

SunGuide®:

Software Requirements Specification

SunGuide-SRS-9.0



Prepared for:

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Appendix A: Requirements

List of Acronyms

ATMS	Advanced Traffic Management System
AVL	Automatic Vehicle Location
C2C	Center-to-Center
CCTV	Closed Circuit Television
CVS	Connected Vehicle Subsystem
DA	Data Archiving
DD	Data Distribution
DFS	Data Fusion System
DMS	Dynamic Message Sign
DOT	Department of Transportation
EG	Evacuation Guidance
EH	Executive Handler
EM	Event Management
EM/PM	Event Management / Performance Measures
EV	Event Viewer
FDOT	Florida Department of Transportation
FEAT	Feature Requirement
GPIO	General Purpose Input/Output
HAR	Highway Advisory Radio
IDS	Incident Detection System
IM	Incident Management
IMS	Inventory Maintenance System
ITS	Intelligent Transportation Systems
ITN	Invitation to Negotiate
LCS	Lane Control System
MAS	Message Arbitration System
ODS	Operational Data Store
PS	Pricing System
RMF	Ramp Metering Firmware
RMS	Ramp Metering System
RPG	Response Plan Generator
RR	Road Ranger
RS	Reporting System
RWIS	Road Weather Information System
SB	Safety Barrier

SPARR.....	Smart Phone Application for Road Rangers
SRS	Software Requirements Specification
SUB.....	Subsystem Requirement
SwRI	Southwest Research Institute
TCS.....	Traffic Control Subsystem
TMC.....	Traffic Management Center
TPS.....	Truck Parking Subsystem
TSS.....	Transportation Sensor System
TV	Toll Viewer
TVT.....	Travel Times
VSL.....	Variable Speed Limit
XML.....	Extensible Markup Language

REVISION HISTORY

Revision	Date	Changes
1.0.0-Draft	December 22, 2003	Initial Release
1.0.1-Draft	January 27, 2004	Updated based on SRR input and discussion with ITS Central Office
1.0.2	April 2, 2004	Incorporated FDOT comments.
2.0.0-Draft	August 27, 2004	Added requirements for systems in release 2 (EG, HAR, WS, C2C and RMS)
2.0.0	May 4, 2005	Finalized with FDOT comments, new enhancements (from ECO 1.1)
2.0.1	August 11, 2005	Finalized with ECO 1 changes
2.1.0	April 12, 2006	Updated with Release 2.1 requirements
2.2.0	November 17, 2006	Updated with Release 2.2 requirements
2.2.1	November 27, 2006	Updated architecture based on naming nomenclature changes in the EM PM design and implementation
2.2.2	December 4, 2006	Added Ramp Metering firmware and CCTV Scheduler requirements
3.0.0-Draft	April 25, 2007	Added Release 3.0 requirements
3.0.0	May 29, 2007	Requirements updated based on SWAM #11. Added software release versioning information and requirements traceability.
4.0.0-Draft	December 16, 2007	Added Release 3.1 and 4.0 requirements.
4.0.0	February 22, 2008	Updated Release 3.1 and 4.0 requirements based on SWAM #15.
4.3	January 25, 2010	Updated Release 4.2 and 4.3 requirements based on SWAM#20, SWAM#21, SWAM#22 and referenced white papers
5.0	March 5, 2010	Added Release 5.0 requirements
5.1	February 16, 2012	Added Release 5.0.4, 5.0.5, and 5.1 requirements
6.0	February 15, 2013	Added Release 6.0 requirements
6.1	October 1, 2014	Added Release 6.1 requirements
6.2	August 5, 2015	Added Release 6.2 requirements
7.0	January 3, 2017	Added Release 7.0 requirements
7.1	September 25, 2017	Added Release 7.1 requirements

7.1.2	November 5, 2018	Added Release 7.1.1 and 7.1.2 requirements
7.2	July 3, 2019	Added Release 7.2 requirements
7.2	July 29, 2019	Release 7.2 requirement changes
8.0	March 10, 2020	Release 8.0 Set 1
8.0	April 20, 2020	Release 8.0 Set 2
8.0	July 1, 2020	Release 8.0 Set 3
8.0	September 22, 2020	Release 8.0 Revisions
8.0HF3	March 19, 2021	Release 8.0 HF3 Revisions
8.0HF4	April 19, 2021	Release 8.0 HF4 Revisions
8.1	July 14, 2021	Release 8.1 Revisions
8.2	July 7, 2022	Release 8.2 Revisions
9.0	December 2, 2023	Release 9.0 Revisions
9.0	May 13, 2024	Release 9.0 Additions and Revisions

1.4 Contacts

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

Appendix A:
REQUIREMENTS

Key	Description	Component/	Fix
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.	RS	SG 9.0
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.	RS	SG 9.0
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 within the Details section of the event chronology of an event.	RS	SG 9.0
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.	RS	SG 9.0
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.	DMS	SG 9.0
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.	DMS	SG 9.0
SRT-973	The software will allow the user to configure the search distance when there are no travel lanes blocked.	EM	SG 9.0
SRT-974	The software will support a default search distance for when no travel lanes are blocked.	EM	SG 9.0
SRT-975	The software will support a search distance for when no travel lanes are blocked on a per-event type basis.	EM	SG 9.0
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.	EM	SG 9.0
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.	EM	SG 9.0
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.	EM	SG 9.0
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.	EM	SG 9.0
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.	Operator Map	SG 9.0
SRT-981	Communication parameters can be defined as host and port combination or a URL.	Operator Map	SG 9.0
SRT-982	A user will be able to check for unique communication parameters across all device types currently connected to the Operator Map.	Operator Map	SG 9.0
SRT-983	The system will display all conflicting communication parameters in the dialog.	Operator Map	SG 9.0
SRT-984	In the ribbon of an event, the Planned Event section will be the rightmost section.	Operator Map	SG 9.0
SRT-985	In the ribbon of an event, the Location section will be the section to the left of the Planned Event section.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0

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.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
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.	EM	SG 9.0
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.	EM	SG 9.0
SRT-993	The system will allow the user to select multiple icons by holding the Shift key and dragging the mouse.	Operator Map	SG 9.0
SRT-994	The system will allow the user to toggle icon selection by holding the Control key and clicking an icon.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
SRT-999	The software will have a configuration option to notify operators when a vehicle arrives at different event than the dispatched event.	Operator Map	SG 9.0
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.	Operator Map	SG 9.0
SRT-1001	The software will allow the operator to cancel the dispatch or close the popup, leaving the vehicle dispatched to the event.	Operator Map	SG 9.0
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.	EM	SG 9.0
SRT-	The software will allow location-based device templating for Wrong Way Driving and Visibility event types.	EM	SG 9.0
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.	Operator Map	SG 9.0
SRT-	The grid will sort the events in the list by the shortest distance between the alarm and event by default.	Operator Map	SG 9.0
SRT-	The grid will include columns for the event id, distance from the event, roadway, direction, and event type.	Operator Map	SG 9.0
SRT-	If the data for a column is not available, the grid will not display a value for the column.	Operator Map	SG 9.0

SRT-1010	The grid will allow the user to sort and filter on each column.	Operator Map	SG 9.0
SRT-1011	The system will provide a report on the chronology of a RISC activation.	RS	SG 9.0
SRT-1012	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.	RS	SG 9.0
SRT-1013	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.	RS	SG 9.0
SRT-1014	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, all equipment on scene, RISC NTP start and stop times, additional equipment requested, and the RISC Chronology.	RS	SG 9.0
SRT-1015	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.	RS	SG 9.0
SRT-1016	This option will apply to all reports that allow the user to select a time range on a per day basis.	RS	SG 9.0
SRT-1017	The software will allow a user with permission to configure which C2C items should be available in the map.	C2C	SG 9.0
SRT-1018	The software will allow users to whitelist specific C2C items to be available in the map.	C2C	SG 9.0
SRT-1019	The software will allow users to filter C2C items by type, roadway, or direction when selecting items to whitelist.	C2C	SG 9.0
SRT-1020	The whitelist of allowed C2C items will apply to all users.	C2C	SG 9.0
SRT-1021	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.	Notify Manager	SG 9.0
SRT-1022	The software will have a configuration file setting for the time at which the system will check for processes in detail mode.	Notify Manager	SG 9.0
SRT-1023	At the configured time, the software will send an email of the current processes logging in detail mode.	Notify	SG 9.0
SRT-1024	If there are no processes in detail mode or no emails are specified in the configuration file, no email notification will be sent.	Notify Manager	SG 9.0
SRT-1025	If the software sends an email, the email will contain the amount of time each process has remaining in detail	Notify	SG 9.0
SRT-1026	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.	EH	SG 9.0
SRT-1027	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.	System	SG 9.0
SRT-1028	The system will allow the users to receive updates for events no longer in the list of available events.	EM	SG 9.0
SRT-1029	The software will send updates for events no longer in the available event list through the interface to RITIS.	DAR	SG 9.0
SRT-1030	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.	DAR	SG 9.0
SRT-1031	The RWIS alert dialog will display the threshold type, the threshold value, and the triggering measurement at the time of the alert.	Operator Map	SG 9.0

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.	IDS	SG 9.0
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.	IDS	SG 9.0
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.	IDS	SG 9.0
SRT-1034	The minimum number of consecutive detectors will be at least 1	IDS	SG 9.0
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.	IDS	SG 9.0
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.	IDS	SG 9.0
SRT-1037	The software will allow a user to put a WWD TSS detector into maintenance mode to suppress alerts.	IDS	SG 9.0
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.	IDS	SG 9.0
SRT-1042	The software will display the current status of the directional flag of the detector, if available.	IDS	SG 9.0
SRT-1043	The software will allow a user with permission to configure a device group.	SAA	SG 9.0
SRT-1043	A device group will consist of a list of devices which report an Op Status.	SAA	SG 9.0
SRT-1044	The software will allow a user with permission to configure a monitored group of devices.	IDS	SG 9.0
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.	IDS	SG 9.0
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.	IDS	SG 9.0
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.	IDS	SG 9.0
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.	IDS	SG 9.0
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.	IDS	SG 9.0
SRT-1050	If email and alert options for a monitored group are not configured, no notification will be sent.	IDS	SG 9.0
SRT-1050	If an alert is presented to the user, the alert will contain the name of the monitored group.	IDS	SG 9.0
SRT-1050	As part of the alert details, the software will display a grid of the group's devices and their current Op Statuses.	IDS	SG 9.0
SRT-1050	The options for handling the alert should only include Dismiss as already Detected, Dismiss as False Alarm, and Acknowledge, Take No Action.	IDS	SG 9.0

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.	IDS	SG 9.0
SRT-	When a device transitions to Out of Service, an email will be sent to the email configured in the configuration file.	IDS	SG 9.0
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.	IDS	SG 9.0
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.	SAA	SG 9.0
SRT-	The software will store a systemwide setting that specifies the number of days before a user's password expires.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-	The software will store a systemwide setting that specifies whether a user's password must have a minimum	SAA	SG 9.0
SRT-	The software will store a systemwide setting that specifies the minimum length of a user's password.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-	The software will store a systemwide setting that specifies whether a user's password must have a maximum	SAA	SG 9.0
SRT-	The software will store a systemwide setting that specifies the maximum length of a user's password.	SAA	SG 9.0
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.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-1064	The software will store a systemwide setting that specifies the number of password changes before a password can be reused.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-1066	The software will store a systemwide setting that specifies whether a password may be changed before a minimum number of days.	SAA	SG 9.0
SRT-1067	The software will store a systemwide setting that specifies the minimum number of days before a password may be changed.	SAA	SG 9.0
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.	SAA	SG 9.0
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.	SAA	SG 9.0

SRT-1070	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of lowercase letters.	SAA	SG 9.0
SRT-1071	The software will store a systemwide setting that specifies the minimum number of lowercase letters in a user's password.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-1073	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of uppercase letters.	SAA	SG 9.0
SRT-1074	The software will store a systemwide setting that specifies the minimum number of uppercase letters in a user's password.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-1076	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of digits.	SAA	SG 9.0
SRT-1077	The software will store a systemwide setting that specifies the minimum number of digits in a user's password.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-1079	The software will store a systemwide setting that specifies whether a user's password must have a minimum number of special characters.	SAA	SG 9.0
SRT-1080	The software will store a systemwide setting that specifies the minimum number of special characters in a user's password.	SAA	SG 9.0
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.	SAA	SG 9.0
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.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-1084	The software will store a systemwide setting that specifies whether spaces are allowed in a password.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-1086	The software will allow a user to view the password requirements settings.	SAA	SG 9.0
SRT-1087	Except for password reuse requirements, the software will inform the user of the currently met password criteria when setting a password.	SAA	SG 9.0
SRT-1088	The software will store a systemwide setting that specifies whether the password should begin with a letter.	SAA	SG 9.0
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.	SAA	SG 9.0

SRT-1090	The software will store a systemwide setting that specifies whether specific characters are disallowed in the password.	SAA	SG 9.0
SRT-1091	The software will store a systemwide setting that specifies the specific characters that are disallowed in the password.	SAA	SG 9.0
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.	SAA	SG 9.0
SRT-	The software will support a configuration option to enable encryption of messages in transit between processes.	System	SG 9.0
SRT-	If encryption is enabled, the software will encrypt transmissions between system processes.	System	SG 9.0
SRT-	The system will support TLSv1.3 as an encryption protocol.	System	SG 9.0
SRT-	When transmitting passwords, the software will only transmit the encrypted form of the password.	System	SG 9.0
SRT-	When storing passwords in the config file, the software will store the encrypted form of the password.	System	SG 9.0
SRT-	When storing passwords in the database, the software will use the BCrypt hashing algorithm.	System	SG 9.0
SRT-	The software will salt users' passwords when hashing them.	System	SG 9.0
SRT-	When a beacon is deleted, it will be removed from the running system but remain in the database.	BMS	SG 9.0
SRT-	When an RSE is deleted, it will be removed from the running system but remain in the database.	CVS	SG 9.0
SRT-	When a Contact Notification Area is deleted, it will be removed from the running system but remain in the	CNA	SG 9.0
SRT-	When a Contact Group is deleted, it will be removed from the running system but remain in the database.	CNA	SG 9.0
SRT-	When a Contact is deleted, it will be removed from the running system but remain in the database.	CNA	SG 9.0
SRT-	When a DMS Message Action is deleted, it will be removed from the running system but remain in the database.	GPIO	SG 9.0
SRT-	When an I/O Device Group is deleted, it will be removed from the running system but remain in the database.	GPIO	SG 9.0
SRT-	When an I/O Device is deleted, it will be removed from the running system but remain in the database.	GPIO	SG 9.0
SRT-	When a I/O State is deleted, it will be removed from the running system but remain in the database.	GPIO	SG 9.0
SRT-	When a HAR is deleted, it will be removed from the running system but remain in the database.	HAR	SG 9.0
SRT-	When an Icon Group is deleted, it will be removed from the running system but remain in the database.	SAA	SG 9.0
SRT-	When a Citilog Camera is deleted, it will be removed from the running system but remain in the database.	IDS	SG 9.0
SRT-	When a Vehicle Alert Device is deleted, it will be removed from the running system but remain in the database.	IDS	SG 9.0
SRT-	When an Action List Template is deleted, it will be removed from the running system but remain in the database.	MLS	SG 9.0
SRT-	When an Action Template is deleted, it will be removed from the running system but remain in the database.	MLS	SG 9.0
SRT-	When an MLS Controller is deleted, it will be removed from the running system but remain in the database.	MLS	SG 9.0
SRT-	When a Gate is deleted, it will be removed from the running system but remain in the database.	MLS	SG 9.0
SRT-	When a Managed Road is deleted, it will be removed from the running system but remain in the database.	MLS	SG 9.0
SRT-	When a Ramp is deleted, it will be removed from the running system but remain in the database.	MLS	SG 9.0
SRT-	When a Segment is deleted, it will be removed from the running system but remain in the database.	MLS	SG 9.0
SRT-	When an RWIS Station is deleted, it will be removed from the running system but remain in the database.	RWIS	SG 9.0
SRT-	When an RWIS Threshold is deleted, it will be removed from the running system but remain in the database.	RWIS	SG 9.0

SRT-	When a Remote Center is deleted, it will be removed from the running system but remain in the database.	RCA	SG 9.0
SRT-	When a Ramp Metering Controller is deleted, it will be removed from the running system but remain in the	RMS	SG 9.0
SRT-	When a RISC Contract is deleted, it will be removed from the running system but remain in the database.	RISC	SG 9.0
SRT-	When a RISC Contract Zone is deleted, it will be removed from the running system but remain in the database.	RISC	SG 9.0
SRT-	When a Report is deleted, it will be removed from the running system but remain in the database.	RS	SG 9.0
SRT-	When a Report Group is deleted, it will be removed from the running system but remain in the database.	RS	SG 9.0
SRT-	When a Schedule is deleted, it will be removed from the running system but remain in the database.	SAS	SG 9.0
SRT-	When a Scheduled Item is deleted, it will be removed from the running system but remain in the database.	SAS	SG 9.0
SRT-	When an Action List is deleted, it will be removed from the running system but remain in the database.	SAS	SG 9.0
SRT-	When a Safety Barrier is deleted, it will be removed from the running system but remain in the database.	SB	SG 9.0
SRT-	When a Traffic Signal Route is deleted, it will be removed from the running system but remain in the database.	TCS	SG 9.0
SRT-	When a Travel Time Destination is deleted, it will be removed from the running system but remain in the	TVT	SG 9.0
SRT-1134	When a Travel Time Device Template is deleted, it will be removed from the running system but remain in the database.	TVT	SG 9.0
SRT-1135	When a Travel Time Message Template is deleted, it will be removed from the running system but remain in the database.	TVT	SG 9.0
SRT-	When a Travel Time Link is deleted, it will be removed from the running system but remain in the database.	TVT	SG 9.0
SRT-	When a Travel Time Threshold is deleted, it will be removed from the running system but remain in the database.	TVT	SG 9.0
SRT-	When a Truck Parking Facility is deleted, it will be removed from the running system but remain in the database.	TPS	SG 9.0
SRT-	When a Truck Parking Area is deleted, it will be removed from the running system but remain in the database.	TPS	SG 9.0
SRT-	When a Truck Parking Zone is deleted, it will be removed from the running system but remain in the database.	TPS	SG 9.0
SRT-1141	When a Truck Parking Verification Schedule is deleted, it will be removed from the running system but remain in the database.	TPS	SG 9.0
SRT-	When a Video Destination is deleted, it will be removed from the running system but remain in the database.	VS	SG 9.0
SRT-	When a Video Source is deleted, it will be removed from the running system but remain in the database.	VS	SG 9.0
SRT-	When a Video Tour is deleted, it will be removed from the running system but remain in the database.	VS	SG 9.0
SRT-	When a Virtual Wall is deleted, it will be removed from the running system but remain in the database.	VW	SG 9.0
SRT-1146	When a Video Switching Workstation is deleted, it will be removed from the running system but remain in the database.	VS	SG 9.0
SRT-	When a Lane Control Sign is deleted, it will be removed from the running system but remain in the database.	LCS	SG 9.0
SRT-	When a Lane Control Sign Graphic is deleted, it will be removed from the running system but remain in the	LCS	SG 9.0
SRT-	When a Floodgate Library Folder is deleted, it will be removed from the running system but remain in the	C2C	SG 9.0
SRT-	When a Floodgate Library Message is deleted, it will be removed from the running system but remain in the	C2C	SG 9.0
SRT-	When a TAM Library Folder is deleted, it will be removed from the running system but remain in the database.	CVS	SG 9.0
SRT-	When a TAM Library Message is deleted, it will be removed from the running system but remain in the database.	CVS	SG 9.0

SRT-1155	When an SAA Equipment Group is deleted, it will be removed from the running system but remain in the	SAA	SG 9.0
SRT-1156	When an IDS Device Alarm Group is deleted, it will be removed from the running system but remain in the	IDS	SG 9.0
SRT-1157	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.	Operator Map	SG 9.0
SRT-1158	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.	Operator Map	SG 9.0
SRT-1159	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.	Operator Map	SG 9.0
SRT-1160	LCS shall support communication with devices using the National Transportation Communications for ITS Protocol (NTCIP) 1203 Version 02.35	LCS	SG 9.0
SRT-1161	LCS shall allow each LCS controller to be queried for current status.	LCS	SG 9.0
SRT-1162	LCS status polls shall include the current status of control mode: Central, Local, or Simulation (if supported).	LCS	SG 9.0
SRT-1163	LCS status polls shall include the current display of each LCS head.	LCS	SG 9.0
SRT-1164	LCS status polls shall include the current brightness mode (if supported): Automatic or Manual.	LCS	SG 9.0
SRT-1165	LCS status polls shall include the current brightness level (if supported): Day or Night.	LCS	SG 9.0
SRT-1166	LCS shall allow the brightness level to be set for each LCS set (if supported) to Auto, Day, or Night.	LCS	SG 9.0
SRT-1167	LCS shall allow the display of LCS heads to be set.	LCS	SG 9.0
SRT-1168	LCS shall allow display of an LCS head to be set to one of the graphics uploaded to the database.	LCS	SG 9.0
SRT-1169	LCS shall process the display setting of an LCS set as an atomic transaction.	LCS	SG 9.0
SRT-1170	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.	LCS	SG 9.0
SRT-1171	If one or less LCS heads in a set fails to display the requested signal, LCS shall return a successful response.	LCS	SG 9.0
SRT-1172	The software will log individual LCS head failures when processing a display request.	LCS	SG 9.0
SRT-1173	LCS shall allow an LCS set to be queried for the current display.	LCS	SG 9.0
SRT-1174	LCS shall allow the control mode for a set of LCS heads to be set to Central or Simulation (if supported).	LCS	SG 9.0
SRT-1175	LCS shall allow the operational status of a set of LCS heads to be set to either Active or Out of Service.	LCS	SG 9.0
SRT-1176	LCS shall allow users to add, delete and modify an LCS.	LCS	SG 9.0
SRT-1177	LCS shall allow users to add, modify, and delete the heads of an associated LCS set.	LCS	SG 9.0
SRT-1178	LCS shall verify permission for configuring LCS sets and heads.	LCS	SG 9.0
SRT-1179	LCS shall verify permission for sending a display command for an LCS set.	LCS	SG 9.0
SRT-1180	LCS shall verify permission for requesting status of LCS sets.	LCS	SG 9.0
SRT-1181	LCS shall verify permission for setting the brightness level of LCS sets.	LCS	SG 9.0
SRT-1182	LCS shall verify permission for setting the control mode of LCS sets.	LCS	SG 9.0
SRT-1183	LCS shall verify permission for changing the operational status of LCS sets.	LCS	SG 9.0
SRT-1184	LCS shall poll LCS sets for their status on a configurable frequency.	LCS	SG 9.0

SRT-1184	LCS shall report the current status of an LCS set as Active, Error, Failed, or Out of Service.	LCS	SG 9.0
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.	LCS	SG 9.0
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.	LCS	SG 9.0
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.	LCS	SG 9.0
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.	LCS	SG 9.0
SRT-1188	LCS shall not poll LCS sets which are Out of Service.	LCS	SG 9.0
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.	LCS	SG 9.0
SRT-1190	When an LCS is in a Failed states and completes a successful poll, the system will transition the LCS to Active status.	LCS	SG 9.0
SRT-1191	The software will use the device linking file to select which LCS should be included in the response plan.	LCS	SG 9.0
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.	LCS	SG 9.0
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.	LCS	SG 9.0
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.	LCS	SG 9.0
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.	LCS	SG 9.0
SRT-1196	The software will have a configuration value to indicate if LCS should be suggested as part of any suggested response plan.	LCS	SG 9.0
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.	LCS	SG 9.0
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.	LCS	SG 9.0
SRT-1199	The software will only suggest LCS that are in an Active state.	LCS	SG 9.0
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.	LCS	SG 9.0
SRT-1201	The software will suggest a red X on the shoulder and green arrows for the rest of the lanes.	LCS	SG 9.0
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.	LCS	SG 9.0
SRT-1203	The downstream LCS device will suggest all lanes are open.	LCS	SG 9.0
SRT-1204	The first upstream LCS will suggest a red X on the closed lanes.	LCS	SG 9.0

SRT-1206	The second and third upstream LCS will suggest a yellow X on the closed lane.	LCS	SG 9.0
SRT-1207	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.	LCS	SG 9.0
SRT-1208	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.	LCS	SG 9.0
SRT-1209	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.	LCS	SG 9.0
SRT-1210	When the response plan is terminated, the software will send a request to remove the message from the LCS.	LCS	SG 9.0
SRT-1211	The software will allow an operator to add LCS to a predefined response plan.	LCS	SG 9.0
SRT-1212	The software will allow an operator to set the signage for an LCS within a predefined plan.	LCS	SG 9.0
SRT-1213	The software will archive the op status of LCS heads associated to an LCS set.	LCS	SG 9.0
SRT-1214	The software will archive messages displayed by LCS set.	LCS	SG 9.0
SRT-1215	The software will accept alerts defined by the FDOT IDS Alert Protocol.	IDS	SG 9.0
SRT-1216	The software will implement the protocol defined by the FDOT document "FDOT IDS Alert Protocol - SunGuide Requirements_072723.docx".	IDS	SG 9.0
SRT-1217	When an alert is triggered through this protocol, an alert will be displayed in the Alert List.	IDS	SG 9.0
SRT-1218	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.	IDS	SG 9.0
SRT-1219	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.	IDS	SG 9.0
SRT-1220	The software will store alert ID, timestamp, alert type, and location description in the database.	IDS	SG 9.0
SRT-1221	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.	IDS	SG 9.0
SRT-1222	The software will publish configured vehicle alert devices to the C2C status feed.	C2C	SG 9.0
SRT-1223	The C2C status feed for vehicle alert devices will include at least the id, name, county, roadway, direction, description, latitude, longitude, operational status, and maintenance mode status.	C2C	SG 9.0
SRT-1224	If the id, name, county, roadway, direction, description, latitude, longitude, operational status, or maintenance mode status changes for a vehicle alert device, the software will publish an update through the C2C status feed for the vehicle alert device.	C2C	SG 9.0
SRT-1225	If the vehicle alert device is deleted, the software will publish an update indicating the device has been deleted.	C2C	SG 9.0
SRT-1226	The software will have a configuration file item for an internal IP address for Wrong Way Driving protocols that require a callback IP address to send alerts to the system.	IDS	SG 9.0
SRT-1227	The software will have a configuration file item for an external IP address for Wrong Way Driving protocols that require a callback IP address to send alerts to the system.	IDS	SG 9.0

SRT-1227	When configuring a Wrong Way Driving device, the user will select whether to use internal or external IP address when sending a callback IP address to the Wrong Way Driving device.	IDS	SG 9.0
SRT-1228	When the system registers a callback address with a Wrong Way Driving field device, the software will use the internal or external address as selected by the user in the device configuration.	IDS	SG 9.0
SRT-	The software will implement NTCIP 1209v2 for TSS data.	TSS	SG 9.0
SRT-	The software will retrieve speed, volume, and occupancy from the Sample Data Table.	TSS	SG 9.0
SRT-	The list of layouts in the Desktop Video Layout Manager will be alphabetized.	Operator Map	SG 9.0