount of time	<input type="checkbox"/>	<input type="checkbox"/>

			each process has remaining in detail mode.		
4	SRT-1025	Wait an additional 15 minutes. Review the current log level of Notify Manager in Executive Handler Viewer. Review the emails that were sent by Notify Manager to the list of configured email addresses.	At the end of the specified interval, the software automatically transitions the process to log using the log mode that was specified in the config file at the time the process was started. Notify Manager will be logging in slInfo mode.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1022	Change the configured email time to 20 minutes from the current time, restart Notify Manager, and wait 20 minutes. Review the emails that were sent by Notify Manager to the list of configured email addresses.	Because there are no processes in detail mode, no email notification is sent.	<input type="checkbox"/>	<input type="checkbox"/>
	SRT-1022	From the Config Editor, remove the list of configured email recipients and change the configured email time to 15 minutes from the current time. Restart Notify Manager. Using Executive Handler Viewer, set Notify Manager to detail logging mode for 20 minutes. Wait 20 minutes. Review the emails that were sent by Notify Manager to the list of configured email addresses.	If there are no emails are specified in the configuration file, no email notification is sent.		

Test End Date/Time	
FDOT Witness	
SwRI Witness	

19. IC-17: SG-6312 Add Device and Link Geographic Filtering into C2C Subscriber

19.1 Objectives

The objective of this enhancement is to allow users to filter the Center to Center (C2C) data that is retrieved and cached by the Operator Map.

19.2 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.

Requirement Number	Requirement Text
SRT-1015	The software will allow a user with permission to configure which C2C items should be available in the map.
SRT-1016	The software will allow users to whitelist specific C2C items to be available in the map.
SRT-1017	The software will allow users to filter C2C items by type, roadway, or direction when selecting items to whitelist.
SRT-1018	The whitelist of allowed C2C items will apply to all users.

19.3 Test Approach

These tests will demonstrate the functionality of the new C2C data whitelist feature.

19.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- C2C Subscriber

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- A remote SunGuide system publishing the following data types, with at least one of each data type present, to C2C:
 - AVL/RR vehicle status with latitude/longitude
 - CCTV
 - DMS

- HAR
- RWIS
- TSS traffic conditions/network data
- The local SunGuide system should be configured to receive all C2C data types from the remote system above.
- No C2C data should be whitelisted initially.
- An administrator account that has permission to configure the C2C whitelist data.
- A non-administrator account that does not have permission to configure the C2C whitelist data but does have permission to receive the C2C whitelist data.
- For all user accounts used for testing, the icon configuration preferences should be to display all C2C icon types from all connected centers.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1015 SRT-1016	From the local system, log in to the Operator Map as the administrator account. Open the C2C Data Whitelist configuration dialog. Review the list of available data, the available data fields, and the currently whitelisted data.	The software allows a user with permission to configure which C2C items should be available in the map. The software allows users to whitelist specific C2C items to be available in the map.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1017	From the C2C Data Whitelist dialog, use the grid column header for device type to filter the list of available items by their data type.	The software allows users to filter C2C items by type when selecting items to whitelist.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1017	From the C2C Data Whitelist dialog, use the grid column header for roadway to filter the list of available items by their roadway.	The software allows users to filter C2C items by roadway when selecting items to whitelist.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-1017	From the C2C Data Whitelist dialog, use the grid column header for direction to	The software allows users to filter C2C items by direction	<input type="checkbox"/>	<input type="checkbox"/>

		filter the list of available items by their direction.	when selecting items to whitelist.		
5	SRT-1018	Log into a second Operator Map, for the same server, using a non-administrator account. From both maps, open the C2C AVL/RR Vehicle Status, C2C Camera Status, C2C DMS Status, C2C HAR Status, C2C RWIS Status, and C2C Traffic Condition Status dialogs and review the list of available data in each dialog. Review the C2C icons that are displayed on the map.	The whitelist of allowed C2C items is applied to all users. No AVL/RR vehicles, C2C cameras, DMS, HARs, RWIS, or traffic conditions are displayed in the dialogs or on the map.	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-1018	From the administrator map, open the C2C Data Whitelist dialog and whitelist one AVL/RR vehicle, camera, DMS, HAR, RWIS, and traffic condition and save the changes. From both maps, open the C2C AVL/RR Vehicle Status, C2C Camera Status, C2C DMS Status, C2C HAR Status, C2C RWIS Status, and C2C Traffic Condition Status dialogs and review the list of available data in each dialog. Use the Find on Map feature in each window to find the icon displayed on the map. Note the location of each icon.	The whitelist of allowed C2C items is applied to all users. Only the whitelisted AVL/RR vehicle, C2C camera, DMS, HAR, RWIS, and traffic condition are displayed in the dialogs or on the map.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1018	From the administrator map, open the C2C Data Whitelist dialog and remove the one AVL/RR vehicle, camera, DMS, HAR, RWIS, and traffic condition from the whitelist and save the changes. From both maps, open the C2C AVL/RR Vehicle Status, C2C Camera Status, C2C DMS Status, C2C HAR Status, C2C RWIS Status, and C2C Traffic Condition Status dialogs and review the list of available data in each dialog. Review the previous location of the icon on the map.	The whitelist of allowed C2C items is applied to all users. No AVL/RR vehicles, C2C cameras, DMS, HARs, RWIS, or traffic conditions are displayed in the dialogs or on the map.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
FDOT Witness	
SwRI Witness	

20. IC-18: SG-5668 WWD Detection on Mainlines using MVDS

20.1 Objectives

The objective of this integration case is to test the requirements associated with detecting wrong way drivers using mainline traffic detectors.

20.2 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.

Requirement Number	Requirement Text
SRT-1030	For TSS detectors capable of reporting directional bins, the software will allow a user to set the detector to be used as a wrong way driving vehicle alert device.
SRT-1031	The software will use the TSS roadway geometry to identify consecutive WWD TSS detectors reporting wrong way vehicles on the same roadway and geometry.
SRT-1032	The software will have a configuration option for the minimum number of consecutive WWD TSS detectors that are needed to trigger to generate a vehicle alert for wrong way.
SRT-1033	The minimum number of consecutive detectors will be at least 1.
SRT-1034	When an alert is generated for a WWD TSS detector, the cameras associated with the last detector to detect the wrong way vehicle will be shown to the user.
SRT-1035	When an alert is generated, the icons for all consecutive links from WWD TSS detectors used to create the alert will flash to indicate to the user where the alert occurred.
SRT-1036	The software will allow a user to put a WWD TSS detector into maintenance mode to suppress alerts.
SRT-1037	If a WWD TSS detector is in maintenance mode, the device will not be counted in the consecutive detectors needed to create a vehicle alert.
SRT-1038	The software will display the current status of the directional flag of the detector, if available.

20.3 Test Approach

The test will accomplish validating the ability to submit a crash report for Operator Map crashes.

20.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus

- SAA
- CCTV
- CNA
- EM
- IDS
 - Vehicle Alert Detection Driver
- TSS
 - RTMS Driver

Configured Devices

- 5 simulated Wavetronix HD detectors
 - Each detector should have at least one link associated to it
 - The links should be included in the roadway geometry as consecutive links
 - The detectors should have an Active op status.
- 10 cameras with associated video streams

4.3 Other Prerequisite Conditions

- The Vehicle Alert Detection Driver should have the following settings in the "TSS" subsection of the config file:
 - "linkDetectionsRequired" should be 3.
 - "timeBetweenDetections" should be 90.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1032	Open the Config Editor. Review the available settings for the TSS protocol subsection of the Vehicle Alert Detection Driver.	The software has a configuration option for the minimum number of consecutive WWD TSS detectors that are needed to trigger to generate a vehicle alert for wrong way.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1032 SRT-1033	Attempt to set the "linkDetectionsRequired" value to 0.	The software has a configuration option for the minimum number of consecutive WWD TSS	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Set the "linkDetectionsRequired" value to 3. Save the config file.</p> <p>If any changes were made to the config file, restart the associated process(es).</p>	<p>detectors that are needed to trigger to generate a vehicle alert for wrong way.</p> <p>The minimum number of consecutive detectors is at least 1.</p>		
3	SRT-1038	<p>Open the TSS Status dialog.</p> <p>Observe the list of available columns and the value for the "Dir. Bin Enabled?" column for the three simulated detectors.</p>	<p>The software displays the current status of the directional flag of the detector, if available.</p>	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-1030	<p>Open the Vehicle Alert Device Configuration dialog.</p> <p>For each of the five simulated TSS detectors, create a new vehicle alert device using the "TSS" protocol associated to the respective detector.</p> <p>Associate two cameras to each vehicle alert device.</p> <p>Save the configuration changes.</p>	<p>For TSS detectors capable of reporting directional bins, the software allows a user to set the detector to be used as a wrong way driving vehicle alert device.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1031 SRT-1034	<p>Open the Vehicle Alert Device Status dialog.</p> <p>Put the newly created vehicle alert devices in an "Active" op status.</p> <p>From the simulator of the most downstream TSS detector, report a wrong way driver.</p> <p>Wait one minute.</p> <p>From the simulator of the next upstream TSS detector, report a wrong way driver.</p> <p>Wait one minute.</p> <p>From the next upstream TSS detector, report a wrong way driver.</p> <p>Observe the alert shown in Vehicle Alert dialog.</p>	<p>The software uses the TSS roadway geometry to identify consecutive WWD TSS detectors reporting wrong way vehicles on the same roadway and geometry.</p> <p>When an alert is generated for a WWD TSS detector, the cameras associated with the last detector to detect the wrong way vehicle are shown to the user.</p>	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-1035	<p>From the Vehicle Alert dialog, use the Find On Map button to find the alert on the map.</p> <p>Observe the status of the map icons.</p>	<p>When an alert is generated, the icons for all consecutive links from WWD TSS detectors used to create the alert will</p>	<input type="checkbox"/>	<input type="checkbox"/>

			flash to indicate to the user where the alert occurred.		
7	SRT-1031 SRT-1034	<p>Resolve the vehicle alert.</p> <p>Wait until at least five minutes have elapsed since the last TSS detector simulated a wrong way driver.</p> <p>From the simulator of the second most downstream TSS detector, report a wrong way driver.</p> <p>Wait one minute.</p> <p>From the simulator of the most upstream TSS detector, report a wrong way driver.</p> <p>Wait one minute.</p> <p>From the simulator of the middle TSS detector, report a wrong way driver.</p> <p>Observe the Vehicle Alert dialog.</p> <p>Wait one minute.</p> <p>From the simulator of the second most upstream TSS detector, report a wrong way driver.</p> <p>Wait one minute.</p> <p>From the simulator of the most upstream TSS detector, report a wrong way driver.</p> <p>Observe the alert shown in Vehicle Alert dialog.</p>	<p>The software uses the TSS roadway geometry to identify consecutive WWD TSS detectors reporting wrong way vehicles on the same roadway and geometry.</p> <p>When an alert is generated for a WWD TSS detector, the cameras associated with the last detector to detect the wrong way vehicle are shown to the user.</p>	<input type="checkbox"/>	<input type="checkbox"/>
8	SRT-1031 SRT-1034 SRT-1036 SRT-1037	<p>Resolve the vehicle alert.</p> <p>Wait until at least five minutes have elapsed since the last TSS detector simulated a wrong way driver.</p> <p>From the Vehicle Alert Device Status dialog, place the middle vehicle alert device in maintenance mode.</p> <p>From the simulator of the most downstream TSS detector, report a wrong way driver.</p> <p>Wait one minute.</p>	<p>The software uses the TSS roadway geometry to identify consecutive WWD TSS detectors reporting wrong way vehicles on the same roadway and geometry.</p> <p>When an alert is generated for a WWD TSS detector, the cameras associated with the last detector to detect the wrong way vehicle are shown to the user.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>From the simulator of the next upstream TSS detector, report a wrong way driver. Wait one minute. From the simulator of the next upstream TSS detector, report a wrong way driver. Observe the alert shown in Vehicle Alert dialog. Wait one minute. From the simulator of the second most upstream TSS detector, report a wrong way driver. Observe the Vehicle Alert dialog and wait for an alert.</p>	<p>The software allows a user to put a WWD TSS detector into maintenance mode to suppress alerts. If a WWD TSS detector is in maintenance mode, the device is not counted in the consecutive detectors needed to create a vehicle alert.</p>		
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

21. IC-19: SG-6355 Security Improvements - Inter-Process Communication (Encryption)

21.1 Objectives

The objective of this integration case is to test the requirements associated with encrypting inter-process communication.

21.2 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.

Requirement Number	Requirement Text
SRT-1093	The software will support a configuration option to enable encryption of messages in transit between processes.
SRT-1094	If encryption is enabled, the software will encrypt transmissions between system processes.
SRT-1095	The system will support TLSv1.3 as an encryption protocol.

21.3 Test Approach

The tests will show that our software encrypts all inter-process communication.

21.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- Executive Handler Service
- Executive Handler Viewer
- Status Log Service
- Databus
- SAA
- C2C Collector
- C2C Command Receiver
- C2C Extractor
- C2C Provider
- C2C Publisher
- DMS
 - DMS Driver
- IDS
 - IDS FHP Incident Driver
- RMS
 - RMS NTCIP Driver
- TSS

- TSS BiTrans 238 Driver
- VWS
 - VWS Activu Driver

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- Wireshark is installed on the test server.
- TLSv1.3 is an enabled protocol on all machines being used for the test. This can be verified by opening the Internet Properties window, changing to the "Advanced" tab, scrolling to the "Security" section and seeing the check box for "Use TLS 1.3" checked.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1093	Open the Config Editor. Review and observe the encryption settings. If encryption is enabled, disable it and save the changes to the config file. Stop all processes, including Executive Handler and Status Log Server services. Start Wireshark and capture all traffic from all interfaces. Start all processes. Open a Map and log in. Observe the traffic being sent between the following processes from Wireshark:	The software supports a configuration option to enable encryption of messages in transit between processes. When the configuration option to enable encryption is not enabled, the software does not encrypt any traffic between processes.	<input type="checkbox"/>	<input type="checkbox"/>

		<ul style="list-style-type: none"> • EH Viewer → EH Server Service • EH Viewer → Status Logger • EH Server Service → Status Logger • C2C Collector → Status Logger • C2C Command Receiver → Status Logger • C2C Extractor → Status Logger • C2C Provider → Status Logger • C2C Publisher → Status Logger • C2C Publisher → EH Server • C2C Publisher → Databus • Databus → DMS • DMS → Databus • DMS → EH Server • DMS → Status Logger • DMS → DMS Driver • DMS Driver → Status Logger • DMS Driver → EH Server • Databus → IDS • IDS → Databus • IDS → EH Server • IDS → Status Logger • IDS → FHP Incident Driver • FHP Incident Driver → Status Logger • FHP Incident Driver → EH Server • RMS → Databus • RMS → EH Server • RMS → Status Logger • RMS → RMS NTCIP Driver • TSS → BiTrans238 Driver • BiTrans238 Driver → EH Server 			
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		<ul style="list-style-type: none"> • BiTrans238 Driver → Status Logger • VWS → Activu Driver • Activu Driver → EH Server • Activu Driver → Status Logger • Operator Map → Databus • Operator Map → Status Logger 			
		Stop the Wireshark capture.			
2	SRT-1093 SRT-1094 SRT-1095	<p>Open the Config Editor. Review and observe the encryption settings.</p> <p>Enable encryption and set the certificate thumbprint, the certificate file path, the certificate password, and the TLS version to "TLSv1.3".</p> <p>Stop all processes, including Executive Handler and Status Log Server services.</p> <p>Start Wireshark and capture all traffic from all interfaces.</p> <p>Start all processes.</p> <p>Observe the traffic being sent between the following processes from Wireshark:</p> <ul style="list-style-type: none"> • EH Viewer → EH Server Service • EH Server Service → Status Logger • C2C Collector → Status Logger • C2C Command Receiver → Status Logger • C2C Extractor → Status Logger 	<p>The software supports a configuration option to enable encryption of messages in transit between processes.</p> <p>When encryption is enabled, the software encrypts transmissions between system processes. The system supports TLSv1.3 as an encryption protocol.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<ul style="list-style-type: none"> • C2C Provider → Status Logger • C2C Publisher → Status Logger • C2C Publisher → EH Server • C2C Publisher → Databus • Databus → DMS • DMS → Databus • DMS → EH Server • DMS → Status Logger • DMS → DMS Driver • DMS Driver → Status Logger • DMS Driver → EH Server • Databus → IDS • IDS → Databus • IDS → EH Server • IDS → Status Logger • IDS → FHP Incident Driver • FHP Incident Driver → Status Logger • FHP Incident Driver → EH Server • RMS → Databus • RMS → EH Server • RMS → Status Logger • RMS → RMS NTCIP Driver • TSS → BiTrans238 Driver • BiTrans238 Driver → EH Server • BiTrans238 Driver → Status Logger • VWS → Activu Driver • Activu Driver → EH Server • Activu Driver → Status Logger • Operator Map → Databus • Operator Map → Status Logger <p>Stop the Wireshark capture.</p>			
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

22. IC-20: SG-6367 LCS module for SunGuide

22.1 Objectives

The objective of this integration case is to test the requirements associated with adding the LCS subsystem to SunGuide.

22.2 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.

Requirement Number	Requirement Text
SRT-1158	LCS shall support communication with devices using the National Transportation Communications for ITS Protocol (NTCIP) 1203 Version 02.35
SRT-1159	LCS shall allow each LCS controller to be queried for current status.
SRT-1160	LCS status polls shall include the current status of control mode: Central, Local, or Simulation (if supported).
SRT-1161	LCS status polls shall include the current display of each LCS head.
SRT-1162	LCS status polls shall include the current brightness mode (if supported): Automatic or Manual.
SRT-1163	LCS status polls shall include the current brightness level (if supported): Day or Night.
SRT-1164	LCS shall allow the brightness level to be set for each LCS set (if supported) to Auto, Day, or Night.
SRT-1165	LCS shall allow the display of LCS heads to be set.
SRT-1166	LCS shall allow display of an LCS head to be set to one of the graphics uploaded to the database.
SRT-1167	LCS shall process the display setting of an LCS set as an atomic transaction.
SRT-1168	If more than one LCS head in a set fails to display the requested signal, an error will be indicated with the failed LCS heads specified.
SRT-1169	If one or less LCS heads in a set fails to display the requested signal, LCS shall return a successful response.
SRT-1170	The software will log individual LCS head failures when processing a display request.
SRT-1171	LCS shall allow an LCS set to be queried for the current display.
SRT-1172	LCS shall allow the control mode for a set of LCS heads to be set to Central or Simulation (if supported).
SRT-1173	LCS shall allow the operational status of a set of LCS heads to be set to either Active or Out of Service.
SRT-1174	LCS shall allow users to add, delete and modify an LCS.
SRT-1175	LCS shall allow users to add, modify, and delete the heads of an associated LCS set.
SRT-1176	LCS shall verify permission for configuring LCS sets and heads.
SRT-1177	LCS shall verify permission for sending a display command for an LCS set.

SRT-1178	LCS shall verify permission for requesting status of LCS sets.
SRT-1179	LCS shall verify permission for setting the brightness level of LCS sets.
SRT-1180	LCS shall verify permission for setting the control mode of LCS sets.
SRT-1181	LCS shall verify permission for changing the operational status of LCS sets.
SRT-1182	LCS shall poll LCS sets for their status on a configurable frequency.
SRT-1183	LCS shall report the current status of an LCS set as Active, Error, Failed, or Out of Service.
SRT-1184	LCS shall report an LCS set as Active if communication to the LCS set is established and a maximum of only one head is in error.
SRT-1185	LCS shall report an LCS set as Error if either communication to the LCS set cannot be established or more than one LCS heads are offline.
SRT-1186	LCS shall report an LCS set as Failed if the LCS set has been in an Error status for a configurable number of communication attempts.
SRT-1187	LCS shall report an LCS set as Out of Service if the LCS set has been manually placed in Out of Service status.
SRT-1188	LCS shall not poll LCS sets which are Out of Service.
SRT-1189	LCS shall use the configured slow poll multiplier to determine the length of time to poll an LCS when it has entered failed status.
SRT-1190	When an LCS is in a Failed states and completes a successful poll, the system will transition the LCS to Active status.
SRT-1191	The software will use the device linking file to select which LCS should be included in the response plan.
SRT-1192	The config file will contain a default search distance for three upstream LCS based on the severity of the event including minor, moderate, severe, and noBlockage.
SRT-1193	The config file will contain a default initial search distance for one downstream LCS based on the severity of the event including minor, moderate, severe, and noBlockage.
SRT-1194	When searching for upstream LCS to use in the response plan, the software will use the search distance defined in the config file for the severity of the event.
SRT-1195	When searching for downstream LCS to use in the response plan, the software will use the initial search distance defined in the config file for the severity of the event.
SRT-1196	The software will have a configuration value to indicate if LCS should be suggested as part of any suggested response plan.
SRT-1197	When the value of the configuration is set to false, the software will not suggest LCS as part of a suggested response plan.
SRT-1198	If EM is configured to suggest LCS as part of a response plan, EM will automatically suggest LCS as part of a response plan.
SRT-1199	The software will only suggest LCS that are in an Active state.
SRT-1200	If a blockage only has right shoulder blockage, the system will select the first upstream LCS device, if available in the configured distance.

SRT-1201	The software will suggest a red X on the shoulder and green arrows for the rest of the lanes.
SRT-1202	If the blockage contains travel lane, the software will select up to three upstream LCS and 1 downstream LCS, if available in the configured distance.
SRT-1203	The downstream LCS device will suggest all lanes are open.
SRT-1204	The first upstream LCS will suggest a red X on the closed lanes.
SRT-1205	The second and third upstream LCS will suggest a yellow X on the closed lane.
SRT-1206	If the blockage is a full closure, the second LCS will indicate all lanes are blocked but the rightmost LCS should indicate vehicles should exit immediately.
SRT-1207	If the blockage is a full closure, the third LCS will indicate all lanes are blocked but the second to rightmost LCS should indicate open and the rightmost LCS should indicate vehicles should exit immediately.
SRT-1208	When a response plan with an LCS item is activated, the software will send a request to put the LCS message in the queue for the LCS.
SRT-1209	When the response plan is terminated, the software will send a request to remove the message from the LCS.
SRT-1210	The software will allow an operator to add LCS to a predefined response plan.
SRT-1211	The software will allow an operator to set the signage for an LCS within a predefined plan.
SRT-1212	The software will archive the op status of LCS heads associated to an LCS set.
SRT-1213	The software will archive messages displayed by LCS set.

22.3 Test Approach

The test will validate the addition of the LCS system to SunGuide including the devices, and response plan actions.

22.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CNA
- Data Archive
- EM
- LCS
 - LCS NTCIP Driver
- MAS

Configured Devices

- Simulated LCS devices according to the below:
 - Each LCS should have four heads configured. Three heads are configured for each travel lane, and one head is configured for and marked as over the shoulder.
 - Each LCS set is Active and has a blank message displaying on the LCS.
 - Four LCS should be configured on the same roadway and direction, with the following spacing and naming:
 - An LCS set named "No Blockage - Downstream" should be the furthest downstream.
 - An LCS set named "No Blockage - First Upstream" should be placed approximately 1 mile upstream from the previous LCS set.
 - An LCS set named "No Blockage - Second Upstream" should be placed approximately 2 miles upstream from the previous LCS set.
 - An LCS set named "No Blockage - Third Upstream" should be placed approximately 1 mile upstream from the previous LCS set.
 - Four LCS should be configured on the same roadway and direction, with the following spacing:
 - An LCS set named "Minor - Downstream" should be the furthest downstream.
 - An LCS set named "Minor - First Upstream" should be placed approximately 5 miles upstream from the previous LCS set.
 - An LCS set named "Minor - Second Upstream" should be placed approximately 2 miles upstream from the previous LCS set.
 - An LCS set named "Minor - Third Upstream" should be placed approximately 1 mile upstream from the previous LCS set.
 - Four LCS should be configured on the same roadway and direction, with the following spacing:
 - An LCS set named "Moderate - Downstream" should be the furthest downstream.
 - An LCS set named "Moderate - First Upstream" should be placed approximately 9 miles upstream from the previous LCS set.
 - An LCS set named "Moderate - Second Upstream" should be placed approximately 2 miles upstream from the previous LCS set.
 - An LCS set named "Moderate - Third Upstream" should be placed approximately 1 mile upstream from the previous LCS set.
 - Four LCS should be configured on the same roadway and direction, with the following spacing:
 - An LCS set named "Severe - Downstream" should be the furthest downstream.
 - An LCS set named "Severe - First Upstream" should be placed approximately 13 miles upstream from the previous LCS set.

- An LCS set named "Severe - Second Upstream" should be placed approximately 2 miles upstream from the previous LCS set.
- An LCS set named "Severe - Third Upstream" should be placed approximately 1 mile upstream from the previous LCS set.
- Two LCS should be configured on the same roadway and direction, with the following spacing:
 - An LCS set named "Too Far - Downstream" should be the furthest downstream.
 - An LCS set named "Too Far - Upstream" should be placed approximately 13 miles upstream from the previous LCS set.

4.3 Other Prerequisite Conditions

- LCS graphics for the following lane markers configured in the system:
 - Green Arrow
 - Yellow Arrow
 - Red X
 - Take Next Exit
 - Blank
- A non-administrator issue with all permissions to other subsystems and only the following permissions to LCS:
 - "Allows the user to receive LCS status updates"
 - "Allows the user to receive LCS data"
- Four events on the same roadway and direction as the LCS with the following criteria:
 - An event with no blockage located evenly between the "No Blockage - Downstream" and "No Blockage - First Upstream" LCS sets on the same roadway and direction as the LCS.
 - The event should have a lane map configured as Shoulder, Travel, Travel, Travel, Shoulder. Only the rightmost shoulder lane should be blocked
 - An event with a minor event severity located evenly between the "Minor - Downstream" and "Minor - First Upstream" LCS sets on the same roadway and direction as the LCS.
 - The event should have a lane map configured as Shoulder, Travel, Travel, Travel, Shoulder. Only the leftmost travel lane should be blocked.
 - An event with a moderate event severity located evenly between the "Moderate - Downstream" and "Moderate - First Upstream" LCS sets on the same roadway and direction as the LCS.
 - The event should have a lane map configured as Shoulder, Travel, Travel, Travel, Shoulder. The two rightmost travel lanes should be blocked.
 - An event with a severe event severity located evenly between the "Severe - Downstream" and "Severe - First Upstream" LCS sets on the same roadway and direction as the LCS.
 - The event should have a lane map configured as Shoulder, Travel, Travel, Travel, Shoulder. All travel lanes should be blocked.

- An event with a severe event severity located evenly between the "Too Far - Downstream" and "Too Far - Upstream" LCS sets on the same roadway and direction as the LCS.
- Under the EM config section of the config file, the following values should be configured:
 - Under suggestedResponsePlanConfiguration, lcs should be set to true.
 - The following search distances for the initialLcsProximityConfig:
 - noBlockage should be 1 mile
 - minor should be 3 miles
 - moderate should be 5 miles
 - severe should be 7 miles
 - The following search distances for the lcsProximityConfig:
 - noBlockage should be 3 miles
 - minor should be 5 miles
 - moderate should be 7 miles
 - severe should be 10 miles
- Under the LCS config section of the config file, the commTolerance should be set to 3.
- Under the LCS NTCIP Driver section of the config file, the slowPollMultiplier should be set to 3.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1192 SRT-1193 SRT-1210	Open the Config Editor. Under the <i>suggestedResponsePlanConfiguration</i> section under <i>em</i> , review the entry for <i>lcs</i> . Review the available configuration values under the <i>lcsProximityConfig</i> section under <i>em</i> . Review the available configuration values under the <i>lcsInitialProximityConfig</i> section under <i>em</i> . If the configuration was changed, restart EM.	The software has a configuration value to indicate if LCS should be suggested as part of any suggested response plan. The config file contains a default search distance for three upstream LCS based on the severity of the event including minor, moderate,	<input type="checkbox"/>	<input type="checkbox"/>

			severe, and noBlockage. The config file contains a default initial search distance for one downstream LCS based on the severity of the event including minor, moderate, severe, and noBlockage.		
2	SRT-1174	<p>Open and log into an Operator Map as an administrator user.</p> <p>Open the LCS Configuration dialog. Add a new LCS. Observe the list of available configuration fields, including the list of available protocols.</p> <p>Configure the new LCS with three heads, one of which should be for the right shoulder. Set the communication parameters for an LCS simulator and with a poll cycle of 30 seconds.</p> <p>Save the LCS configuration.</p>	LCS allows users to add an LCS. LCS polls LCS sets for their status on a configurable frequency.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1174	<p>Modify the name of the LCS configured in the previous step. Save the LCS configuration.</p>	LCS allows users to modify an LCS.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-1175	<p>Add a new head to the LCS configured in the previous steps. Save the LCS configuration.</p>	LCS allows users to add heads to an associated LCS set.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1175	<p>Modify the head added to the LCS configured in the previous step by changing the community name. Save the LCS configuration.</p>	LCS allows users to modify the heads of an associated LCS set.	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-1175	<p>Delete the head added to the LCS configured in the previous steps. Save the LCS configuration.</p>	LCS allows users to delete the heads of an associated LCS set.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1183	<p>Open the LCS Status dialog.</p> <p>Observe the op status of the newly added LCS.</p>	LCS reports the current status of an LCS set as Active, Error,	<input type="checkbox"/>	<input type="checkbox"/>

			Failed, or Out of Service.		
8	SRT-1160 SRT-1161 SRT-1162 SRT-1163 SRT-1173	<p>Set the op status of the LCS to Active.</p> <p>Wait for the initial poll to complete to the LCS and observe the value of the following LCS status fields:</p> <ul style="list-style-type: none"> • Op status • Control Mode • Display of each head • Brightness mode <p>Brightness level</p>	<p>LCS reports the current status of an LCS set as Active, Error, Failed, or Out of Service.</p> <p>LCS status polls include the current status of control mode: Central, Local, or Simulation (if supported).</p> <p>LCS status polls include the current display of each LCS head.</p> <p>LCS status polls include the current brightness mode (if supported): Automatic or Manual.</p> <p>LCS status polls include the current brightness level (if supported): Day or Night.</p>	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1182	<p>From the simulator, change the reported control mode, brightness mode, and brightness level for</p> <p>Wait 30 seconds. Observe the status details of the LCS.</p>	LCS polls LCS sets for their status on a configurable frequency.	<input type="checkbox"/>	<input type="checkbox"/>
10	SRT-1159 SRT-1171	<p>From the LCS Status dialog, refresh the status of the LCS.</p>	<p>LCS allows each LCS controller to be queried for current status.</p> <p>LCS allows an LCS set to be queried for the current display.</p>	<input type="checkbox"/>	<input type="checkbox"/>

11	SRT-1164	From the LCS Status dialog, change the brightness level of the LCS to Day. Change the brightness level of the LCS to Night. Change the brightness level of the LCS to Auto.	LCS allows the brightness level to be set for each LCS set (if supported) to Auto, Day, or Night.	<input type="checkbox"/>	<input type="checkbox"/>
12	SRT-1172	From the LCS Status dialog, change the control mode of the LCS to Simulation. Change the control mode of the LCS to Central.	LCS allows the control mode for a set of LCS heads to be set to Central or Simulation (if supported).	<input type="checkbox"/>	<input type="checkbox"/>
13	SRT-1184	From the simulator, disable communications for one head of the LCS. Wait for a poll to complete and observe the op status of the LCS.	LCS reports an LCS set as Active if communication to the LCS set is established and a maximum of only one head is in error.	<input type="checkbox"/>	<input type="checkbox"/>
14	SRT-1183 SRT-1185	From the simulator, disable communications for another head of the LCS. Wait for another poll to complete and observe the op status of the LCS.	LCS reports an LCS set as Error if either communication to the LCS set cannot be established or more than one LCS heads are offline. LCS reports the current status of an LCS set as Active, Error, Failed, or Out of Service	<input type="checkbox"/>	<input type="checkbox"/>
15	SRT-1183 SRT-1186	Wait for two more poll cycles to complete. Observe the op status of the LCS.	LCS reports an LCS set as Failed if the LCS set has been in an Error status for a configurable number of communication attempts. LCS reports the current status of	<input type="checkbox"/>	<input type="checkbox"/>

			an LCS set as Active, Error, Failed, or Out of Service		
16	SRT-1189	Note the time of the previous communication attempt. Wait 30 seconds for a poll cycle to complete. Wait approximately another 60 seconds for a poll cycle to complete. Observe the amount of time that has elapsed between the previous communication attempt and the most recent.	LCS uses the configured slow poll multiplier to determine the length of time to poll an LCS when it has entered failed status.	<input type="checkbox"/>	<input type="checkbox"/>
17	SRT-1184 SRT-1190	From the simulator, enable communications for one of the disabled heads of the LCS. Wait for a poll cycle to complete and observe the op status of the LCS. Note the time of the completed communication attempt. Wait for another poll cycle to complete. Observe the amount of time that has elapsed between the previous communication attempt and the most recent. Enable the communication for the last head from the simulator.	LCS reports an LCS set as Active if communication to the LCS set is established and a maximum of only one head is in error. LCS resumes polling Failed LCS sets when they are manually placed in Active status.	<input type="checkbox"/>	<input type="checkbox"/>
18	SRT-1165 SRT-1166	From the LCS Status dialog, add a message to the queue of the LCS. In the dialog to add an LCS message, observe the set of available graphics to be set for each head. Add the message to the queue and wait for the message to be displayed on the simulator. Observe the status of the LCS.	LCS allows the display of LCS heads to be set. LCS allows display of an LCS head to be set to one of the graphics uploaded to the database.	<input type="checkbox"/>	<input type="checkbox"/>
19	SRT-1167 SRT-1168 SRT-1170	From the simulator, disable communications for two heads. From the LCS Status dialog, select the message added to the LCS queue in the previous step. Modify the message by changing the graphic for each available head. Save the modified message. Observe the status of the LCS.	LCS processes the display setting of an LCS set as an atomic transaction. If more than one LCS head in a set fails to display the	<input type="checkbox"/>	<input type="checkbox"/>

			requested signal, an error is indicated with the failed LCS heads specified. The software logs individual LCS head failures when processing a display request. The queue state reports failed.		
20	SRT-1169 SRT-1170	From the simulator, enable communications to one of the disabled heads. From the LCS Status dialog, resend the top message to the LCS. Observe the status of the LCS.	If one or less LCS heads in a set fails to display the requested signal, LCS returns a successful response. The software logs individual LCS head failures when processing a display request. The queue state reports completed.	<input type="checkbox"/>	<input type="checkbox"/>
21	SRT-1169	From the simulator, enable communicationsto the remaining head. From the LCS Status dialog, remove the message from the queue for the LCS. Observe the status of the LCS.	If one or less LCS heads in a set fails to display the requested signal, LCS returns a successful response. The queue state reports completed.	<input type="checkbox"/>	<input type="checkbox"/>
22	SRT-1173 SRT-1187	From the LCS Status dialog, place the LCS out of service. Observe the op status of the LCS.	LCS reports an LCS set as Out of Service if the LCS set has been manually placed in Out of Service status. LCS allows the operational status	<input type="checkbox"/>	<input type="checkbox"/>

			of a set of LCS heads to be set to either Active or Out of Service.		
23	SRT-1188	Wait for at least 30 seconds. Observe the last communication attempt timestamp.	LCS does not poll LCS sets which are Out of Service.	<input type="checkbox"/>	<input type="checkbox"/>
24	SRT-1174	Open the LCS Configuration dialog. Delete the LCS configured in the previous steps.	LCS allows users to delete an LCS.	<input type="checkbox"/>	<input type="checkbox"/>
25	SRT-1210 SRT-1211	Open the Predefined Plan Configuration dialog. Add a new predefined plan. Add an LCS device to the new predefined plan. Select a lane status for each head value. Save the new predefined plan. Modify the LCS plan item that was just configured by changing the priority and the left travel lane and shoulder graphics. Save the modified predefined plan. Delete the LCS plan item from the predefined plan.	The software allows an operator to add LCS to a predefined response plan. The software allows an operator to set the signage for an LCS within a predefined plan.	<input type="checkbox"/>	<input type="checkbox"/>
26	SRT-1194 SRT-1195 SRT-1198 SRT-1200 SRT-1201	Open the Device Sequencing Editor dialog. Find the "No Blockage - Downstream" LCS set on the map. Change the display mode to display all upstream roadway links. Review the sequencing to the three upstream LCS. Exit the Device Sequencing Editor without making any changes. Open the Event Details for the event with no blockage. Suggest a response plan for the event. Review the suggested LCS and their suggested messages.	When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event. When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event. If EM is configured to suggest LCS as	<input type="checkbox"/>	<input type="checkbox"/>

			<p>part of a response plan, EM automatically suggests LCS as part of a response plan.</p> <p>If a blockage only has right shoulder blockage, the system selects the first upstream LCS device, if available in the configured distance.</p> <p>The software suggests a red X on the shoulder and green arrows for the rest of the lanes.</p>		
27	<p>SRT-1194 SRT-1195 SRT-1198 SRT-1202 SRT-1203 SRT-1204 SRT-1205</p>	<p>Open the Device Sequencing Editor dialog.</p> <p>Find the "Minor - Downstream" LCS set on the map. Change the display mode to display all upstream roadway links.</p> <p>Review the sequencing to the three upstream LCS.</p> <p>Exit the Device Sequencing Editor without making any changes.</p> <p>Open the Event Details for the event with minor severity. Suggest a response plan for the event.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event.</p> <p>If EM is configured to suggest LCS as part of a response plan, EM</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>automatically suggests LCS as part of a response plan.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second upstream LCS will suggest a yellow X on the closed lane.</p>		
28	<p>SRT-1194 SRT-1195 SRT-1198 SRT-1202 SRT-1203 SRT-1204 SRT-1205</p>	<p>Open the LCS Configuration dialog. Modify the location of "Minor - Second Upstream" and "Minor - Third Upstream" to be a mile closer to the event location.</p> <p>From the Response Plan dialog of the previous event suggest a new response plan.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software will use the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software will use the initial search distance defined in the config file for</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>

			<p>the severity of the event.</p> <p>If EM is configured to suggest LCS as part of a response plan, EM will automatically suggest LCS as part of a response plan. The "Minor - Downstream", "Minor - First Upstream", "Minor - Second Upstream", and "Minor - Third Upstream" LCS are included in the response plan.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second and third upstream LCS suggest a yellow X on the closed lane.</p>		
29	SRT-1194 SRT-1195 SRT-1198 SRT-1199	From the simulator for "Minor - Second Upstream", cause a communication failure to more than one head for the LCS.	When searching for upstream LCS to use in the response plan, the	<input type="checkbox"/>	<input type="checkbox"/>

	<p>SRT-1202 SRT-1203 SRT-1204 SRT-1205</p>	<p>Open the LCS Status dialog. Wait for the op status of the "Minor - Second Upstream" LCS to go to Error.</p> <p>From the Response Plan dialog of the previous event suggest a new response plan.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>software uses the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event.</p> <p>If EM is configured to suggest LCS as part of a response plan, EM automatically suggests LCS as part of a response plan.</p> <p>View the "Minor - Downstream", "Minor - First Upstream", and "Minor - Third Upstream" LCS to see if they are included as part of the response plan.</p> <p>The software only suggests LCS that are in an Active state.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the</p>		
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			<p>configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second and third upstream LCS suggest a yellow X on the closed lane.</p>		
30	<p>SRT-1194</p> <p>SRT-1195</p> <p>SRT-1198</p> <p>SRT-1199</p> <p>SRT-1202</p> <p>SRT-1203</p> <p>SRT-1204</p> <p>SRT-1205</p>	<p>From the LCS Status dialog, wait for the op status of the "Minor - Second Upstream" LCS to go to Failed.</p> <p>From the Response Plan dialog of the previous event suggest a new response plan.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event.</p> <p>If EM is configured to suggest LCS as part of a response plan, EM automatically suggests LCS as part of a response plan.</p> <p>The software only suggests LCS that</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>are in an Active state.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second and third upstream LCS suggests a yellow X on the closed lane.</p>		
31	<p>SRT-1194</p> <p>SRT-1195</p> <p>SRT-1198</p> <p>SRT-1199</p> <p>SRT-1202</p> <p>SRT-1203</p> <p>SRT-1204</p> <p>SRT-1205</p>	<p>From the LCS Status dialog, set the op status of the "Minor - Second Upstream" LCS to Out of Service.</p> <p>From the Response Plan dialog of the previous event suggest a new response plan.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>If EM is configured to suggest LCS as part of a response plan, EM automatically suggests LCS as part of a response plan.</p> <p>The software only suggests LCS that are in an Active state.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second and third upstream LCS suggest a yellow X on the closed lane.</p>		
32	<p>SRT-1194 SRT-1195 SRT-1198 SRT-1199 SRT-1202 SRT-1203 SRT-1204 SRT-1205 SRT-1208</p>	<p>From the simulator for "Minor - Second Upstream", enable communication to all heads for the LCS.</p> <p>From the LCS Status dialog, set the op status of the "Minor - Second Upstream" LCS to Active.</p> <p>From the Response Plan dialog of the previous event suggest a new response plan.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event.</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>

		<p>Accept the suggested LCS plan items. Activate the response plan. Review the queue for each LCS in the response plan.</p>	<p>When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event.</p> <p>If EM is configured to suggest LCS as part of a response plan, EM automatically suggests LCS as part of a response plan.</p> <p>The software only suggests LCS that are in an Active state.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second and third upstream LCS suggests a yellow X on the closed lane.</p>		
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			When a response plan with an LCS item is activated, the software sends a request to put the LCS message in the queue for the LCS.		
33	SRT-1209	From the Response Plan dialog, terminate the response plan. Review the queue for each LCS in the response plan.	When the response plan is terminated, the software sends a request to remove the message from the queue for the LCS.	<input type="checkbox"/>	<input type="checkbox"/>
34	SRT-1194 SRT-1195 SRT-1198 SRT-1202 SRT-1203 SRT-1204 SRT-1205	Open the Device Sequencing Editor dialog. Find the "Moderate - Downstream" LCS set on the map. Change the display mode to display all upstream roadway links. Review the sequencing to the three upstream LCS. Exit the Device Sequencing Editor without making any changes. Open the Event Details for the event with moderate severity. Suggest a response plan for the event. Review the suggested LCS and their suggested messages.	When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event. When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event. If EM is configured to suggest LCS as part of a response plan, EM automatically suggests LCS as	<input type="checkbox"/>	<input type="checkbox"/>

			<p>part of a response plan.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second and third upstream LCS suggest a yellow X on the closed lane.</p>		
35	<p>SRT-1194</p> <p>SRT-1195</p> <p>SRT-1198</p> <p>SRT-1202</p> <p>SRT-1203</p> <p>SRT-1204</p> <p>SRT-1205</p>	<p>Open the Device Sequencing Editor dialog.</p> <p>Find the "Severe - Downstream" LCS set on the map. Change the display mode to display all upstream roadway links.</p> <p>Review the sequencing to the three upstream LCS.</p> <p>Exit the Device Sequencing Editor without making any changes.</p> <p>Open the Event Details for the event with severe severity. Suggest a response plan for the event.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>If EM is configured to suggest LCS as part of a response plan, EM automatically suggests LCS as part of a response plan.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>The second and third upstream LCS suggest a yellow X on the closed lane.</p>		
36	<p>SRT-1194 SRT-1195 SRT-1198 SRT-1202 SRT-1203 SRT-1204 SRT-1205 SRT-1206 SRT-1207</p>	<p>Open the LCS Configuration dialog. Modify the location of "Severe - Second Upstream" and "Severe - Third Upstream" to be a mile closer to the severe event location.</p> <p>From the Response Plan dialog of the previous event suggest a new response plan.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software uses the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>initial search distance defined in the config file for the severity of the event.</p> <p>If EM is configured to suggest LCS as part of a response plan, EM automatically suggests LCS as part of a response plan.</p> <p>If the blockage contains travel lane, the software selects up to three upstream LCS and 1 downstream LCS, if available in the configured distance.</p> <p>The downstream LCS device suggests all lanes are open.</p> <p>The first upstream LCS suggests a red X on the closed lanes.</p> <p>If the blockage is a full closure, the second LCS indicates all lanes are blocked but the rightmost LCS should indicate vehicles should exit immediately.</p> <p>If the blockage is a full closure, the third LCS indicates all lanes are blocked but the</p>		
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			second to rightmost LCS should indicate open and the rightmost LCS should indicate vehicles should exit immediately.		
37	SRT-1194 SRT-1195 SRT-1198	<p>Open the Device Sequencing Editor dialog.</p> <p>Find the "Too Far - Downstream" LCS set on the map. Change the display mode to display all upstream roadway links.</p> <p>Review the sequencing to the upstream LCS.</p> <p>Exit the Device Sequencing Editor without making any changes.</p> <p>Open the Event Details for the event with severe severity located between the "Too Far" LCS. Suggest a response plan for the event.</p> <p>Review the suggested LCS and their suggested messages.</p>	<p>When searching for upstream LCS to use in the response plan, the software uses the search distance defined in the config file for the severity of the event.</p> <p>When searching for downstream LCS to use in the response plan, the software uses the initial search distance defined in the config file for the severity of the event.</p> <p>No LCS are suggested because the initial distance is too far.</p>	<input type="checkbox"/>	<input type="checkbox"/>
38	SRT-1196 SRT-1197	<p>Open the Config Editor. Under the suggestedResponsePlanConfiguration section under em, modify the value for lcs to be false.</p> <p>Restart EM.</p> <p>Create a new event one mile upstream and downstream from an LCS. Block one travel lane. Save the event and generate a response plan suggestion.</p> <p>Review the suggested items.</p>	<p>The software has a configuration value to indicate if LCS should be suggested as part of any suggested response plan.</p> <p>When the value of the configuration is set to false, the software does not suggest LCS as part</p>	<input type="checkbox"/>	<input type="checkbox"/>

			of a suggested response plan.		
39	SRT-1176	Open and log into a map as the non-administrator user. Open the map context menu and attempt to open the LCS Configuration dialog.	LCS verifies permission for configuring LCS sets and heads.	<input type="checkbox"/>	<input type="checkbox"/>
40	SRT-1181	From the non-administrator map, open the LCS Status dialog. Attempt to set the op status of an LCS.	LCS verifies permission for changing the operational status of LCS sets.	<input type="checkbox"/>	<input type="checkbox"/>
41	SRT-1177	From the LCS Status dialog of the non-administrator map, attempt to add a message to an LCS. Attempt to modify a message in the queue of an LCS. Attempt to remove the message in the queue of an LCS. Attempt to blank the queue of an LCS.	LCS verifies permission for sending a display command for an LCS set.	<input type="checkbox"/>	<input type="checkbox"/>
42	SRT-1178	From the LCS Status dialog of the non-administrator map, attempt to manually refresh the status of an LCS with an Active op status.	LCS verifies permission for requesting status of LCS sets.	<input type="checkbox"/>	<input type="checkbox"/>
43	SRT-1179	From the LCS Status dialog of the non-administrator map, attempt to set the brightness mode of an LCS with an Active op status.	LCS verifies permission for setting the brightness level of LCS sets.	<input type="checkbox"/>	<input type="checkbox"/>
44	SRT-1180	From the LCS Status dialog of the non-administrator map, attempt to set the control mode of an LCS with an Active op status.	LCS verifies permission for setting the control mode of LCS sets.	<input type="checkbox"/>	<input type="checkbox"/>
45	SRT-1212	Review the entries in the FDOT_ODS.ODS_LCS_HEAD_STATUS table of the database.	The software archives the op status of LCS heads associated to an LCS set.	<input type="checkbox"/>	<input type="checkbox"/>
46	SRT-1213	Review the entries in the FDOT_ODS.ODS_LCS_MESSAGES table of the database.	The software will archive messages displayed by LCS set.	<input type="checkbox"/>	<input type="checkbox"/>
47	SRT-1158	This requirement tests that the message are NTCIP 1203 Version 02.35. Short of	None.	<input type="checkbox"/>	<input type="checkbox"/>

		reviewing each OID being sent, there is no direct way to verify this without an NTCIP compliant sign. This requirement can not be tested directly but is indirectly test by the simulator used throughout the testing			
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

23. IC-21: SG-4385 Apply on a per day basis filter to device report

23.1 Objectives

The objective of this integration case is to test the requirements associated with the per-day report filtering.

23.2 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.

Requirement Number	Requirement Text
SRT-1013	When running a report with a per-day filter option, the software will allow a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.
SRT-1014	This option will apply to all reports that allow the user to select a time range on a per day basis.

23.3 Test Approach

This test will demonstrate that all reports that have a per day filter will filter data consistently within the start and end time range on a per-day basis.

23.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- RS

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- The following report templates should be configured for use in the system:
 - Agency Response Times Report
 - AVL Report
 - Beat Coverage Summary Report
 - Camera Usage Report
 - CCTV Report
 - Central Computer System Report

- Daily Chronology Report
- DMS Report
- DMS Usage Report
- Event Chronology Report
- Event Details Report
- Event Lane Blockage Report
- Event Level Report
- Event List with Lane Blockage Report
- Event List Report
- Event Response Times Report
- Event Summary Report
- FHP Request Report
- Geofence Report
- Notifier Contact Summary Report
- Ramp Event List Report
- Ramp Meters Report
- RISC Chronology
- Road Ranger Activity Details Report
- Road Ranger Activity Report
- Road Ranger Activity Summary Report
- Road Ranger Admin Details Report
- Road Ranger Administration Report
- Road Ranger Administration Summary Report
- Road Ranger Assists Report
- Road Ranger Cost Savings Report
- Road Ranger Duplicate Activity Report
- Road Ranger Response Time QA Report
- Road Ranger Status Report
- Road Ranger Void Activity Report
- RWIS Report
- Safety Barriers Report
- Secondary Crash Report
- Secondary Event Report
- SIRV Assists Report
- Stop Alert Report
- TSS Report
- Vehicle GPS Location Report
- Vehicle Location Report
- Wrong Way Alarms Report
- Wrong Way Device Report

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1013 SRT-1014	<p>Open the Generate Reports dialog. Select the "Agency Response Time Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will apply to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1013 SRT-1014	View the "AVL Report" from the list and observe the parameters.	This filter does not make sense with the report. The parameter was removed from this report.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1013 SRT-1014	From the Generate Reports dialog. Select the "Beat Coverage Summary Report" from the list.	When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
4	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Camera Usage Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day</p>	<input type="checkbox"/>	<input type="checkbox"/>

		filtering by time on a per day basis.	basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
5	SRT-1013 SRT-1014	View the "CCTV Report" in the report dialog and observe the parameters.	This filter does not make sense with the report. The parameter was removed from this report.	<input type="checkbox"/>	<input type="checkbox"/>
6	SRT-1013 SRT-1014	View the "Central Computer System Report" in the report dialog and observe the parameters.	This filter does not make sense with the report. The parameter was removed from this report.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1013 SRT-1014	From the Generate Reports dialog. Select the "Daily Chronology Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.	When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00	<input type="checkbox"/>	<input type="checkbox"/>

			contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
8	SRT-1013 SRT-1014	<p>View the "DMS Report" in the report dialog and observe the parameters. Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	This filter does not make sense with the report. The parameter was removed from this report.	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "DMS Usage Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00</p>	<input type="checkbox"/>	<input type="checkbox"/>

			and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
10	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Event Chronology Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
11	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Event Details Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
12	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Event Lane Blockage Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
13	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Event Level Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
14	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Event List with Lane Blockage Report" from the list.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
15	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Event List Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day</p>	<input type="checkbox"/>	<input type="checkbox"/>

		filtering by time on a per day basis.	basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
16	SRT-1013 SRT-1014	From the Generate Reports dialog. Select the "Event Response Times Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.	When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.	<input type="checkbox"/>	<input type="checkbox"/>
17	SRT-1013 SRT-1014	From the Generate Reports dialog. Select the "Event	When running a report with a per-day filter option, the software allows a user to	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Summary Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
18	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "FHP Request Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>

		<p>the output of the two reports filtering by time on a per day basis.</p>	<p>the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
19	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Geofence Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>

20	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Notifier Contact Summary Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
21	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Ramp Event List Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
22	<p>SRT-1013 SRT-1014</p>	<p>View "Ramp Meters Report" in the report dialog and observe the parameters.</p>	<p>This filter does not make sense with the report. The parameter was removed from this report.</p>	<input type="checkbox"/>	<input type="checkbox"/>
23	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Road Ranger Activity Details Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00</p>	<input type="checkbox"/>	<input type="checkbox"/>

			and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
24	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Road Ranger Activity Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
25	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Road Ranger Activity Summary Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
26	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Road Ranger Admin Details Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
27	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Road Ranger Administration Summary Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
28	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Road Ranger Administration Report" from the list.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
29	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Road Ranger Assists Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day</p>	<input type="checkbox"/>	<input type="checkbox"/>

		filtering by time on a per day basis.	basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
30	SRT-1013 SRT-1014	From the Generate Reports dialog. Select the "Road Ranger Cost Savings Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.	When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.	<input type="checkbox"/>	<input type="checkbox"/>
31	SRT-1013 SRT-1014	From the Generate Reports dialog. Select the "Road	When running a report with a per-day filter option, the software allows a user to	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Ranger Duplicate Activity Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
32	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Road Ranger Response Time QA Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
33	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Road Ranger Status Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>

34	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Road Ranger Void Activity Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will apply to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
35	SRT-1013 SRT-1014	View the "RWIS Report" in the report dialog and observe the parameters.	This filter does not make sense with the report. The parameter was removed from this report.	<input type="checkbox"/>	<input type="checkbox"/>
36	SRT-1013 SRT-1014	View the "Safety Barriers Report" in the report dialog and observe the parameters.	This filter does not make sense with the report. The parameter was removed from this report.	<input type="checkbox"/>	<input type="checkbox"/>
37	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Secondary Crash Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and</p>	When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected	<input type="checkbox"/>	<input type="checkbox"/>

		<p>the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00. The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
38	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Secondary Event Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report. Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report. Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis. The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
39	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "SIRV Assists Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>
40	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Stop Alert Report" from the list.</p>	<p>When running a report with a per-day filter option, the software allows a user to</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
41	SRT-1013 SRT-1014	<p>View the "TSS Report" in the report dialog and observe the parameters.</p>	<p>This filter does not make sense with the report. The parameter was removed from this report.</p>	<input type="checkbox"/>	<input type="checkbox"/>
42	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "Vehicle GPS Location Report" from the list.</p> <p>Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report.</p> <p>Update the start date's time to be 17:00 and the end date's</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected.</p> <p>This option will applies to a report that allows the user to select a time range on a per day basis.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>		
43	<p>SRT-1013 SRT-1014</p>	<p>From the Generate Reports dialog. Select the "Wrong Way Alarms Report" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from</p>	<input type="checkbox"/>	<input type="checkbox"/>

			the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.		
44	SRT-1013 SRT-1014	View the "Wrong Way Device Report" in the report dialog and observe the parameters.	This filter does not make sense with the report. The parameter was removed from this report.	<input type="checkbox"/>	<input type="checkbox"/>
45	SRT-1013 SRT-1014	<p>From the Generate Reports dialog. Select the "RISC Chronology" from the list. Specify a date range of a whole week, where the start date has a time of 08:00 and the end date has a time of 17:00. Run the report.</p> <p>Select the report parameter to apply the time range on a per day basis. Run the report. Update the start date's time to be 17:00 and the end date's time to be 08:00. Run the report.</p> <p>Review and compare the output of the first report with the output of the two reports filtering by time on a per day basis.</p>	<p>When running a report with a per-day filter option, the software allows a user to specify that the range of time defined by the start and end time parameters selected should apply each day across the full date period selected. This option will applies to a report that allows the user to select a time range on a per day basis.</p> <p>The report that applied the time range on a per-day basis and had a start time of 08:00 and end time of 17:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 08:00 and 17:00.</p> <p>The report that applied the time range on a per-day basis and had a start time of 17:00 and end time of 08:00 contains only the results from the report that did not apply the time range on a per-day basis that occurred between 17:00 and 08:00.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
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FDOT Witness	
SwRI Witness	

24. IC-22: SG-6355 Security Improvements - Password Hashing Complexity

24.1 Objectives

The objective of this integration case is to test the requirements associated with the usage of strong password storage and transmittal practices.

24.2 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.

Requirement Number	Requirement Text
SRT-1096	When transmitting passwords, the software will only transmit the encrypted form of the password.
SRT-1097	When storing passwords in the config file, the software will store the encrypted form of the password.
SRT-1098	When storing passwords in the database, the software will use the BCrypt hashing algorithm.
SRT-1099	The software will salt users' passwords when hashing them.

24.3 Test Approach

The tests will show that the software uses stronger password storage and transmittal algorithms.

24.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- EM

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- A user account configured as a Windows user with administrator permissions.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1096	<p>Use Executive Handler Viewer to put SAA and EM into a detail log level.</p> <p>Open Operator Map and put it into detail log level.</p> <p>Log into the map as the Windows user using credential-based authentication.</p> <p>Review Status Logger for the password used in the authenticateReq from the Map to SAA, and the authenticateUserReq from EM to SAA on behalf of the user.</p>	When transmitting passwords, the software only transmits the encrypted form of the password.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1096	<p>Open the User and Group Management dialog.</p> <p>Configure a new non-Windows user as an administrator. Save the user.</p> <p>Review Status Logger for the password sent as part of the addUserReq.</p>	When transmitting passwords, the software only transmits the encrypted form of the password.	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1097	<p>Use the following query to review the password in the database for the user created in the previous step:</p> <pre>SELECT user_name, user_password FROM dbo.ct_user WHERE user_name = '<user name>' AND ceased_use = 0;</pre> <p>Note the hash.</p>	When storing passwords at rest, the software uses a BCrypt or stronger hashing algorithm.	<input type="checkbox"/>	<input type="checkbox"/>
4	SRT-1098	<p>Use a tool, such as https://bcrypt-generator.com/ to verify that the password hash in the database is a valid hash for the password.</p>	When storing passwords in the database, the software uses a BCrypt or stronger hashing algorithm.	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1099	<p>From the User and Group Management dialog, set the password for the non-Windows user to the same password.</p> <p>Use the following query to review the password in the database for the user created in the previous step:</p> <pre>SELECT user_name, user_password FROM dbo.ct_user WHERE user_name</pre>	<p>When storing passwords at rest, the software uses a BCrypt or stronger hashing algorithm.</p> <p>The software salts users' passwords when hashing them.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<pre>= '<user name>' AND ceased_use = 0;</pre> <p>Compare the hash with the prior hash. Use a tool, such as https://bcrypt-generator.com/ to verify that the password hash in the database is a valid hash for the password.</p>			
6	SRT-1096	<p>Log out of the Operator Map. Log into the map as the non-Windows user configured in the previous steps. Review Status Logger for the password used in the authenticateReq from the Map to SAA, and the authenticateUserReq from EM to SAA on behalf of the user.</p>	When transmitting passwords, the software only transmits the encrypted form of the password.	<input type="checkbox"/>	<input type="checkbox"/>
7	SRT-1096	<p>Open the Change Password dialog and change the password for the current user. Review Status Logger for the password sent in the changeUserPasswordReq.</p>	When transmitting passwords, the software only transmits the encrypted form of the password.	<input type="checkbox"/>	<input type="checkbox"/>
8	SRT-1096 SRT-1097	<p>Open the User and Group Management dialog. Change the password of the CNA subsystem user account. Open the Config Editor. Use the Config Editor to generate an encrypted string of the password assigned to the CNA subsystem account. Update the "saaPassword" value for CNA to the encrypted string. If CNA is running, stop the process. Start CNA. Review Status Logger for the password used in the authenticateReq from CNA to SAA on startup.</p>	<p>When transmitting passwords, the software only transmits the encrypted form of the password. When storing passwords in the configuration file, the software stores the encrypted form of the password.</p>	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1097	Using the Config Editor, review all passwords stored in the config file.	When storing passwords in the configuration file, the software stores the encrypted form of the password.	<input type="checkbox"/>	<input type="checkbox"/>

Test End Date/Time	
FDOT Witness	
SwRI Witness	

25. IC-23: SG-6397 RISC Module Chronology Report

25.1 Objectives

The objective of this integration case is to test the requirements associated with creating a new RISC module chrono report.

25.2 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.

Requirement Number	Requirement Text
SRT-1009	The system will provide a report on the chronology of a RISC activation.
SRT-1010	The RISC chronology report will contain the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.
SRT-1011	The RISC chronology report will contain the report period, number of events found, and the event id range on the first page of the report.
SRT-1012	For each event matching the report criteria, the report will contain the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, RISC Contractor, RISC activator, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC complete time, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.

25.3 Test Approach

The tests will show that our software properly the event of a new RISC Chronology report.

25.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- AVL/RR
- CNA
- DMS
- EM
- RS
- RISC

Configured Devices

- N/A

4.3 Other Prerequisite Conditions

- A RISC Chronology Report is configured in the Event Management report group.
- Identify an event that does not have a RISC activation.
- Identify any set of events with a valid event status and associated RISC activations that meet the following criteria:
 1. At least two events created on different days, but during different hours of the day.
 2. At least two events created on different days, but in the same hour of the day.
 3. At least two events with different organizations.
 4. At least two events with different event types.
 5. At least one event with an invalid event status.
 6. At least one event with a known location.
 7. At least one event in a different county and on the same roadway as event 6.
 8. At least one event in the same county, but on a different roadway as event 6.
 9. At least one event in the same county, on the same roadway, but on a different direction than event 6.
 10. At least one event in the same county, on the same roadway and direction, but further downstream than event 6.
 11. At least one event with only ramp lanes blocked.
 12. At least one event with no ramp lanes blocked.
 13. At least one event with at a specific event attribute.
 14. At least two events with different notifying agencies.
 15. At least one event with a worst blockage of only a shoulder blocked.
 16. At least one event with a worst blockage of only one travel lane blocked.
 17. At least one event with an involved vehicle that specifies a make, a model of "Car" type, a color, a year, and a state and tag.
 18. At least one event with an involved vehicle with a make, a model of "Commercial" vehicle type, a color, a year, and a state and tag.
 19. At least one event with an injury type.
 20. At least one event without any injuries.
 21. At least one event that was open longer than 60 minutes.
 22. At least one event that was open less than 60 minutes.
 23. At least one event with a specific responding agency that has a notified, on scene, and departed timestamp.
 24. At least one event with a response plan that has activated a message on a DMS.
 25. At least one event with out a response plan.
 26. At least one event with a Severe event severity.
 27. At least one event with a procedural error.
 28. At least one event without a procedural error.
 29. At least two events with the same Road Ranger vehicle but on different beats dispatched to the event.

- 30. At least one event with a CAD # specified.
- 31. At least one event with a case # specified.
- 32. At least two events where the associated RISC activations are located in different zones.
- 33. At least two events where the associated RISC contractors are different.

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-1009	Open the Reporting dialog. Find the RISC Chronology report in the Event Management group and select it.	The system provides a report on the chronology of a RISC activation.	<input type="checkbox"/>	<input type="checkbox"/>
2	SRT-1010 SRT-1011 SRT-1012	With no parameters configured run the report.	The system provides a report on the chronology of a RISC activation. The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report. For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, RISC activator, initial call time, call accepted time, notice to proceed	<input type="checkbox"/>	<input type="checkbox"/>

			<p>time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>All RISC activations associated to events with valid event statuses are displayed in the report.</p>		
3	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Set the event number range parameters to match a specific event ID for an event with a RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that match the specific event ID and have a valid</p>	<input type="checkbox"/>	<input type="checkbox"/>

			event status display in the report.		
4	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the date range parameters to only include a specific day range that matches events with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that were created in the specific date range and have a valid event status display in the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the date range parameters to include a specific date range and specify specific start and end times that match events with an associated RISC activation.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Set the parameter to apply the time range on a per day basis. Run the report.</p>	<p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that were created in the specific date range during the specified start and end time on each day, and have a valid event status display in the report.</p>		
6	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the day of week parameter to only one day that matches events with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that were created in the specific date range and have a valid event status display in the report.</p>		
7	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the "Managing Center" parameter to one that matches an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start</p>	<input type="checkbox"/>	<input type="checkbox"/>

			and stop times, additional equipment requested, on scene equipment, and the RISC Chronology. Only RISC activations with associated events that have the specified organization and have a valid event status display in the report.		
8	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the county parameter to one of the counties to one that matches an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the specified county and have a valid event status display in the report</p>	<input type="checkbox"/>	<input type="checkbox"/>
9	SRT-1010 SRT-1011	Reset the parameters.	The RISC chronology report contains the date the report was	<input type="checkbox"/>	<input type="checkbox"/>

	<p>SRT-1012</p>	<p>Set the county and roadway parameters to one of the counties that matches an event with an associated RISC activation. Run the report.</p>	<p>created, the center that generated the report, and the filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report. For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology. Only RISC activations with associated events that have the specified county, roadway, and have a valid event status are displayed in the report.</p>		
<p>10</p>	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the county and roadway parameters to a different roadway than the one in the previous test step that matches an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>

			<p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the specified county, roadway, and have a valid event status are displayed in the report.</p>		
11	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the county, roadway and direction parameters to one that matches an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time,</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the specified county, roadway, direction, and have a valid event status are displayed in the report.</p>		
12	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the county, roadway and direction parameters to a different than the one that was specified in the previous test step that matches an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			specified county, roadway, direction, and have a valid event status are displayed in the report.		
13	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the county, roadway, direction, and from reference point and location parameters to a location that is upstream of an known event location for an event with an associated RISC activation.</p> <p>Set the to reference point and location parameters to a location that is downstream from an known event location for an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that are between the specified locations in the specified county, on the specified roadway and direction, and have a valid event status are displayed in the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>
14	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the county, roadway, direction, and from reference point and</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>location parameters to a location that is upstream of an known event location for an event with an associated RISC activation. Set the to reference point and location parameters to a location that is also upstream from an known event location for an event with an associated RISC activation. Run the report.</p>	<p>filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report. For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology. Only RISC activations with associated events that are between the specified locations in the specified county, on the specified roadway and direction, and have a valid event status are displayed in the report.</p>		
15	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the Ramp Events to include ramp events. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>All RISC activations with associated events, including those that are located on ramps and have a valid event status are displayed in the report.</p>		
16	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the Ramp Events parameter to exclude ramp events. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time,</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>All RISC activations with associated events, excluding those that are located on ramps, and have a valid event status are displayed in the report.</p>		
17	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the Ramp Events parameter to ramp events only. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>All RISC activations with associated events, including only those that are located on ramps</p>	<input type="checkbox"/>	<input type="checkbox"/>

			and have a valid event status are displayed in the report.		
18	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the event type parameter to be for a specific event type of an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the specified event type and have a valid event status display in the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>
19	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the event attribute parameter to include one attribute that matches an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>All RISC activations with associated events that have the specified event attribute and a valid event status are displayed in the report.</p>		
20	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the event status parameter to be for a specific valid event status of an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have a valid event status display in the report</p>		
21	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters.</p> <p>Set the event status parameter to be for an invalid event status ("VOID") of an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene</p>	<input type="checkbox"/>	<input type="checkbox"/>

			equipment, and the RISC Chronology. Only RISC activations with associated events that have the specified event status display in the report		
22	SRT-1010 SRT-1011 SRT-1012	Reset the parameters. Set the event status parameter to be for any event status. Run the report.	The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report. For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology. All RISC activations and their associated events display in the report	<input type="checkbox"/>	<input type="checkbox"/>
23	SRT-1010 SRT-1011 SRT-1012	Reset the parameters. Set the notifying agency parameter to be for a specific notifying agency of an event with an associated RISC activation.	The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Run the report.</p>	<p>report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the selected notifying agency and a valid event status display in the report</p>		
24	<p>SRT-1010</p> <p>SRT-1011</p> <p>SRT-1012</p>	<p>Reset the parameters.</p> <p>Set the notifying agency parameter to be for a specific notifying agency of an event with an associated RISC activation.</p> <p>Select the parameter option to filter to any notifying agency except the selected one.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that do not have the selected notifying agency and have a valid event status display in the report</p>		
25	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the worst lane blockage parameter to be for any travel lane. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have a travel lane blocked and have a valid event status display in the report</p>		
26	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters.</p> <p>Set the vehicle type parameter to be for a specific vehicle type of an involved vehicle for an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have involved vehicles of the specified type and have a valid event status display in the report</p>	<input type="checkbox"/>	<input type="checkbox"/>

27	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters. Set the commercial vehicle type parameter. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have involved vehicles that are commercial vehicles and have a valid event status display in the report</p>	<input type="checkbox"/>	<input type="checkbox"/>
28	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters. Set the injury type parameter to be for any injury. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period,</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have an injury type and have a valid event status display in the report</p>		
29	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the duration parameters to be less than 60 minutes. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have a duration under 60 minutes and have a valid event status display in the report</p>		
30	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the duration parameters to be greater than 60 minutes. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			Only RISC activations with associated events that have a duration over 60 minutes and have a valid event status display in the report		
31	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the responding agency parameter to be for a specific responding agency of an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the selected responding agency and have a valid event status display in the report</p>	<input type="checkbox"/>	<input type="checkbox"/>
32	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the Using DMS parameter to be for any DMS.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that used a DMS in the response plan and have a valid event status display in the report</p>		
33	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters.</p> <p>Set the Using DMS parameter to be for a specific DMS in a response plan of an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that used the specific DMS in the response plan and have a valid event status display in the report</p>		
34	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the severity parameter to be Severe. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have a severe Severity and have a valid event status display in the report</p>		
35	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the parameter to limit records to those with a Road Ranger Error. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have procedural errors and have a valid event status display in the report</p>	<input type="checkbox"/>	<input type="checkbox"/>
36	<p>SRT-1010 SRT-1011</p>	<p>Reset the parameters.</p>	<p>The RISC chronology report contains the date the report was</p>	<input type="checkbox"/>	<input type="checkbox"/>

	<p>SRT-1012</p>	<p>Set the parameter to be a Road Ranger vehicle that was dispatched to an event with an associated RISC activation. Run the report.</p>	<p>created, the center that generated the report, and the filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report. For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology. Only RISC activations with associated events that have vehicle dispatch records for the selected vehicle and have a valid event status display in the report</p>		
37	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the beat parameter to be the beat used by a Road Ranger vehicle that was dispatched to an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report. The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have vehicle dispatch records for the selected vehicle beat and have a valid event status display in the report</p>		
38	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the CAD # parameter to one that is associated to an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the specified CAD # and have a valid event status display in the report</p>		
39	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the Case # parameter to one that is associated to an event with an associated RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations with associated events that have the</p>	<input type="checkbox"/>	<input type="checkbox"/>

			specified Case # and have a valid event status display in the report		
40	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the event chronology type parameter to include one chronology type that matches an event with an associated RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>All RISC activations with associated events that have the specified chronology type and a valid event status are displayed in the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>
41	SRT-1010 SRT-1011 SRT-1012	<p>Reset the parameters.</p> <p>Set the activation number range parameters to match a specific activation ID for a RISC activation.</p> <p>Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations that match the specific activation ID range and are associated to an event with a valid event status display in the report.</p>		
42	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the RISC contract zone parameter to match a RISC contract zone for a RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene equipment, and the RISC Chronology.</p> <p>Only RISC activations that match the specific RISC contract zone and are associated to an event with a valid event status display in the report.</p>		
43	<p>SRT-1010 SRT-1011 SRT-1012</p>	<p>Reset the parameters. Set the RISC contractor parameter to match a RISC contractor for a RISC activation. Run the report.</p>	<p>The RISC chronology report contains the date the report was created, the center that generated the report, and the filter parameters provided to the report on the first page of the report.</p> <p>The RISC chronology report contains the report period, number of events found, and the event id range on the first page of the report.</p> <p>For each event matching the report criteria, the report contains the event id, event type, report date, activation number, event status, last status timestamp, event duration, county, roadway, direction, Requesting Agency, initial call time, call accepted time, notice to proceed time, RISC start time, RISC end time, RISC Resolved Duration, RISC Removal time, all equipment on scene, RISC start and stop times, additional equipment requested, on scene</p>	<input type="checkbox"/>	<input type="checkbox"/>

			equipment, and the RISC Chronology. Only RISC activations that match the specific RISC contractor and are associated to an event with a valid event status display in the report.		
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

26. IC-24: SG-6417 Configure RPG Distance for DMS Messages when Travel Lanes are Cleared

26.1 Objectives

The objective of this integration case is to test the requirements associated with creating more a new base severity level within the RPG distance setting.

26.2 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.

Requirement Number	Requirement Text
SRT-973	The software will allow the user to configure the search distance when there are no travel lanes blocked.
SRT-974	The software will support a default search distance for when no travel lanes are blocked.
SRT-975	The software will support a search distance for when no travel lanes are blocked on a per-event type basis.
SRT-976	When searching for devices to include in a response plan for an event with no travel lanes blocked, the system will use the search distance for when no travel lanes are blocked.
SRT-977	If the event is configured to use an event type that has an event type-specific distance to search when no lanes are blocked, the system will use that event type-specific search distance.
SRT-978	When configuring the default or a device specific EM device template, the software will allow the user to configure a location-specific message template to use when there is no lane blockage by a specific event type, or for the default event type.
SRT-979	When an event has no lane blockage, the response plan generator will use the template for no lane blockage when generating a message for the response plan.

26.3 Test Approach

These tests will demonstrate the templates associated with no lanes blockage for response plans.

26.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- CNA

- DMS
- EM
- HAR
- CVS
- LCS

Configured Devices

- Several DMS, configured as noted below.
- Several HAR, configured as noted below.
- Several LCS, configured as noted below.
- One RSE, as noted below.

4.3 Other Prerequisite Conditions

- In the SunGuide config file, under EM ensure that:
 - The DMS proximity search distances are 1 mile for no blockage, 3 miles for minor, 5 miles for moderate, and 10 for severe.
 - The HAR proximity search distances are 3 mile for no blockage, 5 miles for minor, 10 miles for moderate, and 20 for severe.
 - The TAM proximity search distances are 1 mile for no blockage, 3 miles for minor, 5 miles for moderate, and 10 for severe.
 - The initial LCS proximity search distances are 1 mile for no blockage, 3 miles for minor, 5 miles for moderate, and 10 for severe.
 - The LCS proximity search distances are 3 mile for no blockage, 5 miles for minor, 10 miles for moderate, and 15 for severe.
- In the SunGuide config file, under CVS ensure that the rseRadius is at least 1 mile.
- Identify a potential event location such that:
 - For each of the following, at least 2 DMS should be on the same road, and 2 DMS should be on a different road:
 - Under 1 mile upstream in the device linking from the location.
 - Between 1 and 3 miles upstream in the device linking from the location.
 - Between 3 and 5 miles upstream in the device linking from the location.
 - Between 5 and 10 miles upstream in the device linking from the location.
 - Over 10 miles upstream in the device linking from the location.
 - A HAR located at the following:
 - Under 3 miles radially from the location.
 - Between 3 and 5 miles radially from the location.
 - Between 5 and 10 miles radially from the location.
 - Between 10 and 20 miles radially from the location.
 - Over 20 miles radially from the location.
 - A RSE located under one mile from the location.
 - An LCS located at the following:
 - Under 1 mile upstream in the device linking from the location.

- Between 1 and 3 miles upstream in the device linking from the location.
 - Between 3 and 5 miles upstream in the device linking from the location.
 - Between 5 and 10 miles upstream in the device linking from the location.
 - Between 10 and 15 miles upstream in the device linking from the location.
 - Between 15 and 20 miles upstream in the device linking from the location.
 - Over 20 miles upstream in the device linking from the location.
- Message templates defined with the following configuration:
 - A message template named "Default DMS & Event Type - On Route" with the following template content "DEFAULT DMS[
]EVENT TYPE[
][
]ON ROUTE[
][DISTANCE]".
 - A message template named "Default DMS & Event Type - Off Route" with the following template content "DEFAULT DMS[
]EVENT TYPE[
][
]OFF ROUTE[
][DISTANCE]".
 - A message template named "Default DMS Only - On Route" with the following template content "DEFAULT [
]DMS ONLY[
][
]OFF ROUTE[
][DISTANCE]".
 - A message template named "Default DMS Only - Off Route" with the following template content "DEFAULT[
]DMS ONLY[
][
]ON ROUTE[
][DISTANCE]".
 - A message template named "Specific DMS & Event Type - On Route" with the following template content "SPECIFIC DMS EVENT TYPE[
]ON ROUTE[
][DISTANCE]".
 - A message template named "Specific DMS & Event Type - Off Route" with the following template content "SPECIFIC DMS EVENT TYPE[
]OFF ROUTE[
][DISTANCE]".
 - A message template named "Specific DMS Only - On Route" with the following template content "SPECIFIC DMS ONLY[
]ON ROUTE[
][DISTANCE]".
 - A message template named "Specific DMS Only - Off Route" with the following template content "SPECIFIC DMS ONLY[
]OFF ROUTE[
][DISTANCE]".

Test Procedure

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

	Requirement Number(s)	Test Steps	Expected Results	P	F
1	SRT-973 SRT-974	Use the Config Editor to view the noBlockage configuration value for	The software allows the user to configure the search distance when	<input type="checkbox"/>	<input type="checkbox"/>

		the "dmsProximityConfig", "lcsProximityConfig", "lcsInitialProximityConfig", "harProximityConfig", and "tamProximityConfig" in the EM section of the config file.	there are no travel lanes blocked. The software supports a default search distance for when no travel lanes are blocked.		
2	SRT-973 SRT-975	<p>Open an Operator Map. From the map, open the Event Type configuration dialog. Select the "Crash" event type and configure the device search distances as follows:</p> <ul style="list-style-type: none"> • For DMS, TAM, and initial LCS: 3 for no blockage, 5 for minor, 10 for moderate, and 15 for severe. • For LCS: 5 for no blockage, 10 for minor, 15 for moderate, and 20 for severe. • For HAR: 5 for no blockage, 10 for minor, 20 for moderate, and 30 for severe. <p>Save any changes to the configuration.</p>	<p>The software allows the user to configure the search distance when there are no travel lanes blocked.</p> <p>The software supports a search distance for when no travel lanes are blocked on a per-event type basis.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-978	<p>From the map, open the EM Device Template configuration dialog. Review the available fields for configuring a DMS device template. Configure the Default DMS template as follows:</p> <ul style="list-style-type: none"> • Select the "Default DMS & Event Type - On Route" for the "On Road - Open" template and default event type. • Select the "Default DMS & Event Type - Off Route" for the "Off Road - Open" template and default event type. • Select the "Default DMS Only - On Route" for the "On Road 	When configuring the default or a device specific EM device template, the software allows the user to configure a location-specific message template to use when there is no lane blockage by a specific event type, or for the default event type.	<input type="checkbox"/>	<input type="checkbox"/>

		<p>- Open" template and "Crash" event type.</p> <ul style="list-style-type: none"> • Select the "Default DMS Only - Off Route" for the "Off Road - Open" template and "Crash" event type. <p>Configure one DMS from the same roadway and direction, and one from a different roadway or direction at each distance level identified in the preconfiguration as follows:</p> <ul style="list-style-type: none"> • Select the "Specific DMS Only - On Route" for the "On Road - Open" template and default event type. • Select the "Specific DMS Only - Off Route" for the "Off Road - Open" template and default event type. • Select the "Specific DMS & Event Type - On Route" for the "On Road - Open" template and "Crash" event type. <p>Select the "Specific DMS & Event Type - Off Route" for the "Off Road - Open" template and "Crash" event type.</p>			
4	<p>SRT-976 SRT-979</p>	<p>From the map, create a new event of type "Disabled Vehicle" at the preselected location. Do not block any lanes. Save and suggest a response plan. Review the suggested response plan items.</p>	<p>When searching for devices to include in a response plan for an event with no travel lanes blocked, the system uses the search distance for when no travel lanes are blocked. Only DMS within one mile of the event are suggested.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>Only HAR within three miles of the event are suggested.</p> <p>Only LCS within one and three miles of the event are suggested.</p> <p>The suggested TAM presentation region only extends for one mile.</p> <p>When an event has no lane blockage, the response plan generator uses the template for no lane blockage when generating a message for the response plan.</p> <p>DMS on the same roadway and direction as the event that do not have a device specific template configured use the "Default DMS & Event Type - On Route" template.</p> <p>DMS on a different roadway or direction as the event that do not have a device specific template configured use the "Default DMS & Event Type - Off Route" template.</p> <p>DMS on the same roadway and direction as the event that have a device specific template configured use the "Specific DMS Only - On Route" template.</p> <p>DMS on a different roadway or direction as the event that have a device specific template configured use the</p>		
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			"Specific DMS Only - Off Route" template.		
5	SRT-977 SRT-979	<p>From the map, create a new event of type "Crash" at the preselected location.</p> <p>Do not block any lanes. Save and suggest a response plan.</p> <p>Review the suggested response plan items.</p>	<p>If the event is configured to use an event type that has an event type-specific distance to search when no lanes are blocked, the system uses that event type-specific search distance. Only DMS within three miles of the event are suggested.</p> <p>Only HAR within five miles of the event are suggested.</p> <p>Only LCS within three and five miles of the event are suggested.</p> <p>The suggested TAM presentation region only extends for three miles.</p> <p>When an event has no lane blockage, the response plan generator uses the template for no lane blockage when generating a message for the response plan.</p> <p>DMS on the same roadway and direction as the event that do not have a device specific template configured use the "Default DMS Only - On Route" template.</p> <p>DMS on a different roadway or direction as the event that do not have a device specific template configured use the "Default DMS Only - Off Route" template.</p>	<input type="checkbox"/>	<input type="checkbox"/>

			<p>DMS on the same roadway and direction as the event that have a device specific template configured use the "Specific DMS & Event Type - On Route" template.</p> <p>DMS on a different roadway or direction as the event that have a device specific template configured use the "Specific DMS & Event Type - Off Route" template.</p>		
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

27. IC-25: SG-5682 Wrong Way Driver Response Plan's location

27.1 Objectives

The objective of this integration case is to test the requirements associated with making visibility and wrong way driving events location based.

27.2 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.

Requirement Number	Requirement Text
SRT-1002	The software will treat Wrong Way Driving and Visibility event types as location-based event types and produce a response plan suggestion for events of those types based on the current event location.
SRT-1003	The software will allow location-based device templating for Wrong Way Driving and Visibility event types.

27.3 Test Approach

The tests will show that our software treats Wrong Way Driving and Visibility events as location based events and produces response plans at the specified location.

27.4 Test Descriptions

The following section details the necessary applications and configuration required prior to running the indicated test steps.

Subsystems/Drivers Required

- DataBus
- SAA
- EM
- CNA
- DMS

Configured Devices

- Two DMS, one with the name "DEFAULT ON ROUTE" and the other with the name "SPECIFIC ON ROUTE", both on the same roadway.
- Two DMS, one with the name "DEFAULT OFF ROUTE" and the other with the name "SPECIFIC OFF ROUTE", both on a different roadway.

Other Prerequisite Conditions

- In the SunGuide config file:
 - Under CVS ensure that the rseRadius is at least 1 mile.

- Under EM the dmsProximityConfig should have a value of 3 miles for the noBlockage distance.
- Each of the DMS should be included in the device linking and located within 1 mile of a chosen event location on the same roadway as "DEFAULT ON ROUTE" and "SPECIFIC ON ROUTE" DMS.
- Message templates defined with the following configuration:
 - A message template named "Default On Route" with the following template content: "DEFAULT ON ROUTE"
 - A message template named "Default Off Route" with the following template content: "DEFAULT OFF ROUTE"
 - A message template named "Default On Route - Closed" with the following template content: "DEFAULT ON ROUTE CLOSED"
 - A message template named "Default Off Route - Closed" with the following template content: "DEFAULT OFF ROUTE CLOSED"
 - A message template named "Default On Route - Open" with the following template content: "DEFAULT ON ROUTE OPEN"
 - A message template named "Default Off Route - Open" with the following template content: "DEFAULT OFF ROUTE OPEN"
 - A message template named "Default On Route - Ramp" with the following template content: "DEFAULT ON ROUTE RAMP"
 - A message template named "Default Off Route - Ramp" with the following template content: "DEFAULT OFF ROUTE RAMP"
 - A message template named "Specific On Route" with the following template content: "SPECIFIC ON ROUTE"
 - A message template named "Specific Off Route" with the following template content: "SPECIFIC OFF ROUTE"
 - A message template named "Specific On Route - Closed" with the following template content: "SPECIFIC ON ROUTE CLOSED"
 - A message template named "Specific Off Route - Closed" with the following template content: "SPECIFIC OFF ROUTE CLOSED"
 - A message template named "Specific On Route - Open" with the following template content: "SPECIFIC ON ROUTE OPEN"
 - A message template named "Specific Off Route - Open" with the following template content: "SPECIFIC OFF ROUTE OPEN"
 - A message template named "Specific On Route - Ramp" with the following template content: "SPECIFIC ON ROUTE RAMP"
 - A message template named "Specific Off Route - Ramp" with the following template content: "SPECIFIC OFF ROUTE RAMP"

Test Procedure

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

Requirement	Test Steps	Expected Results	P	F
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	Number(s)				
1	SRT-1003	<p>Open the EM Device Template Configuration dialog.</p> <p>For the "DEFAULT ON ROUTE", "SPECIFIC ON ROUTE", "DEFAULT OFF ROUTE" and "SPECIFIC OFF ROUTE" DMS, configure the following:</p> <ul style="list-style-type: none"> • Select the "Default On Route" template for the Default Event Type "On Road". • Select the "Default Off Route" template for the Default Event Type "Off Road". • Select the "Default On Route - Open" template for the Default Event Type "On Road - Open". • Select the "Default Off Route - Open" template for the Default Event Type "Off Road - Open". • Select the "Default On Route - Closed" template for the Default Event Type "On Road - Closed". • Select the "Default Off Route - Closed" template for the Default Event Type "Off Road - Road Closed". • Select the "Default On Route - Ramp" template for the Default Event Type "On Road Ramp". • Select the "Default Off Route - Ramp" template 	<p>The software allows location-based device templating for Wrong Way Driving and Visibility event types.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>for the Default Event Type "Off Road Ramp".</p> <p>For the "SPECIFIC ON ROUTE" and "SPECIFIC OFF ROUTE" DMS only, configure the following:</p> <ul style="list-style-type: none"> • Select the "Specific On Route" template for the "Visibility" and "Wrong Way Driver" event types "On Road". • Select the "Specific Off Route" template for the "Visibility" and "Wrong Way Driver" event types "Off Road". • Select the "Specific On Route - Open" template for the "Visibility" and "Wrong Way Driver" event types "On Road - Open". • Select the "Specific Off Route - Open" template for the "Visibility" and "Wrong Way Driver" event types "Off Road - Open". • Select the "Specific On Route - Closed" template for the "Visibility" and "Wrong Way Driver" event types "On Road - Closed". • Select the "Specific Off Route - Closed" template for the "Visibility" and "Wrong Way Driver" event types "Off Road - Road Closed". • Select the "Specific On Route - Ramp" template for the "Visibility" and 		
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		<p>"Wrong Way Driver" event types "On Road Ramp".</p> <ul style="list-style-type: none"> Select the "Specific Off Route - Ramp" template for the "Visibility" and "Wrong Way Driver" event types "Off Road Ramp". <p>Save the changes.</p>			
2	SRT-1002	<p>Create a new event with the event type "Wrong Way Driver" at the previously identified location. When prompted to create and active a response plan, select "No". From the Event Details dialog, save and suggest a response plan. From the Response Plan dialog, select the option to use the "Device Linking" DMS search method and the default search distance. Accept all suggested items. Review the details of the suggested response plan items.</p>	<p>The software treats the Wrong Way Driving event type as a location-based event type and produces a response plan suggestion for events of those types based on the current event location.</p> <p>The "DEFAULT ON ROUTE" DMS was suggested and is using the content from the "Default On Route - Open" template.</p> <p>The "SPECIFIC ON ROUTE" DMS was suggested and is using the content from the "Specific On Route - Open" template.</p> <p>The "DEFAULT OFF ROUTE" DMS was suggested and is using the content from the "Default Off Route - Open" template.</p> <p>The "SPECIFIC OFF ROUTE" DMS was suggested and is using the content from the "Specific Off Route - Open" template.</p> <p>The suggested email item specifies the event location.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3	SRT-1002	<p>Modify the lane map to be Shoulder, Travel, Travel, Shoulder. Block one travel lane. Save and</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		suggest a response plan. Accept all suggested items. Review the details of the suggested response plan items.			
4	SRT-1002	Block all travel lanes. Save and suggest a response plan. Accept all suggested items. Review the details of the suggested response plan items.	<p>The software treats the Wrong Way Driving event type as a location-based event type and produces a response plan suggestion for events of those types based on the current event location.</p> <p>The "DEFAULT ON ROUTE" DMS was suggested and is using the content from the "Default On Route - Closed" template.</p> <p>The "SPECIFIC ON ROUTE" DMS was suggested and is using the content from the "Specific On Route - Closed" template.</p> <p>The "DEFAULT OFF ROUTE" DMS was suggested and is using the content from the "Default Off Route - Closed" template.</p> <p>The "SPECIFIC OFF ROUTE" DMS was suggested and is using the content from the "Specific Off Route - Closed" template.</p> <p>The suggested email item specifies the event location.</p>	<input type="checkbox"/>	<input type="checkbox"/>
5	SRT-1002	Modify the lane map to be Shoulder, Exit Ramp, Exit Ramp, Shoulder. Block all exit ramp lanes. Save and suggest a response plan. Accept all suggested items. Review the details of the suggested response plan items.	The software treats the Wrong Way Driving event type as a location-based event type and produces a response plan suggestion for events of those types based on the current event location.	<input type="checkbox"/>	<input type="checkbox"/>

			<p>The "DEFAULT ON ROUTE" DMS was suggested and is using the content from the "Default On Route - Ramp" template.</p> <p>The "SPECIFIC ON ROUTE" DMS was suggested and is using the content from the "Specific On Route - Ramp" template.</p> <p>The "DEFAULT OFF ROUTE" DMS was suggested and is using the content from the "Default Off Route - Ramp" template.</p> <p>The "SPECIFIC OFF ROUTE" DMS was suggested and is using the content from the "Specific Off Route - Ramp" template.</p> <p>The suggested email item specifies the event location.</p>		
6	<p>SRT-1002</p>	<p>Create a new event with the event type "Visibility" at the previously identified location. Save and suggest a response plan. Accept all suggested items. Review the details of the suggested response plan items.</p>	<p>The software treats the Visibility event type as a location-based event type and produces a response plan suggestion for events of those types based on the current event location.</p> <p>The "DEFAULT ON ROUTE" DMS was suggested and is using the content from the "Default On Route - Open" template.</p> <p>The "SPECIFIC ON ROUTE" DMS was suggested and is using the content from the "Specific On Route - Open" template.</p> <p>The "DEFAULT OFF ROUTE" DMS was suggested and is using the</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>

			<p>content from the "Default Off Route - Open" template.</p> <p>The "SPECIFIC OFF ROUTE" DMS was suggested and is using the content from the "Specific Off Route - Open" template.</p> <p>The suggested email item specifies the event location.</p>		
7	SRT-1002	<p>Modify the lane map to be Shoulder, Travel, Travel, Shoulder. Block one travel lane. Save and suggest a response plan. Accept all suggested items. Review the details of the suggested response plan items.</p>	<p>The software treats the Visibility event type as a location-based event type and produces a response plan suggestion for events of those types based on the current event location.</p> <p>The "DEFAULT ON ROUTE" DMS was suggested and is using the content from the "Default On Route" template.</p> <p>The "SPECIFIC ON ROUTE" DMS was suggested and is using the content from the "Specific On Route" template.</p> <p>The "DEFAULT OFF ROUTE" DMS was suggested and is using the content from the "Default Off Route" template.</p> <p>The "SPECIFIC OFF ROUTE" DMS was suggested and is using the content from the "Specific Off Route" template.</p> <p>The suggested email item specifies the event location.</p>	<input type="checkbox"/>	<input type="checkbox"/>
8	SRT-1002	<p>Block all travel lanes. Save and suggest a response plan. Accept all suggested items. Review the</p>	<p>The software treats the Visibility event type as a location-based event type</p>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>details of the suggested response plan items.</p>	<p>and produces a response plan suggestion for events of those types based on the current event location. The "DEFAULT ON ROUTE" DMS was suggested and is using the content from the "Default On Route - Closed" template. The "SPECIFIC ON ROUTE" DMS was suggested and is using the content from the "Specific On Route - Closed" template. The "DEFAULT OFF ROUTE" DMS was suggested and is using the content from the "Default Off Route - Closed" template. The "SPECIFIC OFF ROUTE" DMS was suggested and is using the content from the "Specific Off Route - Closed" template. The suggested email item specifies the event location.</p>		
9	<p>SRT-1002</p>	<p>Modify the lane map to be Shoulder, Exit Ramp, Exit Ramp, Shoulder. Block all exit ramp lanes. Save and suggest a response plan. Accept all suggested items. Review the details of the suggested response plan items.</p>	<p>The software treats the Visibility event type as a location-based event type and produces a response plan suggestion for events of those types based on the current event location. The "DEFAULT ON ROUTE" DMS was suggested and is using the content from the "Default On Route - Ramp" template. The "SPECIFIC ON ROUTE" DMS was suggested and is using the content from the</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>

			<p>"Specific On Route - Ramp" template.</p> <p>The "DEFAULT OFF ROUTE" DMS was suggested and is using the content from the "Default Off Route - Ramp" template.</p> <p>The "SPECIFIC OFF ROUTE" DMS was suggested and is using the content from the "Specific Off Route - Ramp" template.</p> <p>The suggested email item specifies the event location.</p>		
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Test End Date/Time	
FDOT Witness	
SwRI Witness	

28. Notes

