System Administration Manual – Iteration 3

San Diego Integrated Corridor Management System (ICMS)
USDOT Contract Number DTFH61-06-H-00038

Version 3.0

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Revision History

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9/13/2012	1.1	Added a PhoneFactor chapter	Wai Chung Hon
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Introduction

The San Diego Integrated Corridor Management System (ICMS) is designed to assist in collecting and distributing traffic information to manage existing transportation systems. The ICMS software provides an integrated, browser-based thin client to support Traffic Operations Center (TOC) activities, as well as management and control modules for standard interfacing systems.

Purpose

This document is intended to support operators and managers working with the San Diego Integrated Corridor Management System (ICMS) by detailing how to configure and manage the ICMS application. It includes information to:

- create and modify operator accounts,
- create and modify groups,
- set permissions for groups,
- create a priority list for groups,
- manage equipment and other data,
- manage system parameters, and
- manage Center-to-Center access.

Definitions, Acronyms and Abbreviations

The following is a list of acronyms and abbreviations used in this document.

TABLE 1: ACRONYMS

Acronym	Description
ADS	Agency Data Server
AIS	American Internet Services
ATMS	Advanced Transportation Management System
CCTV	Closed Circuit Television Cameras
CHP	California Highway Patrol
DMS	Dynamic Message Sign
DMZ	Demilitarized Zone
GUI	Graphical User Interface

Acronym	Description
ICMS	Integrated Corridor Management System
IMTMS	InterModal Transportation Management System
LAN	Local Area Network
LCS	Lane Control Systems
MLCS	Managed Lane Control Systems
NMS	Network Management System
PeMS	Performance Measurement System
RMIS	Ramp Metering Information System
RTMS	Regional Transit Management System
SANDAG	San Diego Association of Government
TOSNET	Traffic Operations System Network
VDS	Vehicle Detection Station
WAN	Wide Area Network

The following is a list of definitions for the document.

TABLE 2: DEFINITIONS

Term	Definition
Alarm window	An alarm window within the ICMS application is used to alert the user to any device failures or severe traffic or weather conditions.
Browser	A web browser window. At this time, Internet Explorer Versions 7 and above are supported.
Compass rose	A compass rose is a tool located on the map window that is used to move around on the map. Shaped like a rose, the user can use the compass points to pan east, west, north, or south.
Geo-locator	The geo-locator is a tool used to place icons on the map at their correct locations without having to know their map coordinates.
List window	A list window within the ICMS application allows the user to view a list of all the devices in the system and know their status at a glance. The switcher bar at the bottom of the list window allows the user to filter out a particular device.
Organization	The traffic agency or other group which has purchased a license for the ICMS.
Permitted operator	An operator login with the needed privileges to perform a particular action. Please see the Administration document for a complete list of privileges that can be assigned to an operator login.

Term	Definition
Presets	A CCTV preset is a user-defined fixed location where the camera can be pointed to. The preset is given a name, and when the user chooses this preset, the camera returns to the fixed location.
Planned events	A Planned event is one where the agency plans for its occurrence such as in a lane closure for construction, or road closure for events
Switcher	The switcher bar is located at the bottom of ICMS windows which allow the user to switch to a different device quickly. By selecting a different device, the user is able to quickly start viewing the chosen device type.
Tiling	The tiling window allows the user to view information from different device types all within one window. The tiling window has cells where different devices can be placed. Operationally, this can be used to view video, VDS information, and the event window all surrounding a particular incident.
Unscheduled events	An unscheduled event is one where the agency does not know about it prior to its occurrence, such as in an accident, or road hazard
Viewer	A window within the ICMS application which allows the user to view information regarding a particular device or to view events. The viewer window gives the user the ability to see the information real time. If the user has the correct permissions, he will also be able to control the device or modify event information.

Windows Explanation

The ICMS application has a windowed browser interface which allows multiple sources of information from various systems and hardware to be open and accessible at the same time. This section presents an explanation of window types accessible to a standard operator.

Login Screen

The Login screen is the entry point for the ICMS. Every operator will have a username and password to log in to the system and will allow operator actions to be recorded and tracked accurately.

The initial Login window remains open in the background when the ICMS desktop launches, displaying which account is currently logged into the ICMS from the browser session. Figure 1 shows the initial login screen.

FIGURE 1: THE LOGIN SCREEN

To log into the ICMS:

a) Enter a username and password into the appropriate fields.
b) Click the *Login* button.
c) Wait for a phone call to the phone number configured in your user account.
d) Answer the phone and press the number sign.

User Preferences

After login, the ICMS desktop launches in a second (pop-up) browser window, and a message appears indicating that the specific operator's login preferences are being loaded.

User preferences allow a specific operator to save a desktop layout to be automatically loaded on login. Clicking the *Close* button on the message will force the default desktop layout to load.

To save a particular desktop layout, log into the system, configure the desktop layout desired, and click the *Profile* link in the upper menu bar.

The Profile window displays information about the current user. It displays the login name, actual name, and contact information. It also includes options for customizing the application. Two options are available that allow the operator to customize the desktop to their preference: *Reset desktop on next login*, and *Save current desktop for next login*. The 'Reset desktop' option returns the desktop to the default settings of 1 map window, 1 blank viewer window, and 1 blank list window the next time the user logs in. The 'Save current desktop' option allows the operator to save his current desktop and have it reload upon logging in. This option retains the types, sizes, and number of windows open along with the contents of those windows.

To force the desktop to reset upon next login, click on the *Reset desktop on next login* link.

To force the current settings to be saved upon logout, click the *Save current desktop on next login* link.

The *Change Password* option allows the operator to change his password. Selecting this option will redirect the user to an external site where the password for logging into the system (as well as the user's operating system) can be changed.

ICMS Desktop

The ICMS desktop launches in a second (pop-up) browser window, with several windows already open for the operator. If the operator has saved a particular desktop layout, that layout will be loaded. Otherwise, the default window layout will be loaded.

The desktop includes an upper menu bar, with the SANDAG logo located on the left, and the menu of window types and the logout link located on the right. It also includes a desktop area with a grid background, where windows can be located and managed.

To create new windows, click on the window type in the upper menu bar. If an operator has the correct permissions to create that type of window, a new window will launch in the desktop area. To log out, click the *Logout* link on the far right of the upper menu bar and choose whether to save the current desktop layout.

Figure 2 shows an example of a typical layout for the ICMS.

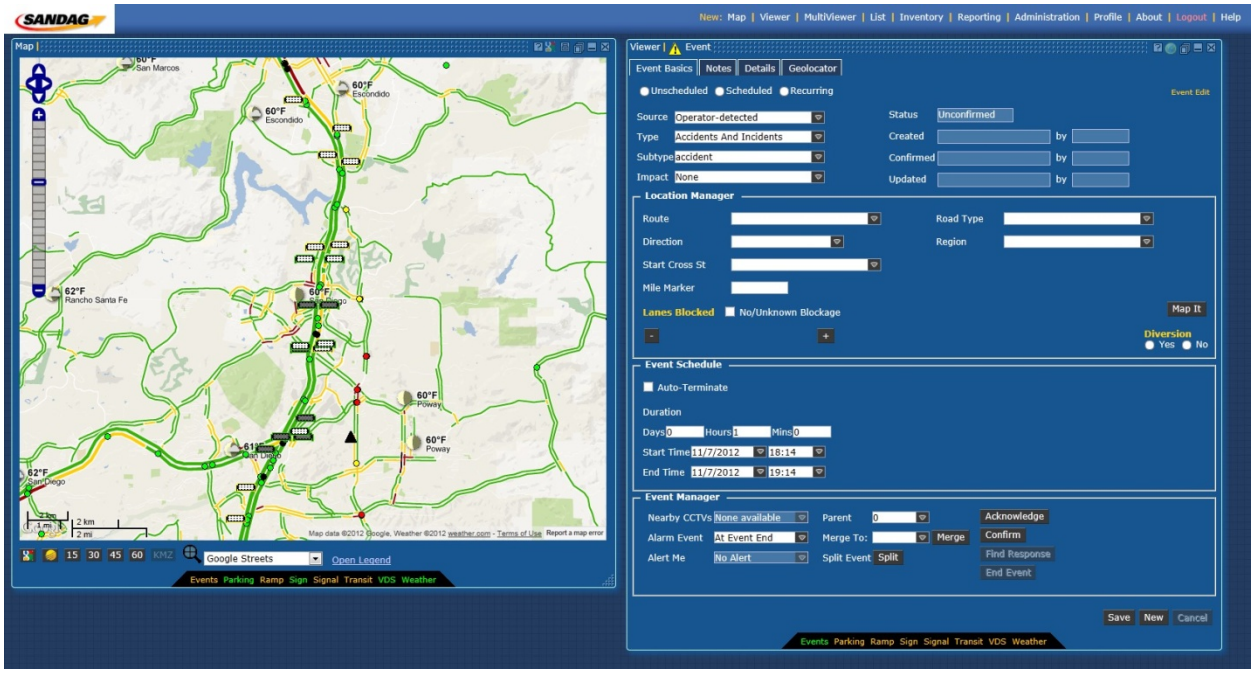


FIGURE 2: EXAMPLE OF ICMS DEFAULT WINDOW LAYOUT

Logout

To log out of the application, click on the Logout link in the upper menu bar.

The Administration Window

The Administration window contains many features mainly to manage users and to manage the software configuration. The features are accessed from the Switcher Bar and are described in Table 3.

TABLE 3: ADMINISTRATION WINDOW

Feature	Description
Operators	This option displays a list of all the operators in the system. It lists the name of the operator, the Login ID, the roles the operator belongs to, and their login information. Adding new operator accounts is managed by the IT and the ICMS Administrator.
Groups	This option allows the ICMS Administrator to place operators into groups and assign privileges to them.
Priorities	This option allows the ICMS Administrator to set priorities on which users can override camera locks
Properties	This option allows the ICMS Administrator to modify a system property. System properties are used to configure the application. This is a low-level function and must be done with caution as this can affect the operation of the ICMS.
Domains	This option allows the ICMS Administrator to modify a domain property. Domains are mainly used as drop-down selections in the User Interface. This is a low-level function and must be done with caution as this can affect the operation of the ICMS.
Map	This option allows the ICMS Administrator to create specific map views that show up on the drop-down list of maps for the Map Window.
Pollers	This option allows the ICMS Administrator to: start/stop a device poller, start/stop a data task poller, and start/stop scheduled CCTV presets. This is a low-level function and must be done with caution as this can affect the operation of the ICMS.
Corridor	This option allows the ICMS Administrator to modify the Business Rules and Process Management System (BRPMS) rules/variables.

The default Administration Window is shown in Figure 3. It is currently set to view the Operator page.

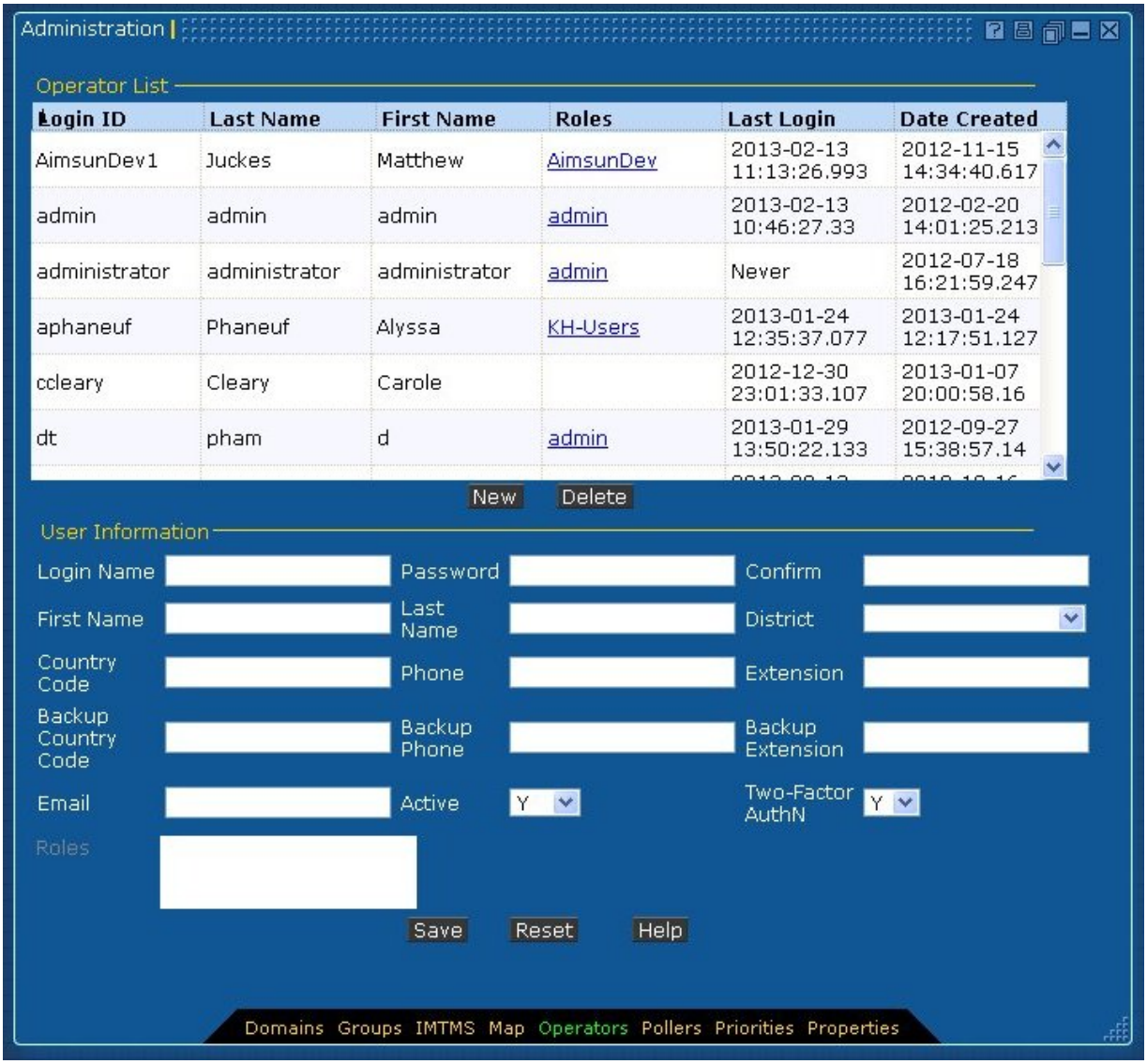


FIGURE 3: ADMINISTRATION WINDOW: DEFAULT VIEW

Managing ICMS Users and Privileges

Managing users and their permissions is a multi-step process using the Operators and Groups options on the Administration Window. There are four aspects that come into play when creating a new user for the ICMS: user groups, device groups, permissions, and roles. While this is somewhat complex, this allows for great flexibility when creating operators who can manipulate devices belonging to some districts but not others. This scheme can easily accommodate allowing a remote user to control a small number of devices but not all of them. Figure 4 shows the relationships between user groups, device groups, privileges and roles.

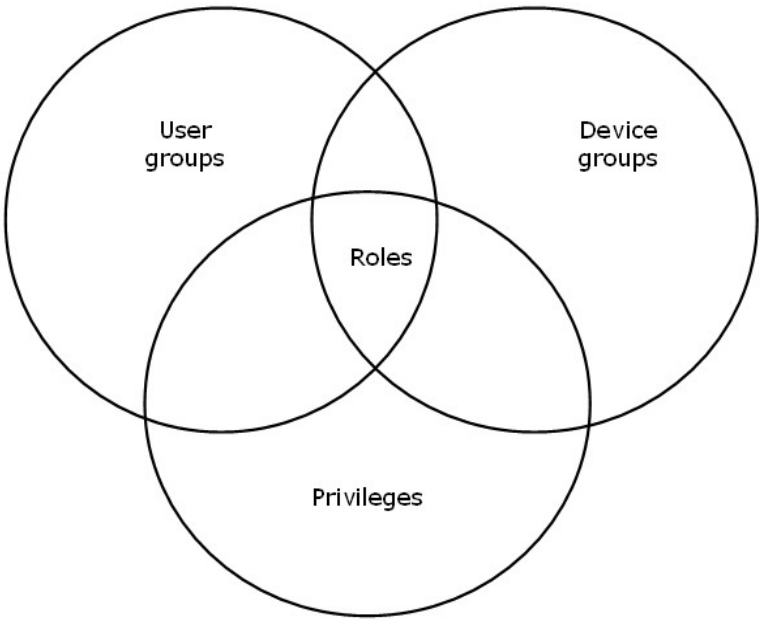


FIGURE 4: USER ACCOUNT RELATIONSHIPS

The following steps must be executed for a user to have all the rights they should be granted.

1) **Create a New User:** The ICMS Administrator must create a user account for each individual.
2) **Create User Groups:** The ICMS Administrator must create user groups based on privileges (such as traffic specialists, supervisors, admin, etc…) using the ICMS.
3) **Create Device Groups:** The ICMS Administrator must create device groups (based mainly on jurisdiction) using the ICMS.
4) **Create Roles/Assign Roles to Users:** The ICMS Administrator must assign roles to users using the ICMS.

The following sections will provide the details for each of the steps above.

Managing Users

All user management is contained on the Operators page of the Administration window. See Figure 3.

Creating a new User

Execute the following to create a new user account for the ICMS:

a) Open an Administration window by clicking on the *Administration* link in the upper menu bar.
b) Click on the *Operators* link.
c) Enter the user information, and click the *Save* button.

Modifying an Existing User

Execute the following to modify a user account for the ICMS:

a) Open an Administration window by clicking on the *Administration* link in the upper menu bar.
b) Click on the *Operators* link.
c) Update the user information, and click the *Save* button.

Removing an Existing User

Execute the following to remove a user account from the ICMS:

a) Open an Administration window by clicking on the *Administration* link in the upper menu bar.
b) Click on the *Operators* link.
c) Highlight the row containing the user.
d) Click on the *Delete* button.

Managing User Groups

The purpose of User Groups is to group personnel with similar functions together. Some examples of this are traffic operators, supervisors, and administration. For each grouping of personnel, an equivalent User Group must be created using the ICMS. Figure 5 displays the page required for the management of User Groups.

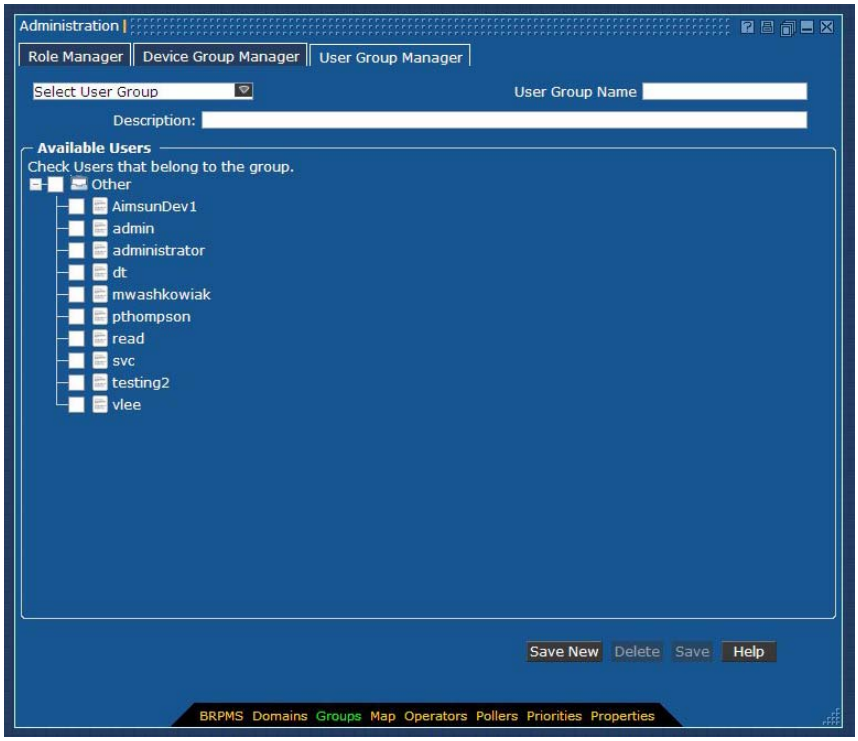


FIGURE 5: ADMINISTRATION WINDOW: GROUPS PANEL/USER GROUP MANAGER TAB

Creating a new User Group

To create a new User Group, execute the following:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *User Group Manager* tab at the top
d) Enter a new User Group Name
e) Enter a Description
f) Expand the + signs to list the individual users available
g) Select the user(s) to be placed in this new group by checking the box(es) next to the user name
h) Click on the *Save New* button.

Adding to an existing User Group

If the User Group is already established, execute the following to add a user to an existing group:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *User Group Manager* tab at the top
d) Select an existing User Group from the drop-down list
e) Expand the + signs to list the individual users available
f) Select the user(s) to be placed in this existing group by checking the box(es) next to the user name
g) Click on the *Save* button.

Note: A user may belong to more than one group at a time. In this case, the user will be granted all the privileges available to both, or more, groups.

Removing a User Group

To remove a User Group, execute the following:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *User Group Manager* tab at the top
d) Select an existing User Group from the drop-down list
e) Click on the *Delete* button.

Managing Device Groups

The purpose of Device Groups is to group devices together to organize who can control which devices. Most commonly, the devices will be grouped by jurisdiction. However, smaller groupings can be created to allow multiple agencies to have access to the same devices. Figure 6 displays the page required for the management of Device Groups.

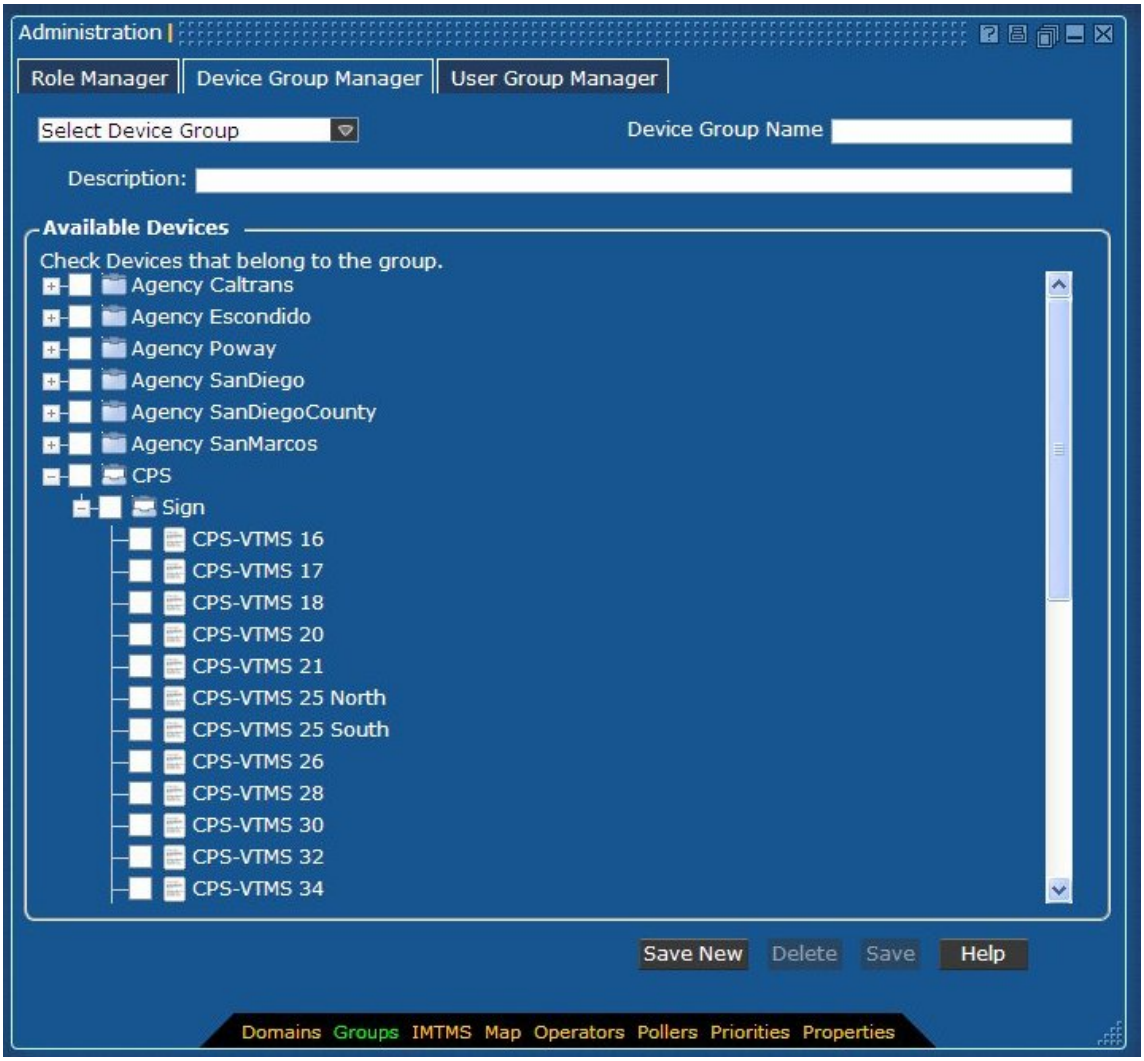


FIGURE 6: ADMINISTRATION WINDOW: GROUPS PANEL/DEVICE GROUP MANAGER TAB

Creating a new Device Group

To create a new Device Group, execute the following:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *Device Group Manager* tab at the top
d) Enter a new Device Group Name
e) Enter a Description
f) Expand the + signs to list the individual devices available
g) Select the devices(s) to be placed in this new group by checking the box(es) next to the device ID
h) Click on the *Save New* button.

Adding to an existing Device Group

If the Device Group is already established, execute the following to add a Device to an existing group:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar

c) Click on the *Device Group Manager* tab at the top
d) Select an existing Device Group from the drop-down list
e) Expand the + signs to list the individual devices available
f) Select the devices(s) to be placed in this existing group by checking the box(es) next to the device ID
g) Click on the *Save* button.

Note: A device may belong to more than one group at a time.

Removing a Device Group

To remove a User Group, execute the following:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *User Group Manager* tab at the top
d) Select an existing User Group from the drop-down list
e) Click on the *Delete* button.

Managing ICMS Roles

The ICMS Roles are what associate the User Groups, the Device Groups and privileges together. The ICMS Roles control which User Groups have access to which Device Groups and what they can do with those devices. Figure 7 displays the page required for the management of ICMS roles.

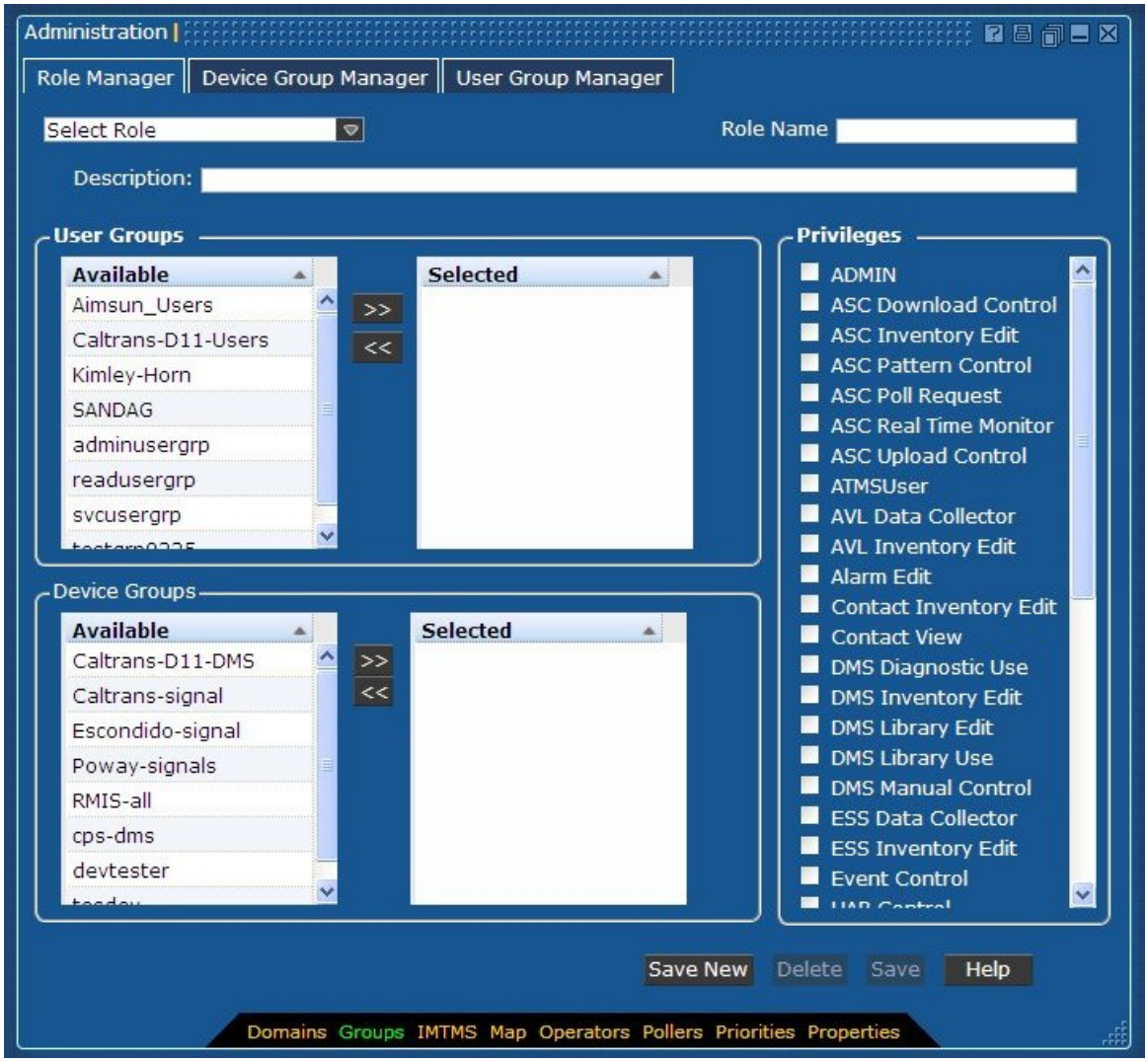


FIGURE 7: ADMINISTRATION WINDOW: GROUPS PANEL/ROLE MANAGER TAB

Adding an ICMS Role

To create a Role, execute the following:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *Role Manager* tab at the top
d) Enter a new Role Name
e) Enter a Description
f) Click on a User Group from the User Groups List. To select this user group, click the >> button to move it to the Selected column. Repeat for multiple groups. To remove a user group, click on the user group in the Selected column, and click the << button.
g) Click on a Device Group from the Device Groups List. To select this device group, click the >> button to move it to the Selected column. Repeat for multiple groups. To remove a device group, click on the device group in the Selected column, and click the << button.
h) To assign a set of privileges to this group of users and devices, check the box(es) under the Privileges list for those privileges that are to be assigned.
i) Click on the *Save New* button.

Modifying an ICMS Role

To modify a Role, execute the following:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *Role Manager* tab at the top
d) Select an existing Role from the drop-down list
e) Click on a User Group from the User Groups List. To select this user group, click the >> button to move it to the Selected column. To remove a user group, click on the user group in the Selected column, and click the << button.
f) Click on a Device Group from the Device Groups List. To select this device group, click the >> button to move it to the Selected column. To remove a device group, click on the device group in the Selected column, and click the << button.
g) To modify the set of privileges to this group of users and devices, check (or uncheck) the box(es) under the Privileges list for those privileges that are to be assigned.
h) Click on the *Save* button.

Removing an ICMS Role

To remove an ICMS Role, execute the following:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Groups* link in the Switcher Bar
c) Click on the *Role Manager* tab at the top
d) Select an existing Role from the drop-down list
e) Click on the *Delete* button.

Privilege Descriptions

Access to and control of most windows and devices in the ICMS is based on a series of privileges. Each type of window and subsystem has its own set of privileges, to allow granular control of operator actions. Table 4 describes each of the privileges.

An operator assigned to a Role created with no privileges can log into the system and access windows in View Only mode. For example, this means that while event information and DMS messages can be accessed and seen, no changes can be made to them. The tag View Only will appear on upper right corner of the windows the operator opens.

TABLE 4: PRIVILEGE DESCRIPTIONS

Privilege Name	Description
ADMIN	ADMIN privilege grants the operator full access to the system, as well as the ability to add, modify, or delete other operators using the Administration window.
ASC Download Control	N/A for ICMS
ASC Inventory Edit	ASC Inventory Edit grants operators access to add, modify, and delete devices in the equipment database.
ASC Pattern Control	ASC Pattern Control allows operators to send control commands to the signal
ASC Poll Request	N/A for ICMS
ASC Real Time Monitor	N/A for ICMS
ASC Upload Control	N/A for ICMS
ATMSUser	Not an operator access privilege.
AVL Data Collector	Not an operator access privilege. This permission is used to grant third parties access to the data feed.
AVL Inventory Edit	AVL Inventory Edit grants operators access to add, modify, and delete devices in the equipment database.
Alarm Edit	Grants the operator the ability to modify the thresholds for which alarms appear.
Contact Inventory Edit	Contact Inventory Edit allows the operator to add, modify, and delete the Contact information.
Contact View	Contact View allows the operator to view the Contact information
DMS Diagnostic Use	Allows the operator to run diagnostics on DMS
DMS Inventory Edit	DMS Inventory Edit grants operators access to add, modify, and delete signs in the equipment database.
DMS Library Edit	DMS Library Edit grants operators access to add, modify and delete messages in the DMS Message Library. Without either DMS Manual Control or DMS Library Use, an operator with this privilege can only work within the Library window—they cannot post their added or modified messages to a sign.
DMS Library Use	DMS Library Use grants drag and drop access from the DMS Message Library to the DMS Viewer window, and allows the message to be sent to the sign.

Privilege Name	Description
DMS Manual Control	DMS Manual Control grants full access to DMS Viewer windows. An operator with this privilege can create messages and post them directly to any sign. It allows pre-defined messages to be dragged and dropped from the DMS Message Library to any sign.
ESS Data Collector	Not an operator access privilege. This permission is used to grant third parties access to the data feed.
ESS Inventory Edit	ESS Inventory Edit grants operators access to add, modify, and delete devices in the equipment database.
Event Control	Event Control grants the operator access to add, modify, and terminate events.
HAR Control	HAR Control grants operators the ability to control the HARs
HAR Inventory Edit	HAR Inventory Edit grants operators access to add, modify, and delete devices in the equipment database.
HAR Library Edit	HAR Library Edit grants the operators the ability to add, modify and delete messages from the HAR library
HAR Library Use	HAR Library Use grants the operators the ability to use messages from the HAR library
READ	READ grants the user read only privileges throughout the system
Reporting	Reporting grants the operator the privilege to run reports
RMC Manual Control	RMC Manual Control grants operators the ability to control the ramp meters
RMC Inventory Edit	RMC Inventory Edit grants operators access to add, modify, and delete devices in the equipment database.
TT Admin	TT Admin allows the operator to add, modify and delete travel time paths/targets and to associate/disassociate travel time paths/targets with a DMS.
TT Data Collector	Not an operator access privilege. This permission is used to grant third parties access to the data feed.
VDS Data Collector	Not an operator access privilege. This permission is used to grant third parties access to the data feed.
VDS Inventory Edit	VDS Inventory Edit grants operators access to add, modify, and delete VDS stations in the equipment database.

Managing Group Priorities

Priorities can be placed on user groups so that a group of operators can be placed at a higher priority than others. This feature is especially important in camera locking. An operator with CCTV control privileges can 'lock' a camera to prevent it from being manipulated (e.g. Zoomed or panned) while the camera is viewing something important. Others may view the video from the camera, but are not able to move the camera. This 'lock' on the camera can be overridden by an operator in a higher priority group (i.e. a supervisor). The management of these group priorities is accomplished through the Priorities link on the Administration window as shown in Figure 8.

FIGURE 8: ADMINISTRATION WINDOW: PRIORITIES PANEL

To move priorities around:

a) Click on the Administration link in the upper menu bar
b) Click on the *Priorities* link in the Switcher Bar
c) Highlight the group you wish to move
d) Click on the *Increase Priority* button to move the group up in the list
e) Click on the *Decrease priority* button to move the group lower on the list
f) Click the *Save Priorities List* button to save the list

Managing Software Configuration

The ICMS Administrator has the ability to configure certain aspects of the ICMS application. See Table 5 for a list of available options.

Managing System Properties

The Properties panel allows the user to add, modify, or delete system properties directly from the database. Examples of these properties include such items as VDS thresholds, polling intervals and security settings.

Note: These modifications can have serious consequences on the operation of the system, so they must be done by experienced personnel only.

To access the *Properties* panel, open the Administration window by clicking on the *Administration* link in the upper menu bar. Then click on the *Properties* link in the lower switcher bar. Figure 9 displays a list of the system properties.

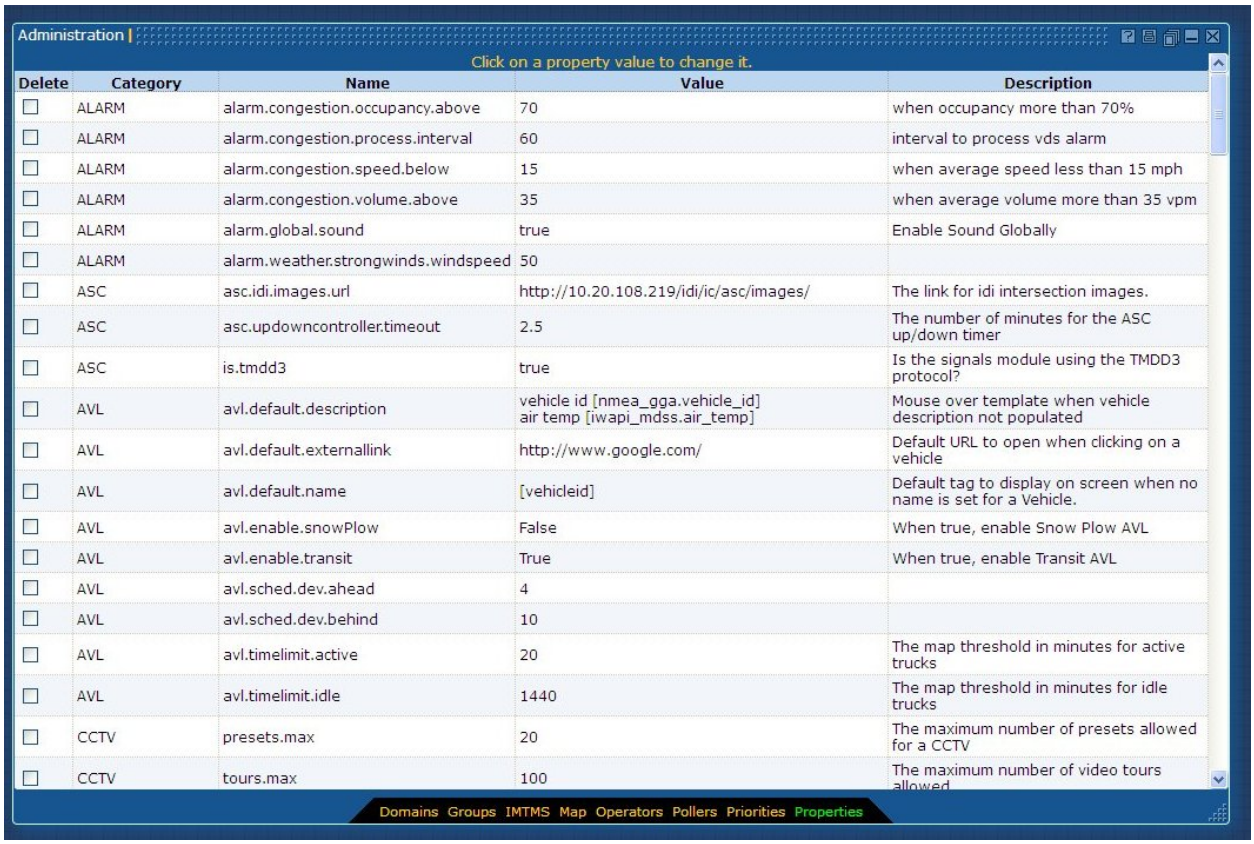


FIGURE 9: ADMINISTRATION WINDOW: PROPERTIES PANEL

The Admin properties vary based on deployed modules and features. This section denotes the admin properties for a typical full system deployment.

TABLE 5: SYSTEM PROPERTIES

Module	Name	Sample Value	Description
Alarm	alarm.congestion.occupancy.above	70.0	The occupancy value above which an alarm is raised
Alarm	alarm.congestion.process.interval	60.0	The interval to process a VDS alarm
Alarm	alarm.congestion.speed.below	15.0	The speed below which an alarm is raised

Module	Name	Sample Value	Description
Alarm	alarm.congestion.volume.above	35.0	The volume value above which an alarm is raised
Alarm	alarm.global.sound	false	Enables the sound for alarms. This is a system-wide (global) setting.
Alarm	weather.strongwinds.windspeed	70.0	The windspeed value above which an alarm is raised
AVL	avl.default.description	vehicle id [nmea_gga.vehicle_id] air temp [iwapi_mdss.air_temp]	Mouse over template when vehicle description not populated
AVL	avl.default.externallink	http://www.google.com/	Default URL to open when clicking on a vehicle
AVL	avl.default.name	[vehicleid]	Default tag to display on screen when no name is set for a Vehicle.
AVL	avl.timelimit.active	20	The map threshold in minutes for active trucks
AVL	avl.timelimit.idle	1440	The map threshold in minutes for idle trucks
CCTV	camera.auth_user	xxxxx:xxxxx	username:password for cameras that require security access
CCTV	presets.max	10	The maximum number of presets allowed for a CCTV
CCTV	tours.max	100	The maximum number of video tours allowed for a CCTV
CCTV	video.archive.enabled	false	Set to true if video archive feature is available.
CCTV	video.omnicast.enabled	true	Set to true if Genetec Omnicast is used for Video viewing and control

Module	Name	Sample Value	Description
CCTV	video.omnicast.gateway	nn.nn.nn.nn	Default Genetec Omnicast System Gateway IP or hostname
CCTV	video.output.enabled	false	Set to true if Video Outputs are needed
CCTV	video.playerSelector.enabled	true	Allows the user to select a video player
CCTV	video.publicSnapshot.enabled	false	Set to true if Traveler Information Snapshot Server is available
CCTV	video.snapshot.enabled	false	Set to true if Delcan Video Server is available to capture snapshots
CCTV	video.snapshot.filename	'snapshot-%n 'yyyy-MM-dd HH-mm'.jpg'	Default snapshot filename: %n=Name %i=ID %r=Road %x=xroad SimpleDateFormat
CCTV	videowall.dimensions	3,3	Dimensions x,y of the video wall monitor grid.
CCTV	videowall.vendor.type	barco	Vendor for Video wall display
Contact	contact.mir3.division	/Nebraska Department of Roads	Contact information service: MIR-3 inWebServices root division
Contact	contact.mir3.group	NDOR-NETworks Alert	Contact information service: MIR-3 inWebServices recipient group
Contact	contact.mir3.password	*****	Contact information service: MIR-3 inWebServices password
Contact	contact.mir3.url	https://inwebservices.mir3.com	Contact information service: MIR-3 inWebServices endpoint
Contact	contact.mir3.username	*****	Contact information service: MIR-3 inWebServices username

Module	Name	Sample Value	Description
DMS	dms.font.sizing	N	Font sizing enabled (Y) or disabled (N)
DMS	dms.history.enabled	N	DMS History enabled (Y) or disabled (N)
DMS	dms.idi.url	http://nn.nn.nn.nn:5500/idi/ic/dms	The link for dms wysiwyg image generation
DMS	library.categories.entries.max	5	Maximum message allowed in each library category
ESS	ess.airtemperature.change	32.0	Map Thresholds – Air temperature change
ESS	ess.bridgetemperature.change	32.0	Map Thresholds – Bridge temperature change
ESS	ess.data.expiry	60	The number of minutes after which sensor data is considered stale
ESS	ess.depthunits	In	Units for measuring depth: millimeters (mm); centimeters (cm); inches (in)
ESS	ess.dflt.operation	permanent	The default ESS station operation type
ESS	ess.dflt.protocol	atms/ejb/protocol/ssi/v1.0	The default ESS protocol ID
ESS	ess.dflt.vendor	SSI	The default ESS vendor
ESS	ess.pollinterval	10	Polling interval, in minutes: 1 once every 0-60 seconds
ESS	ess.precipitationaccumulation	in	Units measured: millimeters (mm); centimeters (cm); inches (in)
ESS	ess.precipitationrate	iph	Units of measure: mmph, cph, iph
ESS	ess.scanserver	location	The location(s) for the weather scan server(s)
ESS	ess.subsurfacetemperature.change	32.0	Map thresholds – sub surface temperature change

Module	Name	Sample Value	Description
ESS	ess.surfacetemperature.change	32.0	Map thresholds – all surface temperature below freezing
ESS	ess.temperatureunits	F	Temperature units in degrees Fahrenheit (F), Celcius (C)
ESS	ess.timezone.display	GMT	The time zone for UI display of ESS timestamps
ESS	ess.visibilityunits	m	Visibility units of measure: kilometers (km), miles (m)
ESS	ess.waterlevelunits	ft	Units measuring water level: millimeters (mm), meters (m), inches (in), feet (ft)
ESS	ess.windspeeds	MPH	Units for measuring wind speed: km/hr, mph
Event	event.datetime.format	MM/dd/yyyy HH:mm	The UI date/time for mat for event times
Event	event.default.state	AL	The default state for an event
Event	event.states.inactive	false	True if setting event status to inactive when end time is reached
Eve nt	event.termination.timeout	15	Tiimeout in minutes after which the terminated event is cleared from the cache
HAR	har.demo	false	If true, turn on HAR UI demo
HAR	tts.url	http://nn.nn.nn.nn/tts/TTSservlet	The URL to the text to speech servlet
Help	help.url	http://nn.nn.nn.nn/r7_1_help	The URL to the application help
Map	map.default	Georgia:285 shield	Default map view
RMC	rarm.crm.cfg.defaultmax	1000	Default max rate
RMC	rarm.crm.cfg.defaultmin	450	Default min rate
RMC	rarm.crm.cfg.propfactor	0.5	0.1 to 0.9 Propagation Factor

Module	Name	Sample Value	Description
RMC	rarm.crm.cfg.smoothfactor	0.7	0.2 to 1.0 Smooth Factor
RMC	rarm.crm.cfg.speedmax	55	Max speed mph (50-65)
RMC	rarm.crm.cfg.speedmin	30	Min speed mph (20-45)
RMC	rarm.crm.cfg.turnoff.th	10	Turn Off Meter Threshold (2-15)
RMC	rarm.crm.cfg.turnon.th	2	Turn On Meter Threhsold (1-10)
RMC	rarm.fmcfg.fail.persist	5	Fail Persist
RMC	rarm.fmcfg.hi.o.fail	50	High Occupancy Fail Threshold
RMC	rarm.fmcfg.hi.o.repair	30	High Occupancy Repair Threshold
RMC	rarm.fmcfg.low.o.fail	1	Low Occupancy Fail Threshold
RMC	rarm.fmcfg.low.o.repair	3	Low Occupancy Repair Threshold
RMC	rarm.fmcfg.repair.persist	2	Repair Persist
RMC	rmc.data.expiry	5	The number of minutes after which status and plan data is considered stale
RMC	rmc.dayplan.1	Weekday(1)	Human readable mnemonic for a Day Play ID
RMC	rmc.dayplan.2	Weekday(2)	Human readable mnemonic for a Day Play ID
RMC	rmc.dayplan.3	Emergency(3)	Human readable mnemonic for a Day Play ID
RMC	rmc.dayplan.4	Holiday(4)	Human readable mnemonic for a Day Play ID
RMC	rmc.dayplan.5	Special Event(5)	Human readable mnemonic for a Day Play ID
RMC	rmc.showftctab	false	If true, enable the FTC tab in the viewer

Module	Name	Sample Value	Description
RMC	rmc.timestamp.format	yyyy/MM/dd HH:mm	UI display format for time stamps
Security	authentication.source	db	Authentication source: ldap (for LDAP systems) db for (database)
Security	category.branding.label	Groups	The deployment localization for the security category label
Security	category.branding.title	Group	The deployment localization for the security category title
Security	change.password.link	http://localhost:8090/selfService.html?username=	If the authentication source is LDAP, then this link will allow you to change your password
Security	session.timeout.secs	43200	The number of seconds before a user http session is automatically closed
Security	userjoin.email.body	Welcome to NETworks ATMS!	The body for initial email to a user
Security	userjoin.email.host	mail.nateng.com	The SMTP host
Security	userjoin.email.sender	c.cleary@delcan.com	The sender for initial email to a user
Security	userjoin.email.subject	Welcome to NETworks ATMS	The subject for the initial email to a user
Security	userjoin.email.subject.change	NETWorks ATMS: Account Information Updated	The subject for account change emails
Security	userjoin.email.tonotify	c.cleary@delcan.com	The email address for notification of user join
System	map.googlelink	true	Unless false, map frame has link to google maps satellite imagry
System	system.poll.interval	2000	Interval between poll attempts in milliseconds
System	system.poll.method	long	long or short http polling; default is long
System	system.unit	English	English or Metric unit

Module	Name	Sample Value	Description
TSS	asc.idi.images.url	http://nn.nn.nn.nn	The link for IDI intersection images.
TSS	asc.updowncontroller.timeout	2.5	The number of minutes for the ASC up/down timer
VDS	vds.data.expiry	3	The number of minutes after which detector data is considered stale
VDS	vds.map.nomarker	false	If true, there is a tile generator out there, suppress client side marker layer
VDS	vds.speedthreshold.high	50	The boundary between yellow and green traffic conditions
VDS	vds.speedthreshold.low	25	The boundary between yellow and red traffic conditions
VDS	vds.timezone.display	America/Los_Angeles	The time zone for UI display of VDS timestamps.

Adding a new system property

Note: This feature is in place mainly to support low level system changes, such as in the installation of future core product changes.

To add a new system property:

a) Open the *Properties* Panel by clicking on the *Properties* link in the lower switcher bar of the Administration window.
b) Press the *Add Record* button.
c) Enter the Category, Name, Value, and the Description for the field.
d) Press the *Save* button.

Modifying a system property

To modify the value of an existing system property:

a) Open the Properties Panel by clicking on the *Properties* link in the lower switcher bar of the Administration window.
b) Select the Value to modify.
c) Enter the desired information.
d) Press the *Save* button.

Deleting a system property

To delete a system property:

a) Open the Properties Panel by clicking on the *Properties* link in the lower switcher bar of the Administration window.
b) Check the checkbox under the Delete column for the record to be deleted.
c) Press the *Delete* button.

Note: The deletion of a system property can have serious consequences on the operation of the system. Only experienced personnel should execute this task.

Managing Domains

The Domains panel allows the user to add, modify, or delete system values directly from the database. The Domains are mainly used to provide user options in drop-down lists. Examples of these fields include such items as vendor names, vendor protocols, and communication ports. Table 6 lists the parameters available.

Note: These modifications can have serious consequences on the operation of the system, so they must be done by experienced personnel only.

To access the Domains panel, open the Administration window by clicking on the *Administration* link in the upper menu bar. Then click on the *Domains* link in the lower switcher bar. Figure 10 will appear.

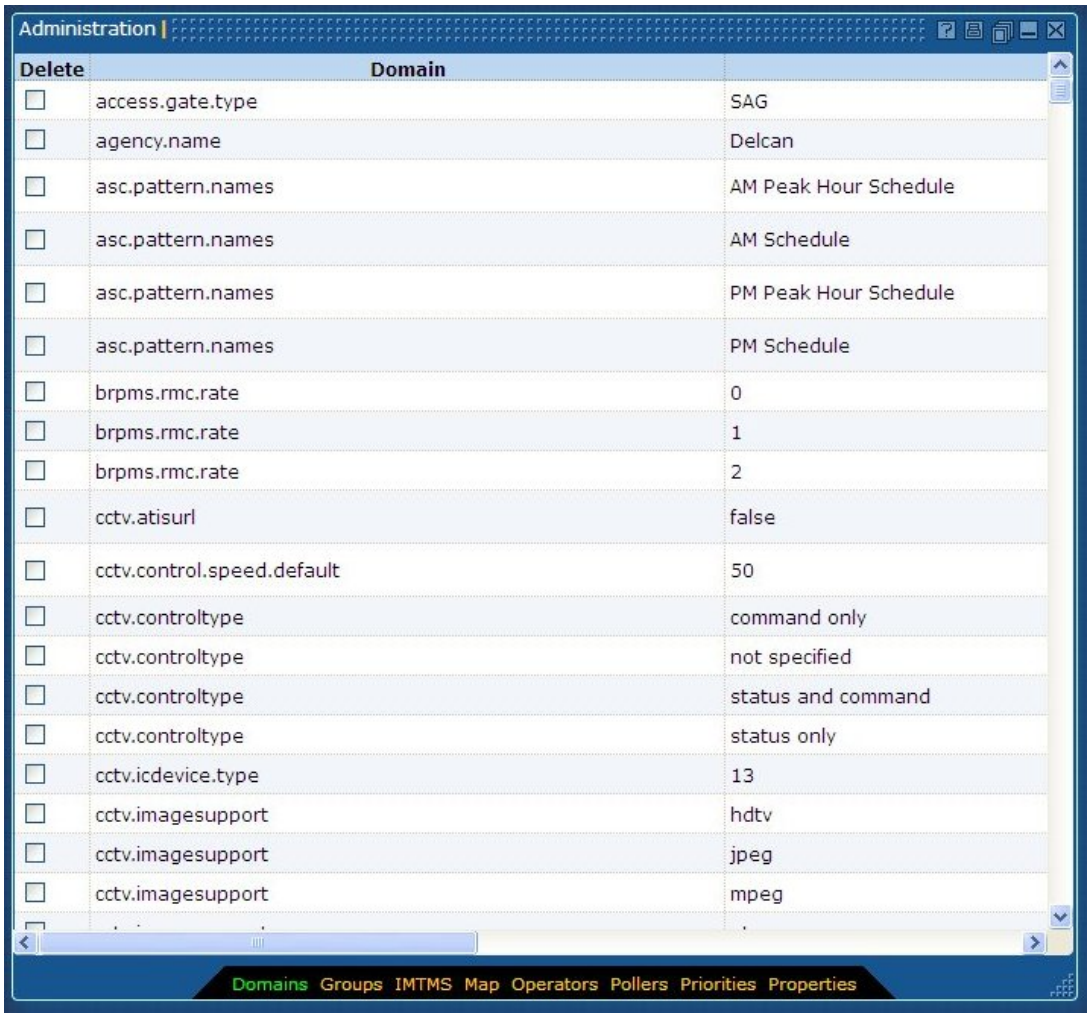


FIGURE 10: ADMINISTRATION WINDOW: DOMAINS PANEL

The Admin Domains vary based on deployed modules and features. This section denotes the admin domains for a typical full system deployment.

TABLE 6: SYSTEM DOMAINS

Module	Name	Sample Value	Description
Alarms	notification.alarm.type	Freezing	Types of alarm notifications, one for each type: Freezing
Alarms	notification.alarm.type	Freezing Rain	Freezing Rain
Alarms	notification.alarm.type	Snow Ice Warning	Snow Ice Warning
Alarms	notification.condition.type	Wet Below Freezing	Types of notification conditions, one for each type: Wet Below Freezing condition
Alarms	notification.condition.type	Event Creation	Event has been created
Alarms	notification.condition.type	Event Confirmation	Event has been confirmed
Alarms	notification.condition.type	Event Modification	Event has been modified
Alarms	notification.condition.type	Event Termination	Event has been terminated
Alarms	notification.condition.type	Response Plan Activation	Response Plan has been activated
Alarms	notification.condition.type	Response Plan Termination	Response Plan has been terminated
CCTV	cctv.control.speed.default	50	Initial CCTV slider speed 0-100
CCTV	cctv.controltype	command only	CCTV control type
CCTV	cctv.controltype	not specified	CCTV control type
CCTV	cctv.controltype	status and command	CCTV control type
CCTV	cctv.controltype	status only	CCTV control type
CCTV	cctv.icdevice.type	13	Camera device type: CAMERA_COHU
CCTV	cctv.imagesupport	jpeg	Types of images supported. Create one entry for each type. Others types include: hdtv, mpeg, ntsc, pal, secam, tiff
CCTV	cctv.protocol	atms/ejb/protocol/axis/vapix/v1.0	Axis Encoder PTZ control
CCTV	cctv.protocol	atms/ejb/protocol/cohu/mpc422pro/v1.0	Cohu PMC Pro
CCTV	cctv.protocol	atms/ejb/protocol/cohu/v1.0	Cohu iView
CCTV	cctv.protocol	atms/ejb/protocol/cohu/v2.0	Cohu iViewIP
CCTV	cctv.protocol	atms/ejb/protocol/idi/ic/1205/v1.0	Intelligent Devices 1205
CCTV	cctv.protocol	atms/ejb/protocol/ntcip/1205/NoResponse/v1.0	NTCIP 1205 No Status
CCTV	cctv.protocol	atms/ejb/protocol/ntcip/1205/Optelecom/v1.0	NTCIP 1205 Optelecom Framing

Module	Name	Sample Value	Description
CCTV	cctv.protocol	atms/ejb/protocol/ntcip/1205 /v1.0	NTCIP 1205
CCTV	cctv.protocol	atms/ejb/protocol/pelco/9760 /v1.0	Pelco 9760
CCTV	cctv.protocol	atms/ejb/protocol/pelco/D/v1 .0	Pelco D
CCTV	cctv.protocol	atms/ejb/protocol/pelco/rs422 /v1.0	Pelco RS422
CCTV	cctv.protocol	atms/ejb/protocol/tycoad/v1.0	American Dynamics
CCTV	cctv.vendor.active	American Dynamics	Create one entry for each vendor that is active
CCTV	cctv.vendor.inactive	Sony	Create one entry for each inactive vendor
CCTV	switch.vendor.active	atms/ejb/protocol/cybermation /v1.0	Create one entry for each active switch vendor Cybermation
CCTV	switch.vendor.active	atms/ejb/protocol/pelco/9760 /v1.0	Pelco
CCTV	switch.vendor.active	atms/ejb/protocol/tycoad/v1.0	American Dynamics
CCTV	tours.transition	05	Transition time in seconds for CCTV tours, one for each time interval
CCTV	tours.transition	10	Transition time in seconds for CCTV tours
CCTV	tours.transition	15	Transition time in seconds for CCTV tours
Comm	comm..msg.type	PMPP	PMPP message type
Comm	comm..msg.type	SNMP	SNMP message type
Comm	comm.type	Dial-up	Dial-up communications
Comm	comm.type	File	File URI
Comm	comm.type	Serial	Serial port
Comm	comm.type	TCP	TCP Socket
Comm	comm.type	UDP	UDP Socket
DAR	report.archive.rate.minutes	30	Rate the data is archived
DAR	report.device.max.days	30	Number of days a report can be run for a device
DAR	report.ess.all.max.days	1	Number of days a report can be run for all ESS devices
DAR	report.footer	San Diego Association of Governments	Text for report footer
DAR	report.max.days	120	Maximum days any report can be run

Module	Name	Sample Value	Description
DAR	reports.url.config	http://nn.nn.nn.nn/ReportServer?/	URL of report server
DAR	report.vds.15min.max.days	5	Maximum days a 15 minute VDS report can be run
DAR	report.vds.5min.max.days	4	Maximum days a 5 minute VDS report can be run
DAR	report.vds.daily.max.days	1096	Maximum days a daily VDS report can be run
DAR	report.vds.hourly.max.days	92	Maximum days an hourly VDS report can be run
DAR	report.vds.raw.max.days	15	Maximum days a RAW VDS report can be run
DMS	dms.beacon.type	1	Define each DMS beacon type other
DMS	dms.beacon.type	10	fourBeaconNoSyncFlash
DMS	dms.beacon.type	11	oneBeaconStrobe
DMS	dms.beacon.type	12	twoBeaconStrobe
DMS	dms.beacon.type	13	fourBeaconStrobe
DMS	dms.beacon.type	2	none
DMS	dms.beacon.type	3	oneBeacon
DMS	dms.beacon.type	4	twoBeaconSyncFlash
DMS	dms.beacon.type	5	twoBeaconOppFlash
DMS	dms.beacon.type	6	fourBeaconSyncFlash
DMS	dms.beacon.type	7	fourBeaconAltRowFlash
DMS	dms.beacon.type	8	fourBeaconAltColumnFlash
DMS	dms.beacon.type	9	fourBeaconAltDiagonalFlash
DMS	dms.char.max	1	17 characters maximum
DMS	dms.char.max	3	15 characters maximum
DMS	dms.char.max.default	2	21 characters default maximum
DMS	dms.font.size	2	5x7 font size
DMS	dms.font.size	3	6x9 font size
DMS	dms.font.size.default	1	4x6 font size
DMS	dms.icdevice.type	1	Define each device type VMS
DMS	dms.icdevice.type	10	VMS_ADAPTIVE
DMS	dms.icdevice.type	11	VMS_VERMAC
DMS	dms.icdevice.type	12	VMS_DRUM

Module	Name	Sample Value	Description
DMS	dms.icdevice.type	2	VMS_DISP
DMS	dms.icdevice.type	3	VMS_SYLVIA
DMS	dms.icdevice.type	4	VMS_VULTRON
DMS	dms.icdevice.type	5	VMS_SKYLINE
DMS	dms.icdevice.type	6	VMS_SKYLINEDRUM
DMS	dms.icdevice.type	7	VMS_DAK
DMS	dms.icdevice.type	8	VMS_LEDSTAR
DMS	dms.icdevice.type	9	VMS_UST
DMS	dms.library.category	all purpose	Name of each type of message in the DMS library All Purpose
DMS	dms.library.category	public service announcements	Public Service Announcements
DMS	dms.library.category	roadwork/construction	Roadwork/Construction
DMS	dms.library.category	weather	Weather
DMS	dms.message.type	PMPP	PMPP message type
DMS	dms.message.type	SNMP	SNMP message type
DMS	dms.phase.off.default	0.0	Default phase off
DMS	dms.phase.off.max	25.5	Phase off maximum
DMS	dms.phase.off.min	0.0	Phase off minimum
DMS	dms.phase.on.default	3.0	Default phase on
DMS	dms.phase.on.max	25.5	Phase on maximum
DMS	dms.phase.on.min	0.1	Phase on minimum
DMS	dms.protocol	atms/ejb/protocol/idi/ic/1203/v2.0	DMS protocols Intelligent Device 1203
DMS	dms.protocol	atms/ejb/protocol/ntcip/1203/v1.0	NTCIP protocol
DMS	dms.sign.type	BOS	DMS sign types Blank out sign
DMS	dms.sign.type	CMS	Changeable message sign
DMS	dms.sign.type	VMS	Variable message sign
DMS	dms.sign.type	portable VMS	Portable VMS
DMS	dms.vendor.active	Daktronics	DMS Active vendors, one for each vendor Daktronics
DMS	dms.vendor.active	USTraffic	USTraffic

Module	Name	Sample Value	Description
DMS	dms.vendor.inactive	American	DMS Inactive vendors, one for each vendor American
DMS	dms.vendor.inactive	Addco	Addco
ESS	ess.icdevice.type	16	ESS
ESS	ess.operation.type	mobile	Types of ESS, one for each type mobile
ESS	ess.operation.type	other	other
ESS	ess.operation.type	permanent	permanent
ESS	ess.operation.type	transportable	transportable
ESS	ess.protocol	atms/ejb/protocol/ssi/v1.0	ESS protocol
ESS	ess.vendor	SSI	Active ESS vendor SSI
Event	events.states	Alarmed	Event in alarmed state
Event	events.states	Confirmed	Event in confirmed state
Event	events.states	Terminated	Event has been terminated
Event	events.states	Unconfirmed	Event has not been confirmed
Event	events.types	Scheduled	Scheduled event type
Event	events.types	Unscheduled	Unscheduled event type
Event	events.types.scheduled	Planned	Types of Scheduled Events, one for each type Planned
Event	events.types.scheduled.planned	Accident Investigation	Accident Investigation
Event	events.types.scheduled.planned	Construction	Construction
Event	events.types.scheduled.planned	Maintenance Activity	Maintenance Activity
Event	events.types.scheduled.planned	Rolling Closure	Rolling Closure
Event	events.types.scheduled.planned	Special Event	Special Event
Event	events.types.unscheduled	Accident	Types of unscheduled events, one for each type Accidents
Event	events.types.unscheduled	Debris	Debris
Event	events.types.unscheduled	Fire	Fire
Event	events.types.unscheduled	Infrastructure	Infrastructure
Event	events.types.unscheduled	Stall	Stall
Event	events.types.unscheduled	Unplanned	Unplanned
Event	events.types.unscheduled	Weather	Weather

Module	Name	Sample Value	Description
Event	events.types.unscheduled.accident	AID event	Event determined by AID algorithm
Event	events.types.unscheduled.accident	Crash	Crash
Event	events.types.unscheduled.accident	HazMat Spill	HazMat spill
Event	events.types.unscheduled.accident	Other	Other
Event	events.types.unscheduled.debri	Dead Animal	Dead Animal
Event	events.types.unscheduled.debris	Mattress	Mattress
Event	events.types.unscheduled.debris	Tire/Tire Tread	Tire/Tire Tread
Event	events.types.unscheduled.fire	Other	Other
Event	events.types.unscheduled.fire	Structural	Structural fire
Event	events.types.unscheduled.fire	Vehicle	Vehicle fire
Event	events.types.unscheduled.infrastructure	Bridge Closure	Bridge Closure
Event	events.types.unscheduled.infrastructure	Downed Utility Lines	Downed Utility Lines
Event	events.types.unscheduled.stall	Lane(s) blocked	Lane(s) blocked
Event	events.types.unscheduled.stall	No Lanes Blocked	No Lanes Blocked
Event	events.types.unscheduled.unplanned	Live Animal	Live Animal
Event	events.types.unscheduled.unplanned	Police Activity	Police activity
Event	events.types.unscheduled.weather	Dense Fog	Dense Fog
Event	events.unscheduled.severities	1	Event is of low severity
Event	events.unscheduled.severities	2	Event is of medium severity
Event	events.unscheduled.severities	3	Event is of high severity
Map	map.basemap	{"bounds":[-117.6,32.55,-116,33.55],"scales":[750000,400000,200000,125000,75000,35000,17500,12000,7500,2500],"tile_engine_url":"http://nw-test.eng.nateng.com/maptiles/SanDiego/def/"}	Technical definition of each basemap San Diego, CA basemap

Module	Name	Sample Value	Description
Map	map.basemap	{"bounds":[-75.62,38.85,-73.7,41.43],"scales":[2000000,750000,400000,200000,125000,75000,35000,17500,12000,7500],"tile_engine_url":"http://nw-test.eng.nateng.com/maptiles/NewJersey/def/","copyright":"DM Solutions Group Inc"}	New Jersey basemap
Map	map.shortcut	NewJersey:3:-74.684128340848:41.160533573594:645:583	Map shortcut technical definition, one for each shortcut
RMC	rmc.icdevice.type	15	Device type: Intelligent Devices NTCIP 1207
RMC	rmc.protocol	atms/ejb/protocol/idi/ic/1207/v1.0	Device protocol types, one for each type IDI device protocol
RMC	rmc.protocol	atms/ejb/protocol/ntcip/1207/v1.0	NTCIP protocol
RMC	rmc.protocol	atms/ejb/protocol/cybermation/v1.0	Cybermation protocol
RMC	rmc.protocol	atms/ejb/protocol/pelco/9760/v1.0	Pelco protocol
RMC	rmc.protocol	atms/ejb/protocol/tycoad/v1.0	American Dynamics protocol
System	location.cities	Ashbury	Name of city, one for each city City of Ashbury
System	location.cities	Auburn	City of Auburn
System	location.counties	Appling	Name of county, one for each county County of Appling
System	location.counties	San Diego	County of Atkinson
System	location.dir	E	Location direction, one for each direction East
System	location.dir	N	North
System	location.dir	S	South
System	location.dir	W	West
System	location.dir.device	E	Location direction for devices East
System	location.dir.device	N	North
System	location.dir.device	S	South
System	location.dir.device	W	West
System	location.districts	D1 Gainesville	District names, one for each district District of Gainesville

Module	Name	Sample Value	Description
System	location.districts	D2 Tennille	District of Tennille
System	location.states	AK	State names, one for each state Alaska
System	location.states	AL	Alabama
System	location.type	Arterial	Types of location, one for each type Arterial
System	location.type	Intersection	Intersection
System	location.type	Interstate	Interstate
System	location.type	Ramp	Ramp
System	location.type	State Highway	State Highway
System	location.type	Toll Road	Toll Road
System	location.type	Tunnel	Tunnel
System	location.type	U.S. Highway	U.S. Highway
System	agency.name	Delcan	The name for the agency
System	equipment.type	CCTV	Equipment types, one for each type CCTV
System	equipment.type	DMS	DMS
System	equipment.type	HAR	HAR
System	equipment.type	RMS	RMS
System	equipment.type	Traffic Signal	Traffic Signal
System	equipment.type	VDS	VDS
System	equipment.type	Video Switch	Video Switch
TSS	asc.pattern.names	AM Peak Hour Schedule	Traffic pattern name; create one for each pattern. Other names could include: AM Schedule, PM Peak Hour Schedule
VDS	vds.icdevice.type	14	Device Type: VDS
VDS	vds.protocol	atms/ejb/protocol/cellint/v1.0	Device Protocol, one for each type Cellint
VDS	vds.protocol	atms/ejb/protocol/idi/ic/1209/v1.0	Intelligent Devices 1209
VDS	vds.protocol	atms/ejb/protocol/infotek/ilda/v1.0	InfoTek Wizard
VDS	vds.protocol	atms/ejb/protocol/inrix/v1.0	Inrix
VDS	vds.protocol	atms/ejb/protocol/ntcip/1209/v1.0	NTCIP 1209 V1.0

Module	Name	Sample Value	Description
VDS	vds.protocol	atms/ejb/protocol/ntcip/1209/v2.0	NTCIP 1209 V2.0
VDS	vds.protocol	atms/ejb/protocol/rtms/sidefire/v1.0	EIS RTMS Sidefire
VDS	vds.type	inductive_loop	Types of VDSs, one for each type inductive loop
VDS	vds.type	infrared	infrared
VDS	vds.type	laser	laser
VDS	vds.type	magnetic	magnetic
VDS	vds.type	magnetometers	magnetometers
VDS	vds.type	microwave_radar	Microwave radar
VDS	vds.type	pressure_cells	pressure cells
VDS	vds.type	road_tube	road tube
VDS	vds.type	ultrasonic	ultrasonic
VDS	vds.type	video_image	video image

Adding a new system domain

To add a new system domain:

a) Open the *Domains* Panel by clicking on the *Domains* link in the lower switcher bar of the Administration window.
b) Press the *Add Record* button.
c) Enter the Domain, Value, and the Description for the field.
d) Press the *Save* button.

Modifying a system domain

To modify the value of an existing system domain:

a) Open the *Domains* Panel by clicking on the Domains link in the lower switcher bar of the Administration window.
b) Select the Value to modify.
c) Enter the desired information.
d) Press the *Save* button.

Deleting a system domain

To delete a system domain:

a) Open the Domains Panel by clicking on the *Domains* link in the lower switcher bar of the Administration window.
b) Check the checkbox under the Delete column for the record to be deleted.
c) Press the *Delete* button.

Note: The deletion of a system domain can have serious consequences on the operation of the system. Only experienced personnel should execute this task.

Managing Map Shortcuts

On the main Map window in the lower right corner, there is a drop-down list of available map shortcuts where the operator can switch the view. Figure 11 shows an example of the drop-down map selection. These map shortcuts are configurable by the ICMS Administrator. This feature requires the use of the main Map window and the Admin/Map tool.

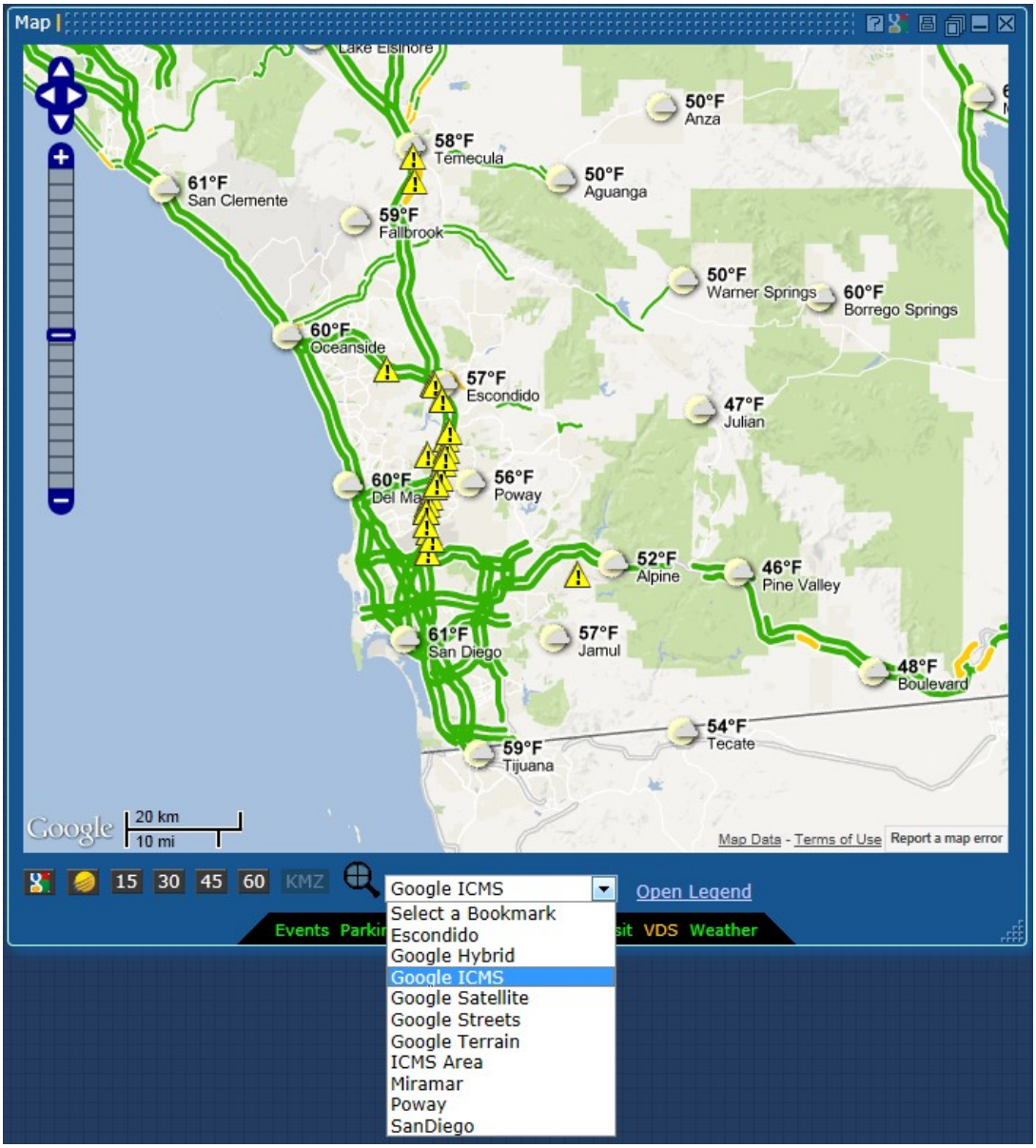


FIGURE 11: MAIN MAP WINDOW: MAP SHORTCUT DROP-DOWN

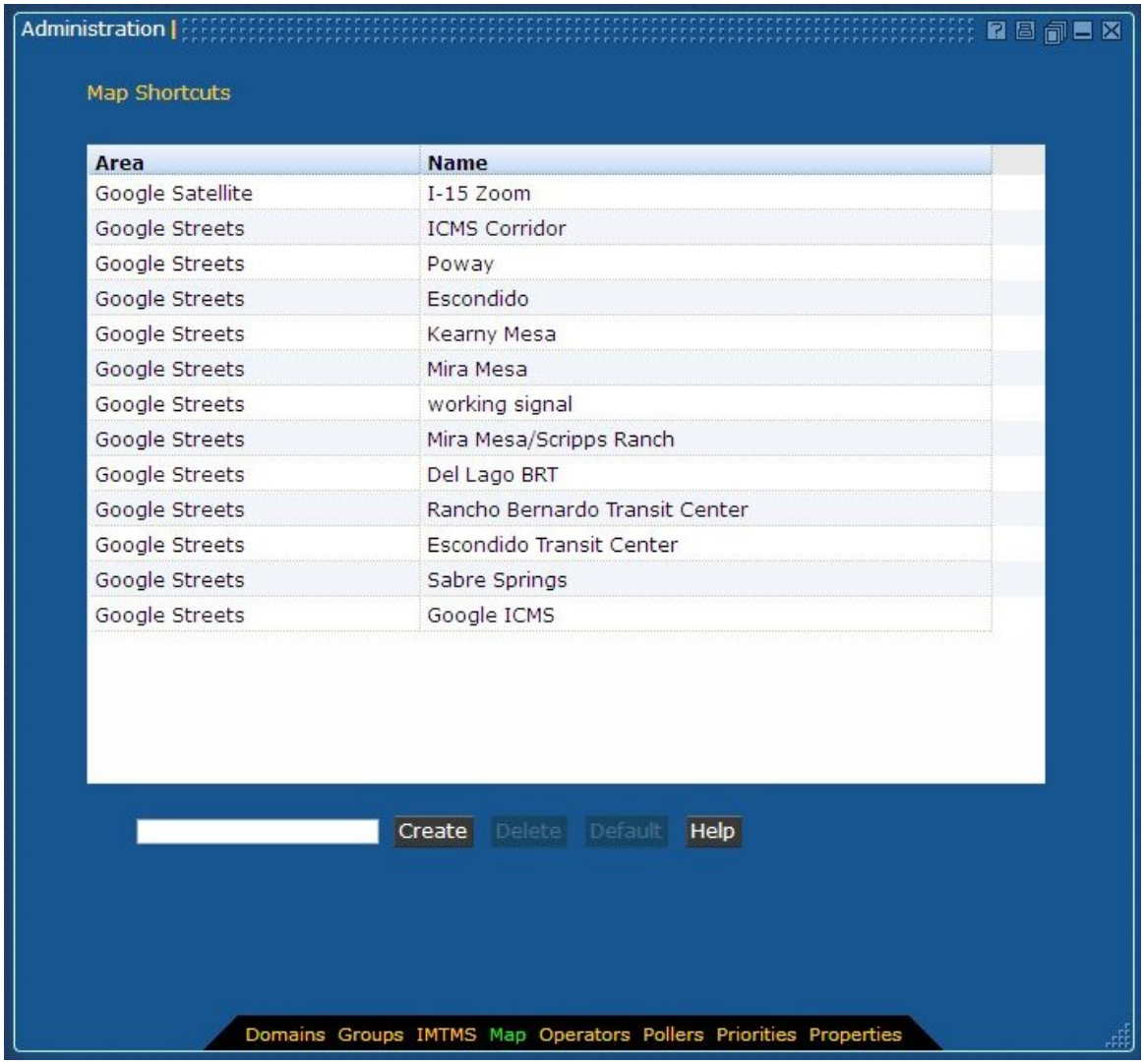


FIGURE 12: ADMINISTRATION MAP TOOL

To create a new map shortcut:

a) Click on the *Map* link in the upper menu bar to open a Map window
b) Using the map manipulation tools, size and focus the map to the view/area desired
c) Move the map window aside
d) Click on the *Administration* link in the upper menu bar to open an Admin window
e) Click on the *Map* link in the Switcher bar. A list of existing map shortcuts will appear.
f) Enter a name for the new map shortcut that is currently being displayed on the main map window
g) Click the *Create* button. This will create a new map shortcut on the main map window.

To delete a map shortcut:

a) Click on the *Administration* link in the upper menu bar to open and Admin window
b) Click on the *Map* link in the Switcher bar. A list of existing map shortcuts will appear.
c) Select a map shortcut from the list
d) Click the *Delete* button. This will remove map shortcut from the main map window.

Managing Device and Data Pollers

Device and Data Pollers are small programs that are enabled to feed information to the ICMS. The Device Pollers communicate directly to specific devices such as DMS or cameras. The Data Pollers either retrieve or calculate data for feeding to the ICMS.

The Administration/Pollers window is divided into 3 parts: Device Pollers, Data Pollers, and CCTV Scheduled Preset. In Figure 13 below, 2 Device Pollers are active: CCTV and DMS. For Data Pollers, Travel Times and the VDS data feed are active. The CCTV Scheduled Preset Poller is not active.

To access the Pollers window:

a) Click on the *Administration* link in the upper menu bar
b) Click on the *Pollers* link in the Switcher Bar.

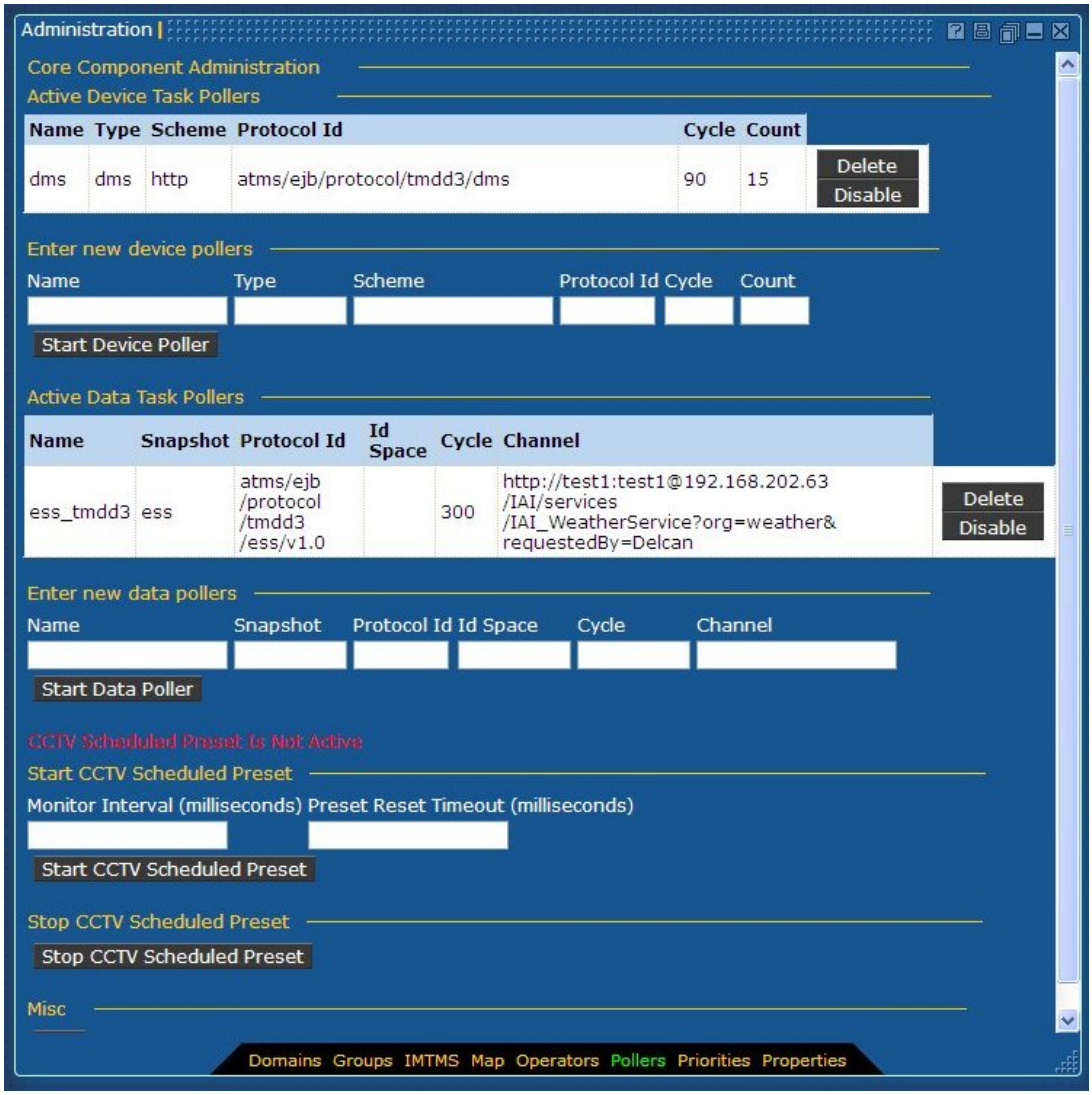


FIGURE 13: ADMINISTRATION WINDOW/POLLERS

Starting a New Poller

A Poller must be started in order for it to function.

To start a new device poller:

a) Enter the required information (Name, Type, Scheme, Protocol Id, Cycle and Count)
b) Click on the *Start Device Poller* button

To start a new data poller:

a) Enter the required information (Name, Snapshot, Protocol Id, Id Space, Cycle and Channel)
b) Click on the *Start Data Poller* button

To start the Scheduled CCTV Preset poller:

a) Enter the Monitor Interval in milliseconds
b) Enter the Preset Reset Timeout in milliseconds
c) Click on the *Start CCTV Scheduled Preset* button

Disabling a Poller

Disabling a data or device poller stops the poller from executing, but does not remove it from the system.

To stop a data or device poller:

a) Click the *Disable* button corresponding to the poller that is to be stopped.

To stop the CCTV Scheduled Preset poller:

a) Click the *Stop CCTV Scheduled Preset* button.

Deleting a Poller

Deleting a data or device poller stops the poller from executing and removes it from the system. Use caution when deleting a poller from the system. The only way to retrieve it is to enter it as a new poller.

To delete a data or device poller:

a) Click the *Delete* button corresponding to the poller that is to be removed.

Managing Inventory

The Inventory windows are the configuration windows of the system, allowing access to user-defined and manufacturer-defined information stored in database tables. All hardware listed in the database can be modified or deleted from the system by permitted operator using an Inventory window. New hardware can be added to the database from an Inventory window.

An Inventory window can be opened by clicking on the Inventory link in the upper menu bar on the ICMS browser window. A default Inventory window contains a switcher bar with the equipment types for the ICMS installation highlighted in yellow. Clicking on a particular equipment type in the switcher bar will either open the Inventory display for the first listed ID of that type in the database or a blank entry form for that type, depending on the privileges assigned to the user.

Dragging an icon from the Map window or a List window and dropping that icon onto any Inventory window will open the Inventory window for that piece of equipment. If that piece of equipment is already open in another Inventory window, the original window will be brought forward rather than opening in a second window.

Inventory windows can switch between different types of equipment while using drag and drop. For example, a camera icon can be dropped onto a window currently open for a Sign, and the window will switch to the Inventory information for that camera.

If an Inventory window is already open as a particular type of equipment, the window can be switched to another equipment of that type by using the selection drop down box.

In Inventory windows, the switcher bar switches the inventory window to a default (blank) inventory entry screen for that particular device type, or opens the first database record for that device type. Figure 14 shows the default Inventory Window.

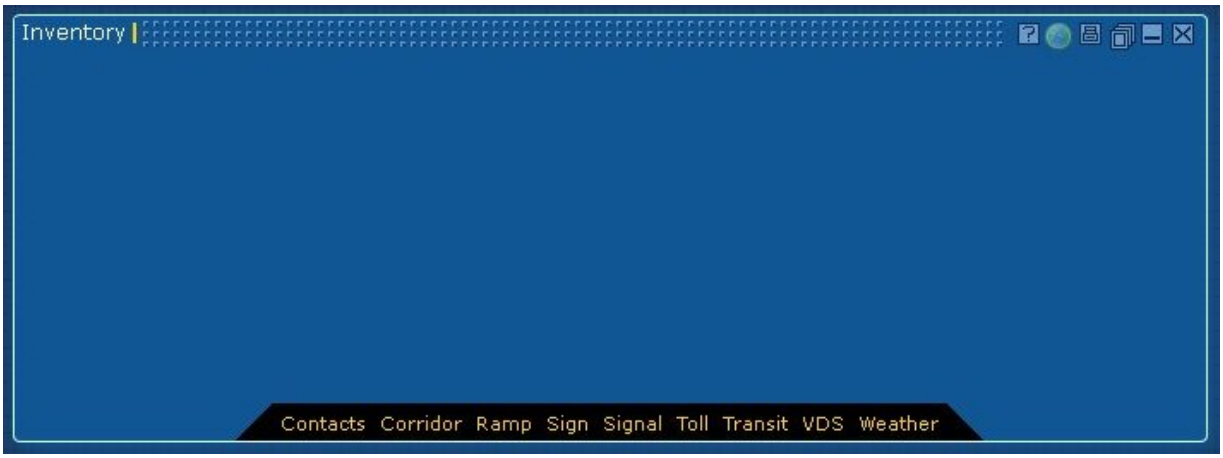


FIGURE 14: DEFAULT INVENTORY WINDOW

Using the Inventory Window

Selecting a device on the Switcher Bar displays a blank Inventory form for that device.

FIGURE 15: NEW INVENTORY ENTRY FORM FOR DMS

Adding Inventory

New equipment can be added to the database using the Inventory window by a permitted operator.

To open a blank entry form for a particular type, open an Inventory window and click the name of the equipment type in the switcher bar. If the operator has been given the privilege to add new inventory, a blank inventory entry form will open.

If the user does not have the correct privilege, the Inventory window will display the first record of the selected type from the database.

On the Inventory entry form, fill in all required data and click the *Save* button to add the new equipment record to the database. Please see the individual device Inventory window sections below for information specific to each type of equipment.

> **Note:** When entering new inventory, it is important to update which device group(s) the new device belongs to. Keep in mind that it may belong to several. This is done using the *Administration* window, *Groups* Switcher bar option, then the *Device Groups Manager* tab.

Modifying Inventory

Existing equipment inventory data can be modified using the Inventory window by a permitted operator.

To modify the stored information for a particular piece of equipment, open that record in an Inventory window by drag and drop from the List or Map window, or by selecting the equipment from a currently open Inventory window for that device type using the selection drop box. Click the *Modify* button to switch to the modify view.

If the operator does not have the correct privilege to edit inventory records, the *Modify* button will be grayed out and not accessible.

Deleting Inventory

Existing equipment can be deleted from the system using the Inventory window by a permitted operator.

To delete a piece of equipment from the system, open that record in the Inventory window using either drag and drop from the List or Map window, or by selecting the equipment in the selection drop down box from a currently open Inventory window of the correct type.

Click *Modify* to switch to modify mode, then click the *Delete* button to remove the equipment. If the user does not have the correct privilege to edit inventory records, the *Modify* button will be grayed out and not accessible.

> **Note**: Deleting any item from the inventory can affect how the application behaves. For example, deleting a DMS will affect Response Plans. Deleting VDSs will affect Travel Time calculations. One needs to be careful when deleting items from the inventory.

Using the Geo-Locator Map

The ICMS requires the latitude, longitude, leash position and icon orientation of all equipment for icons to be properly located in the Map window. The leash position is where the icon is placed on the map to avoid cluttering of icons which are close together. The icon orientation is the rotation of the icon on the map. These attributes can be manually entered into the appropriate fields in the equipment inventory entry forms. Or, the geo-locator map can be opened and the equipment's location attributes assigned by locating it on the map.

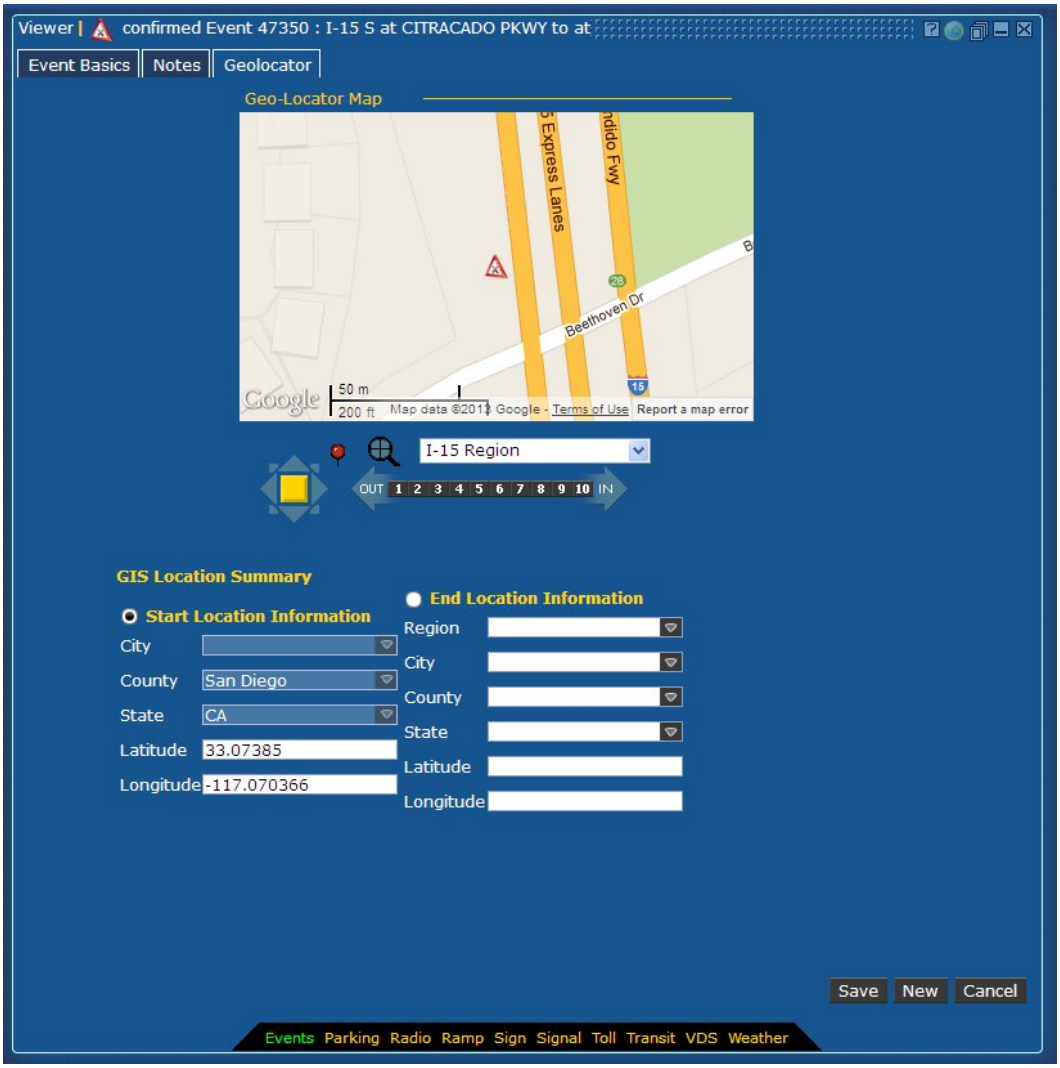


FIGURE 16: GEO-LOCATOR MAP

To open the Geo-Locator, click on the link *Open Geo-Locator Map* on the data entry or modify view for a piece of equipment.

An additional panel will open to the right of the inventory entry or modify view, displaying the default map. This map can be manipulated in the same manner as the map in the Map window—either the mouse or the map controls can be used to move around in the map view.

To capture the latitude and longitude of a particular location on the map:

a) Click the (pushpin) button located in the map controls. The outline of the pushpin turns yellow, the mouse pointer becomes a cross, and three radio buttons appear under the map.
b) Make sure the radio button for Lat/Long is checked.
c) Find the correct real world location for the equipment on the map, and click on that location.

An equipment icon will appear at that location, and the latitude and longitude will be filled in automatically in the entry or modify form.

The geo-locator map should next change the radio button selection to leash length.

To capture the leash position:

a) Make sure the radio button for Leash is checked.
b) Click the mouse at the proper location where the icon is to be placed.

The equipment icon will *move* to the location selected for the leash position, while the pushpin icon remains at the location set for latitude and longitude. The leash length and angle fields will be filled in automatically in the entry or modify form.

The geo-locator map should next change the radio button to orientation.

To set the orientation of the equipment:

a) Make sure the radio button for Orientation is checked.
b) Use the mouse to "spin" the equipment icon to the proper orientation. **Do not** click the mouse until the orientation is correct.
c) Click the mouse to accept the orientation.

When the equipment orientation is correct, the orientation field will be automatically set to that orientation in the entry or modify form.

Using the Contact Inventory Window

The Contacts Inventory window shows the information for both personnel and agencies. These entries are used for response plan notifications as well as alarm notifications.

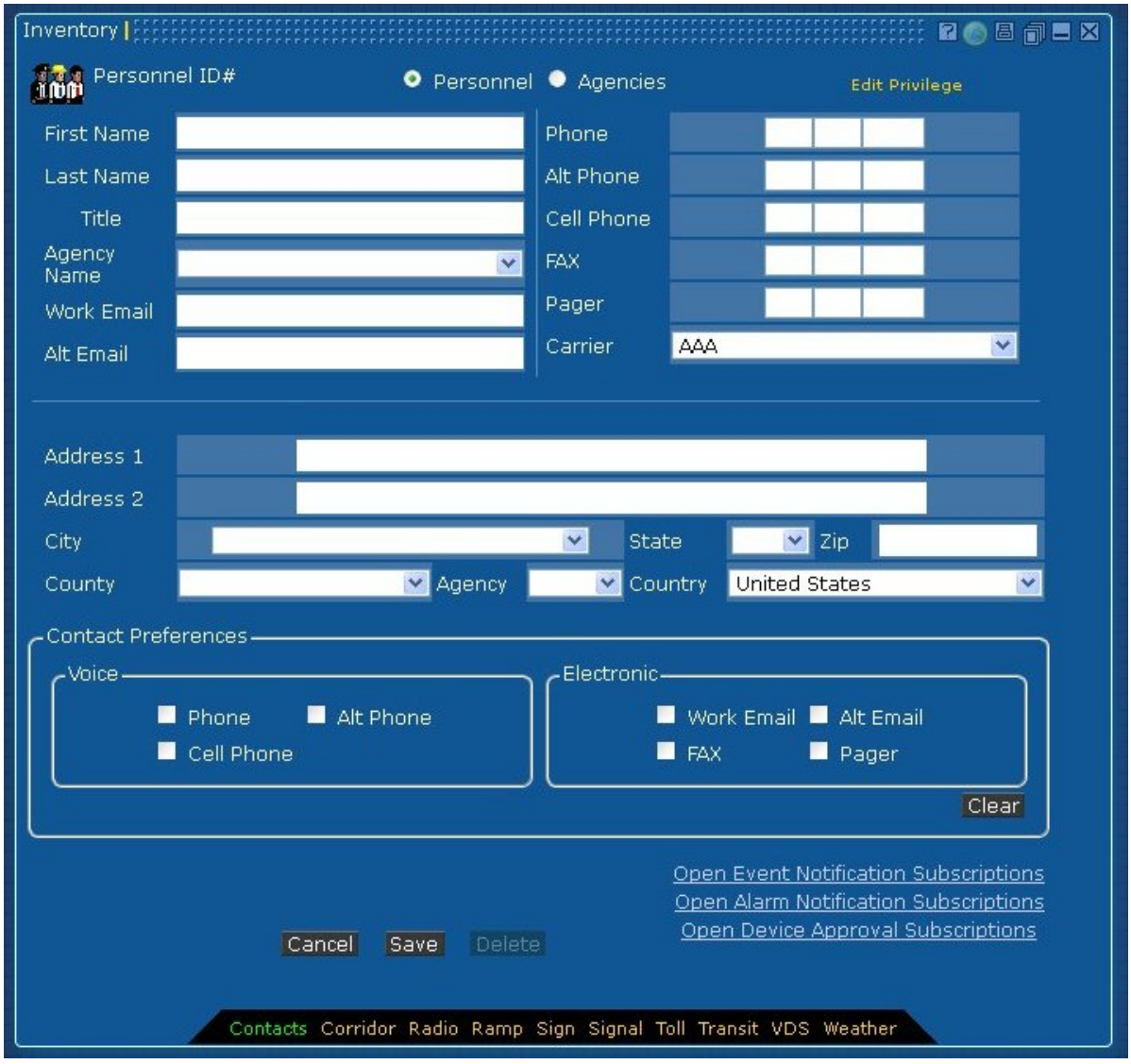


FIGURE 17: INVENTORY DISPLAY FORM FOR CONTACTS

Contact Inventory Privileges

The system contains two privileges which control Contact Inventory window usage: *Contact View* and *Contact Inventory Edit*.

The *Contact View* privilege allows the user to view the contact information, but will not allow any modifications. The *Contact Inventory Edit* privilege allows the user to add, modify, or delete Contact information. The tag "Edit Privilege" appears at the top of the Inventory window. If neither of these privileges is set, then the user does not have access to Contact information.

For further information on how to configure operators and set privileges, please see the Administration section of this document.

Entering Information into a Contact Inventory Entry and Modify Form

The fields in the Contact Inventory for personnel entry and modify form are explained below. To enter personnel information, select the *Personnel* button at the top of the window.

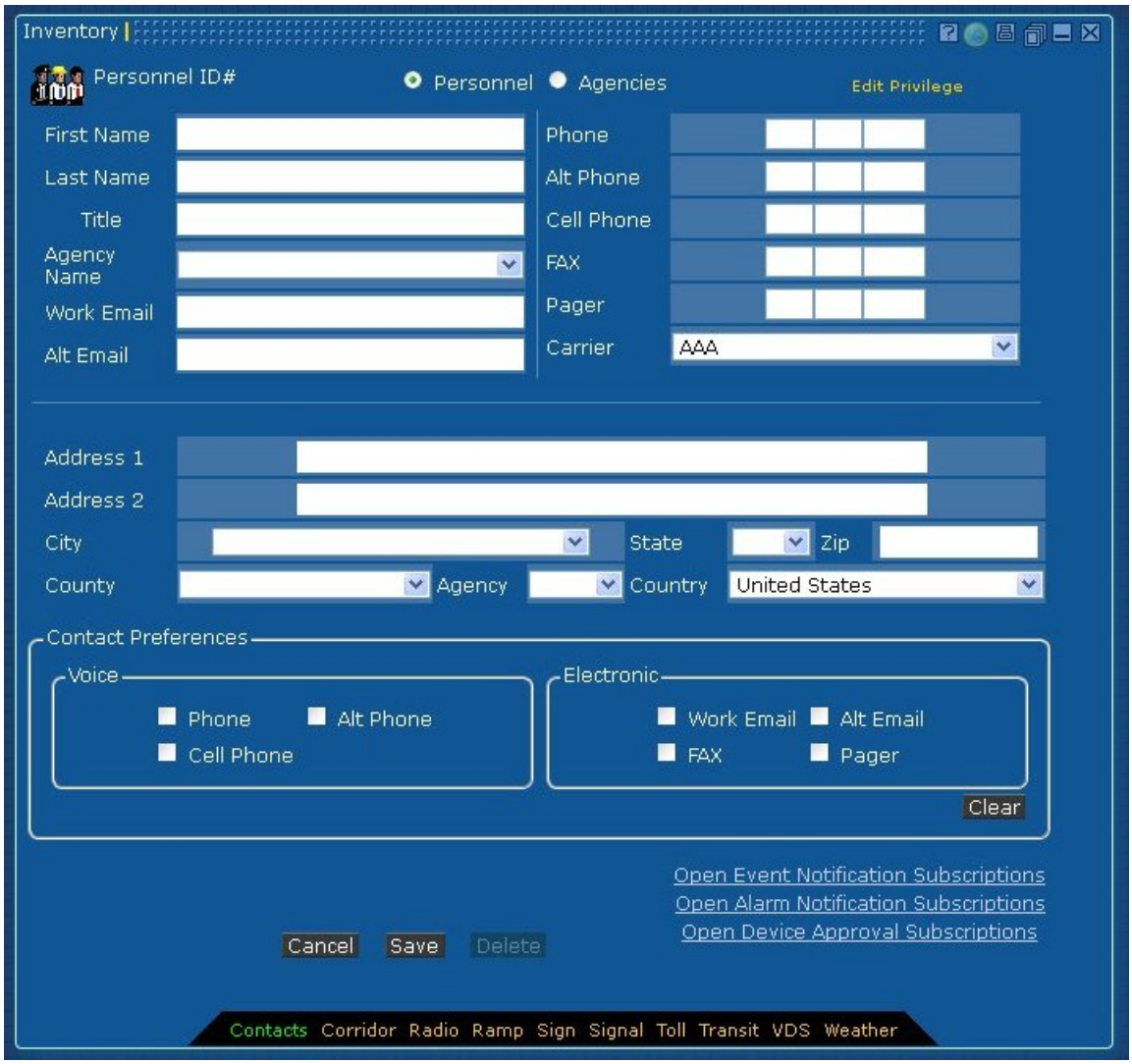


FIGURE 18: INVENTORY MODIFY FORM FOR CONTACTS

Personnel Information

TABLE 7: PERSONNEL INFORMATION ENTRY FIELDS

Field Name	Action
First Name	Enter the first name of the person.
Last Name	Enter the last name of the person.
Title	Enter the person's title.
Agency Name	Select the agency from the drop down list.

Field Name	Action
Work Email	Enter the person's work email address.
Alt Email	Enter an alternate email address.
Phone	Enter the phone number.
Alt Phone	Enter an alternate phone number.
Cell Phone	Enter the person's cell phone number.
FAX	Enter the person's FAX number.
Pager	Enter the person's pager number.
Carrier	Enter the carrier for the pager number.
Address 1	Enter the first line of the address.
Address 2	Enter the second line of the address.
City	Enter the city.
State	Enter the state.
Zip	Enter the zip code.
County	Enter the county.
District	Enter the district.
Country	Select the country from the drop down list.
Contact Preferences/Voice	Select the methods which are to be used for voice contact regarding emergency notifications of events.
Contact Preferences/Electronic	Select the methods which are to be used for electronic contact regarding emergency notifications of events.

To subscribe to event notifications generated by response plans, click on the *Event Notification Subscription* link located at the bottom of the window. Select the checkboxes for the notifications desired.

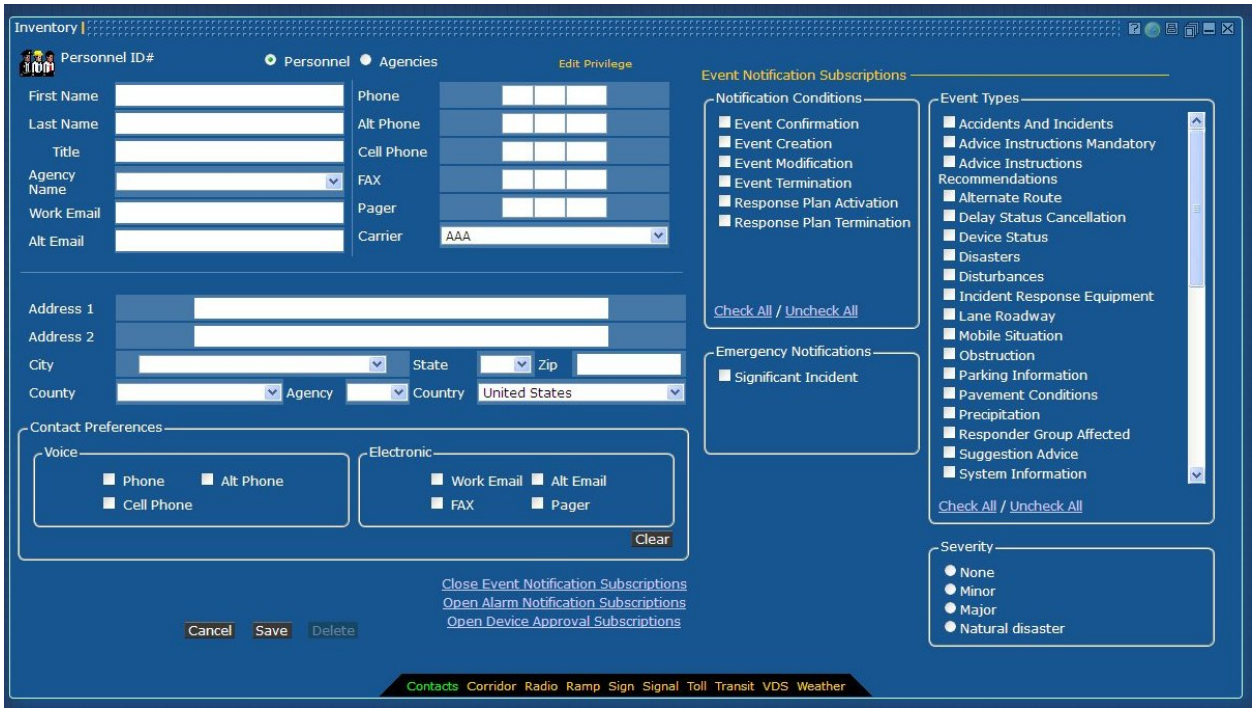


FIGURE 19: EVENT NOTIFICATION SUBSCRIPTION FORM

To subscribe to alarm notifications, click on the Alarm Notification Subscription link located at the bottom of the window. Select the checkboxes for the notifications desired.

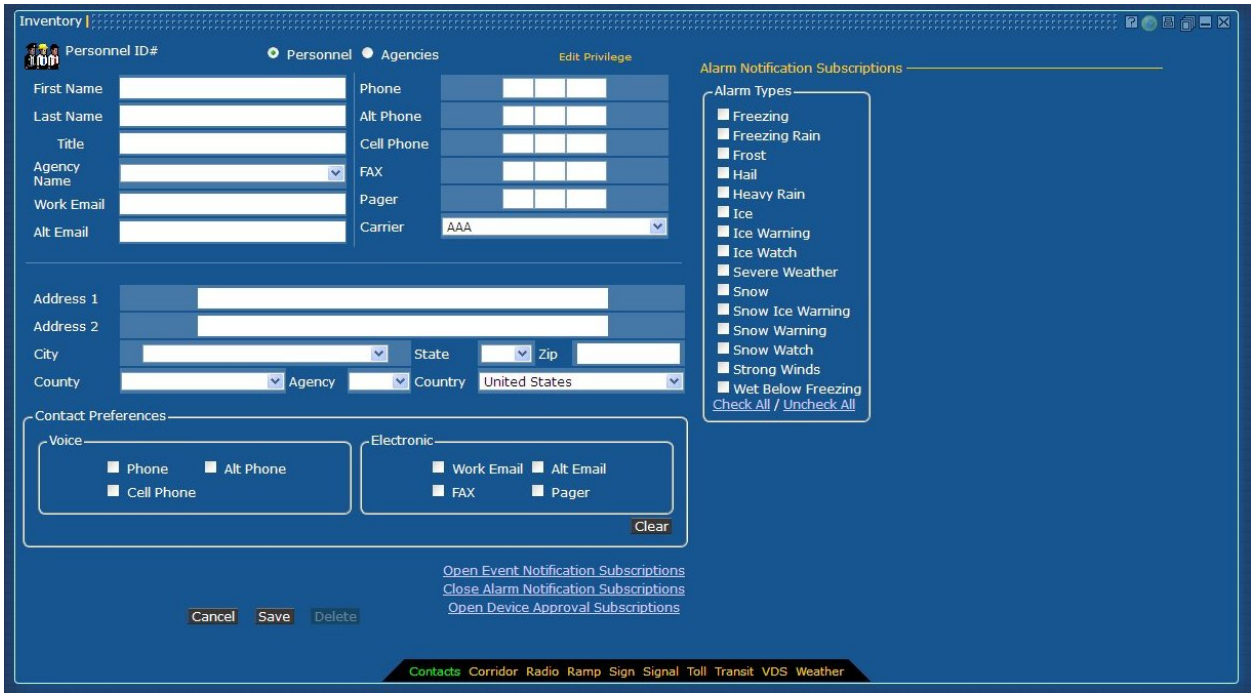


FIGURE 20: ALARM NOTIFICATION FORM

To subscribe to deice approval notifications, click on the Device Approval Subscription link located at the bottom of the window. Select the checkboxes for the approvals desired.

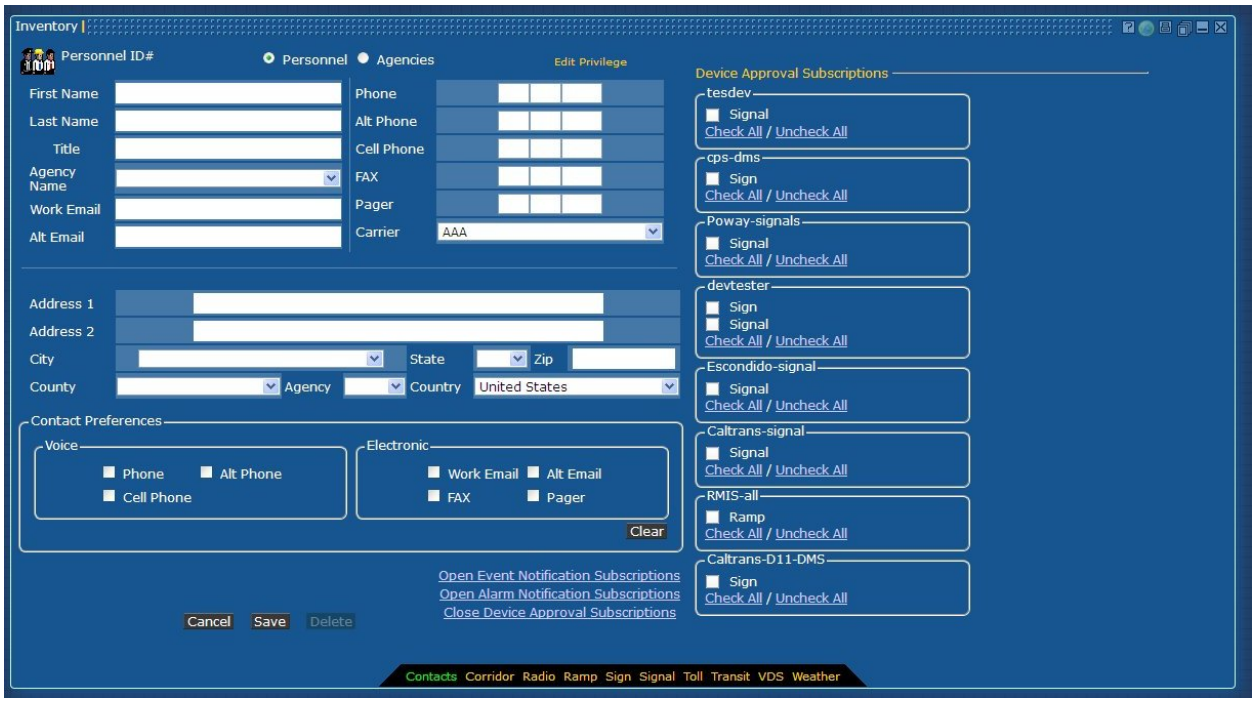


FIGURE 21: DEVICE APPROVAL FORM

To enter agency information, select the *Agency* button at the top of the window.

Agency Information

TABLE 8: AGENCY INFORMATION ENTRY FIELDS

Field Name	Action
First Responder	Enter whether agency is a first responder.
Agency Name	Enter the name of the agency.
Agency Location	Enter the location of the agency.
City	Enter the city of the agency.
State	Enter the state of the agency.
County	Enter the county for the agency.
District	Enter the district for the agency.
Country	Enter the country for the agency.

Managing Corridor

The Corridor is global parameters used to configure the event management and response plan management systems. The Corridor screens are accessible to all users, but only Corridor Administrators have the ability to make modifications to the parameters.

Global

The Global screen sets the values for various global verification parameters. These include the minimum time between action plans, as well as global arterial thresholds. Also shown on this screen are the individual route arterial thresholds. The modification of the arterial thresholds, whether global or route specific, allows the system to determine if the recommended route will be able to be used based on the availability of signals and the operational status of the signals.

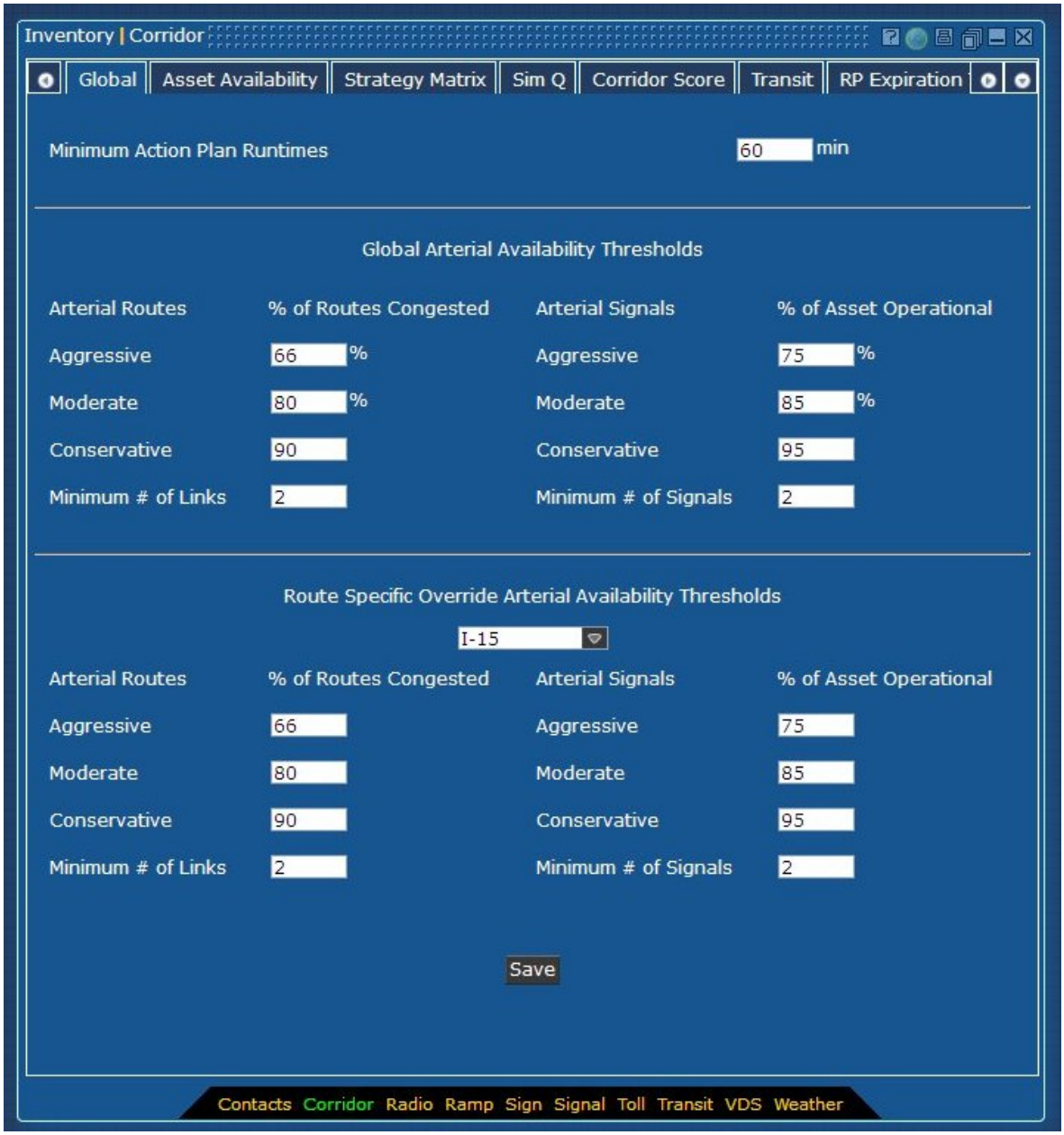


FIGURE 22: CORRIDOR – GLOBAL

TABLE 9: CORRIDOR – GLOBAL INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Minimum Action Plan Runtimes	For a long term event, this is the time from when a response plan has been activated before it is re-evaluated for a possible new response plan	10-30 minutes	15

Global Arterial Availability – Routes Information

TABLE 10: GLOBAL ARTERIAL AVAILABILITY – ROUTES

Field Name	Description	Range	Default
Aggressive	Percentage of route congested allowable for that route to be used as an alternate to the primary route when an aggressive response strategy is to be utilized.	0-100%	70
Moderate	Percentage of route congested allowable for that route to be used as an alternate to the primary route when a moderate response strategy is to be utilized.	0-100%	80
Conservative	Percentage of route congested allowable for that route to be used as an alternate to the primary route when a conservative response strategy is to be utilized.	0-100%	90
Minimum # of Links	The minimum number of links required when evaluating the route availability. Default setting relative to the overall link	0-50	2

Global Arterial Availability – Signals Information

TABLE 11: GLOBAL ARTERIAL AVAILABILITY – SIGNALS

Field Name	Description	Range	Default
Aggressive	Percentage of available signal assets required for the given route to be used as an alternate to the primary route when an aggressive response strategy is to be utilized.	0-100%	70
Moderate	Percentage of available signal assets required for the given route to be used as an alternate to the primary route when a moderate response strategy is to be utilized.	0-100%	80
Conservative	Percentage of available signal assets required for the given route to be used as an alternate to the primary route when a conservative response strategy is to be utilized.	0-100%	90
Minimum # of Signals	The minimum number of signals required when evaluating the route asset availability.	0-50	2

Route Specific Arterial Availability – Routes Information

TABLE 12: ROUTE SPECIFIC ARTERIAL AVAILABILITY – ROUTES

Field Name	Description	Range	Default
Route Selection	Route Selection	Available ICMS routes	none
Aggressive	Percentage of route congested allowable for that route to be used as an alternate to the primary route when an aggressive response strategy is to be utilized.	0-100%	Subject to Operational Review
Moderate	Percentage of route congested allowable for that route to be used as an alternate to the primary route when a moderate response strategy is to be utilized.	0-100%	Subject to Operational Review
Conservative	Percentage of route congested allowable for that route to be used as an alternate to the primary route when a conservative response strategy is to be utilized.	0-100%	Subject to Operational Review
Minimum # of Links	The minimum number of links required when evaluating the route availability. Default setting relative to the overall link	0-50	Subject to Operational Review

Route Specific Arterial Availability – Signals Information

TABLE 13: ROUTE SPECIFIC ARTERIAL AVAILABILITY – SIGNALS

Field Name	Description	Range	Default
Aggressive	Percentage of available signal assets required for the given route to be used as an alternate to the primary route when an aggressive response strategy is to be utilized.	0-100%	Subject to Operational Review
Moderate	Percentage of available signal assets required for the given route to be used as an alternate to the primary route when a moderate response strategy is to be utilized.	0-100%	Subject to Operational Review
Conservative	Percentage of available signal assets required for the given route to be used as an alternate to the primary route when a conservative response strategy is to be utilized.	0-100%	Subject to Operational Review
Minimum # of Signals	The minimum number of signals required when evaluating the route asset availability.	0-50	Subject to Operational Review

Asset Availability

Asset availability allows the Corridor Administrator to select on a per asset basis, the availability of the asset to be used in response plans. Each asset is able to be in one of the following states:

- Unavailable – Is unable to be used for a response plan at anytime
- Auto Approve – Can be used in a response plan WITHOUT approval being granted
- Deny on Timeout – After the timeout period, set on RP Expiration Timers screen, the asset is unable to be used in a response plan
- Approve on Timeout – After the timeout period, the asset is able to be used even if no approval has been received.

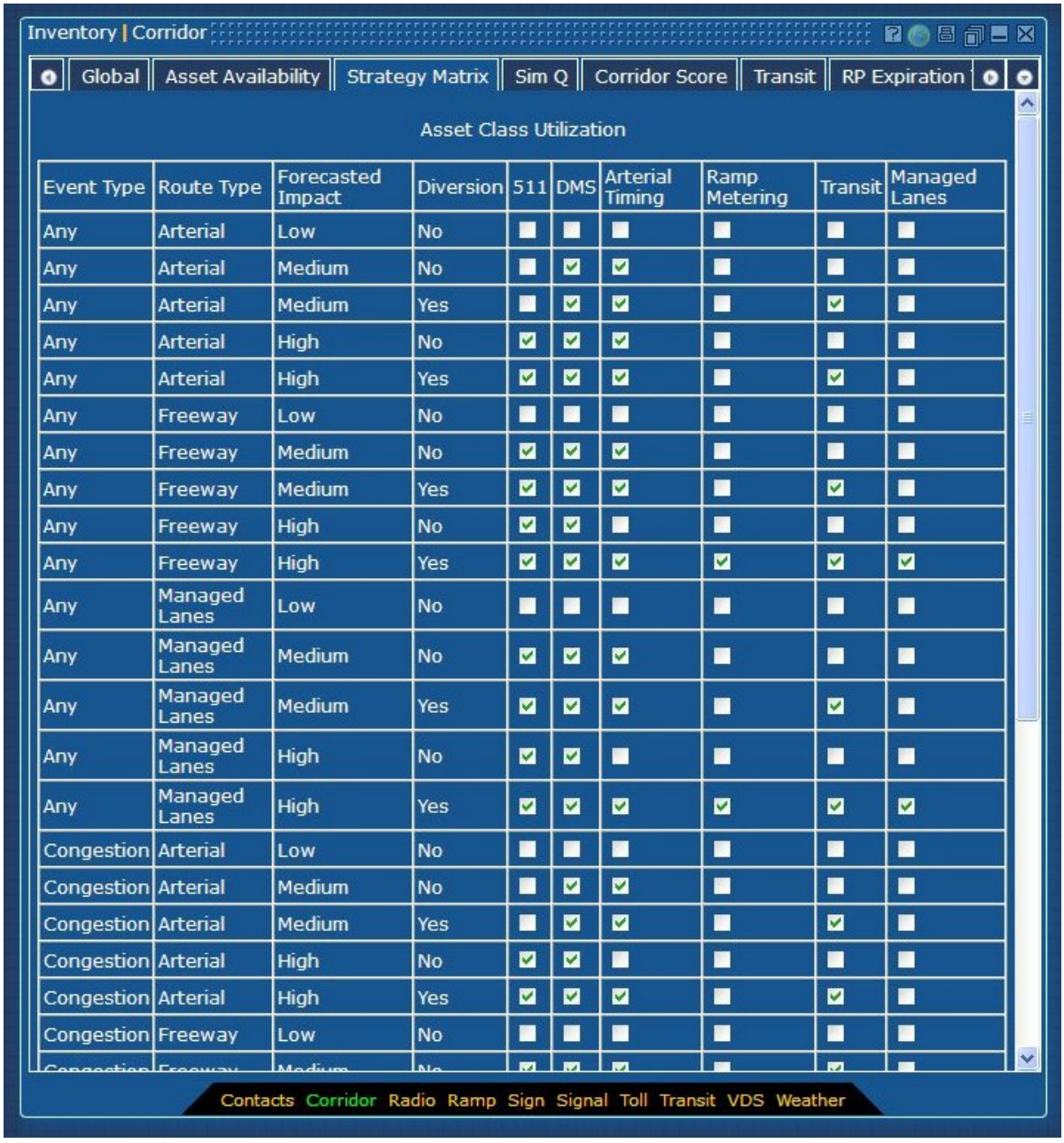
DMS NAME	ROAD	CROSS STREET	MILE MARKER	CITY	DISTRICT	AVAILABILITY
1106505	I-5	J St OC	14.75	San Diego		Deny on Timeout
1106506	I-8	Main St	14.34			Deny on Timeout
1106507	I-15	Rte 94 Interchange	2.68	San Diego		Deny on Timeout
1106508	I-15	Miramar Way	13.57	San Diego		Deny on Timeout
1106509	SR-163	Genesee Ave	5.46	San Diego		Deny on Timeout
1106510	SR-163	Clairemont Mesa Blvd	9.01	San Diego		Deny on Timeout
1106511	I-805	Imperial Ave	12.24	San Diego		Deny on Timeout
1106512	I-805	El Cajon Blvd	16.7	San Diego		Deny on Timeout
1106513	I-805	I 8	18.3			Deny on Timeout
1106514	I-805	Clairemont Mesa Blvd	22.79	San Diego		Deny on Timeout
1106515	I-5	Camino De La Plaza OC	0.29	San Diego		Deny on Timeout
1106516	I-5	Camino De La Plaza	0.3	San Diego		Deny on Timeout
1106517	I-5	Coronado Ave	4.32	San Diego		Deny on Timeout
1106518	I-805	Orange Ave	4.42	San Diego		Deny on Timeout
1107724	I-5	Rte 56	31.19	San Diego		Deny on Timeout
1107725	SR-54	Woodman Ave	3.53	San Diego		Deny on Timeout
1107726	I-5	L St	6.66	Chula Vista		Deny on Timeout
1107727	I-805	E/H St	6.82	Chula Vista		Deny on Timeout
1107728	SR-52	Genesee Ave	2.36	San Diego		Deny on Timeout
1107729	SR-52	Santo Rd	8.99	San Diego		Deny on Timeout
1107730	I-5	W 18th St	10.38	San Diego		Deny on Timeout
1107732	I-5	Tamarack Ave	49.28	San Diego		Deny on Timeout
1107736	SR-94	Kelton Rd	5.78	San Diego		Deny on Timeout
1112929	I-5	Imperial Ave	14.52	San Diego		Deny on Timeout

FIGURE 23: CORRIDOR – ASSET AVAILABILITY

Strategy Matrix

For the specific event types, which devices can be used in the recommended response plans, is the functionality of this screen. There are two (2) event types: Congestion and Any, while there are three (3) route types; Freeway, Arterial, and Express Lanes. There are three (3) impact levels; High, Medium, and Low. Two (2) diversion types, Yes and No, are included for the devices to be included for a transit diversion.

For each selection, the administrator selects the desired devices or assets that can be used in the preparation of the response plan.



Event Type	Route Type	Forecasted Impact	Diversion	511	DMS	Arterial Timing	Ramp Metering	Transit	Managed Lanes
Any	Arterial	Low	No	☐	☐	☐	☐	☐	☐
Any	Arterial	Medium	No	☐	☑	☑	☐	☐	☐
Any	Arterial	Medium	Yes	☐	☑	☑	☐	☑	☐
Any	Arterial	High	No	☑	☑	☑	☐	☐	☐
Any	Arterial	High	Yes	☑	☑	☑	☐	☑	☐
Any	Freeway	Low	No	☐	☐	☐	☐	☐	☐
Any	Freeway	Medium	No	☑	☑	☑	☐	☐	☐
Any	Freeway	Medium	Yes	☑	☑	☑	☐	☑	☐
Any	Freeway	High	No	☑	☑	☐	☐	☐	☐
Any	Freeway	High	Yes	☑	☑	☑	☑	☑	☑
Any	Managed Lanes	Low	No	☐	☐	☐	☐	☐	☐
Any	Managed Lanes	Medium	No	☑	☑	☑	☐	☐	☐
Any	Managed Lanes	Medium	Yes	☑	☑	☑	☐	☑	☐
Any	Managed Lanes	High	No	☑	☑	☐	☐	☐	☐
Any	Managed Lanes	High	Yes	☑	☑	☑	☑	☑	☑
Congestion	Arterial	Low	No	☐	☐	☐	☐	☐	☐
Congestion	Arterial	Medium	No	☐	☑	☑	☐	☐	☐
Congestion	Arterial	Medium	Yes	☐	☑	☑	☐	☑	☐
Congestion	Arterial	High	No	☑	☑	☐	☐	☐	☐
Congestion	Arterial	High	Yes	☑	☑	☑	☐	☑	☐
Congestion	Freeway	Low	No	☐	☐	☐	☐	☐	☐

FIGURE 24: CORRIDOR – STRATEGY MATRIX

TABLE 14: CORRIDOR – STRATEGY MATRIX INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Any	All checked asset types, in conjunction with asset type dependencies will be evaluated for selection for the event scenario identified.	Yes (checked) / No (unchecked)	Regional Preference

Sim Q

The overall functionality of this screen is to provide the global simulation management features. This is separated by the two (2) event types, Congestion and Non-Congestion. Initial scores are available for each of these event types, as well as the location of the event, either Freeway or Arterial.

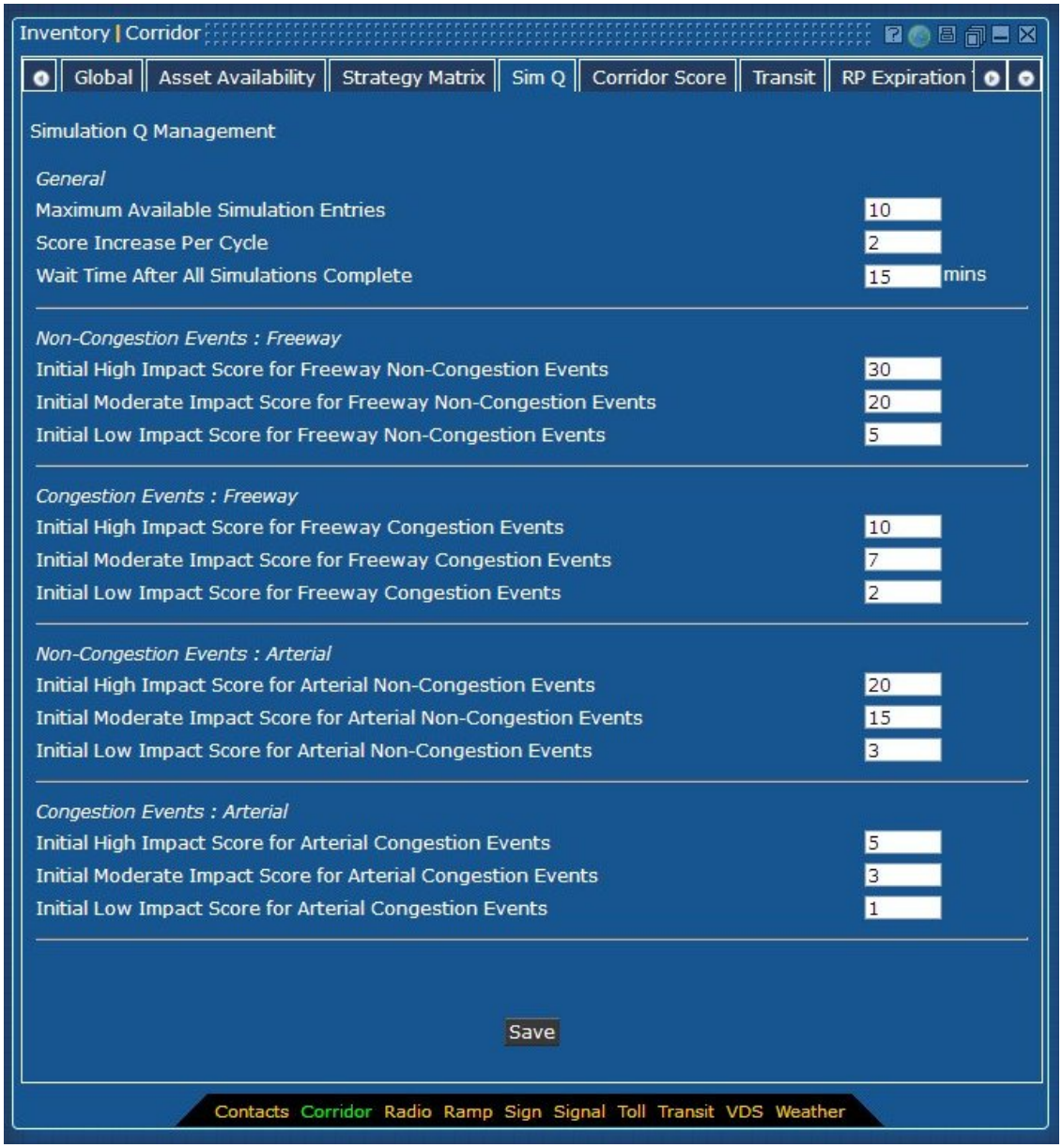


FIGURE 25: CORRIDOR – SIM Q

General Information

TABLE 15: SIM Q - GENERAL INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Maximum Available Simulation Entries	The maximum number of available simulation slots	2 - 100	10
Score Increase Per Cycle	The amount to increase a waiting simulation's score per poll cycle	1 -10 polls	2
Wait Time After All Simulations Complete	Time to wait after all simulations complete before reassessing simulations for the given event.	0-60 min	15

Non-Congestion Events - Freeway Information

TABLE 16: SIM Q – NON CONGESTION – FREEWAY EVENTS INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Initial High Impact Score	This is the initial score attached to high impact non-congestion events for determining priority in the available simulation slots for freeways	0 -60	30
Initial Medium Impact Score	This is the initial score attached to medium impact non-congestion events for determining priority in the available simulation slots for freeways	0- 40	20
Initial Low Impact Score	This is the initial score attached to low impact non-congestion events for determining priority in the available simulation slots for freeways	0 - 20	5

Non-Congestion Events – Arterial

TABLE 17: SIM Q – NON CONGESTION – ARTERIAL EVENTS INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Initial High Impact Score	This is the initial score attached to high impact non-congestion events for determining priority in the available simulation slots for arterials	0 -60	20
Initial Medium Impact Score	This is the initial score attached to medium impact non-congestion events for determining priority in the available simulation slots for arterials	0- 40	15
Initial Low Impact Score	This is the initial score attached to low impact non-congestion events for determining priority in the available simulation slots for arterials	0 - 20	3

Congestion Events – Freeway

TABLE 18: SIM Q – CONGESTION – FREEWAY EVENTS INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Initial High Impact Score	This is the initial score attached to high impact congestion events for determining priority in the available simulation slots for freeways	0 -60	10
Initial Medium Impact Score	This is the initial score attached to medium impact congestion events for determining priority in the available simulation slots for freeways	0- 40	7
Initial Low Impact Score	This is the initial score attached to low impact congestion events for determining priority in the available simulation slots for freeways	0 - 20	2

Congestion Events – Arterial

TABLE 19: SIM Q – CONGESTION – ARTERIAL EVENTS INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Initial High Impact Score	This is the initial score attached to high impact congestion events for determining priority in the available simulation slots for arterials	0 -60	5
Initial Medium Impact Score	This is the initial score attached to medium impact congestion events for determining priority in the available simulation slots for arterials	0- 40	3
Initial Low Impact Score	This is the initial score attached to low impact congestion events for determining priority in the available simulation slots for arterials	0 - 20	1

Corridor Score

Within this screen is the definition of the evaluation area to compare the simulation scores to. The Evaluation Area defines a "boundary area" for each of the process types of Conservative, Moderate, and Aggressive. In developing the evaluation bounding area, the length "X" is the downstream distance from the event for defining the evaluation area and length, while the "3x" is the upstream distance from the event for defining the evaluation area –defined per response plan posture. In developing the evaluation bounding area, this width is the perpendicular distance to the event, based on event direction, for defining the evaluation area as defined per response plan posture.

The values for the vehicle metrics is the assumed vehicle occupancy factor to apply to the individual vehicle along a route, in evaluating the metric relative to people instead of vehicles.

The evaluation period metrics are the weighting factors for the specific interval relative to the other intervals. The exclusions for the Level Of Service (LOS) is for the addition of nearby links operating at the same LOS level to the evaluation.

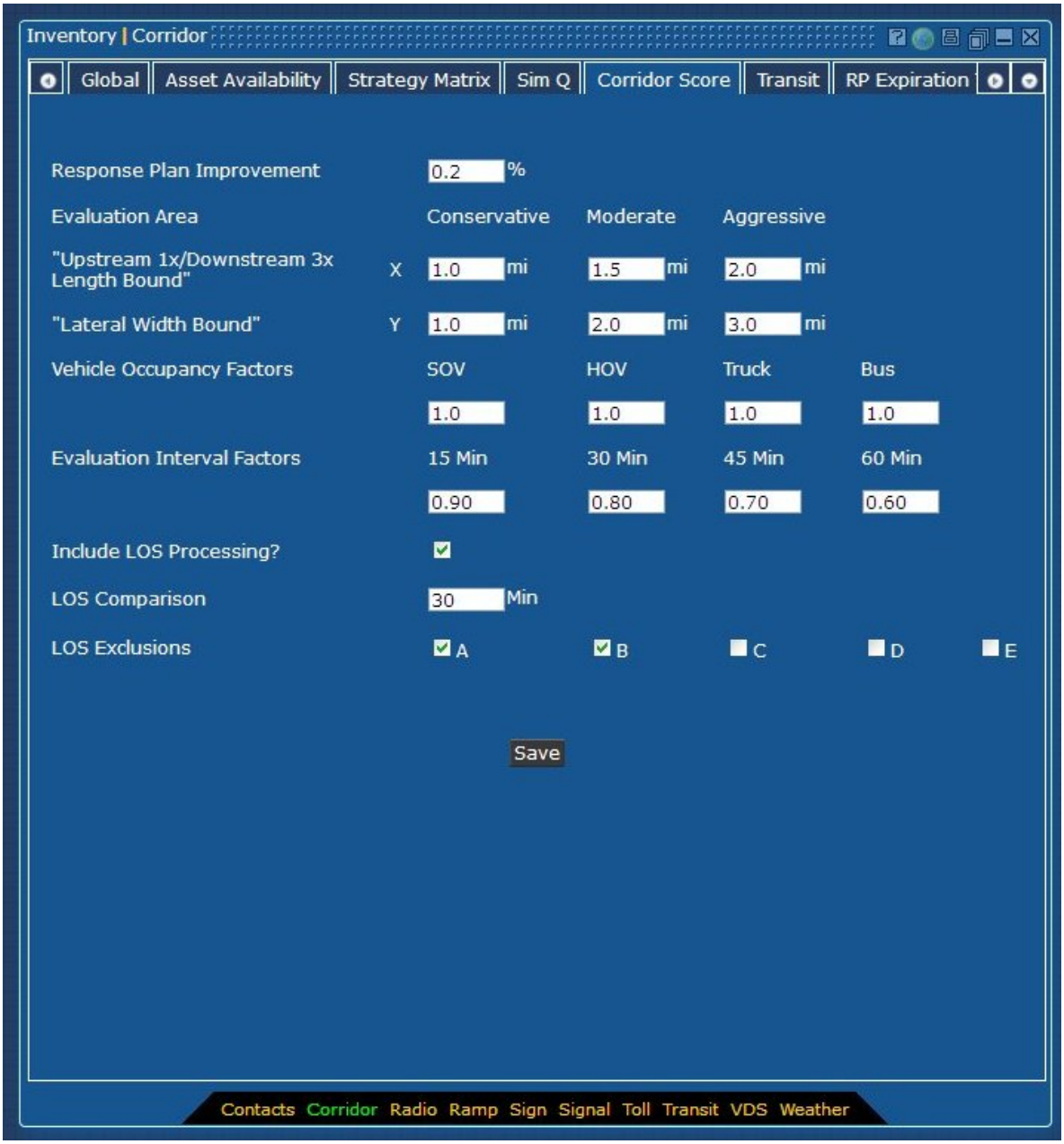


FIGURE 26: CORRIDOR – CORRIDOR SCORE

General Information

TABLE 20: CORRIDOR SCORE- UPSTREAM/DOWNSTREAM INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Response Plan Improvement	Minimum percentage improvement of a response plan in comparison to the Do Nothing/Current Plan required in order to make the response plan request	0-50%	5

Field Name	Description	Range	Default
Upstream/Downstream Length Bound – Conservative	In developing the evaluation bounding area, this length "X" is the downstream distance from the event for defining the evaluation area and length. "3x" is the upstream distance from the event for defining the evaluation area –defined per response plan posture.	0-15 mi	1
Upstream/Downstream Length Bound – Moderate	In developing the evaluation bounding area, this length "X" is the downstream distance from the event for defining the evaluation area and length. "3x" is the upstream distance from the event for defining the evaluation area –defined per response plan posture.	0-15 mi	1.5
Upstream/Downstream Length Bound – Aggressive	In developing the evaluation bounding area, this length "X" is the downstream distance from the event for defining the evaluation area and length. "3x" is the upstream distance from the event for defining the evaluation area –defined per response plan posture.	0-15 mi	3
Lateral Width Bound – Conservative	In developing the evaluation bounding area, this width is the perpendicular distance to the event, based on event direction, for defining the evaluation area – defined per response plan posture.	0-10 mi	1
Lateral Width Bound – Moderate	In developing the evaluation bounding area, this width is the perpendicular distance to the event, based on event direction, for defining the evaluation area – defined per response plan posture.	0-10 mi	2
Lateral Width Bound – Aggressive	In developing the evaluation bounding area, this width is the perpendicular distance to the event, based on event direction, for defining the evaluation area – defined per response plan posture.	0-10 mi	3
Vehicle Occupancy Factors – SOV	Assumed vehicle occupancy factor to apply for standard use vehicles along a route, in evaluating metric relative to people instead of vehicles.	0-100 people	1.2
Vehicle Occupancy Factors – HOV	Assumed vehicle occupancy factor to apply for high occupancy vehicles along a route, in evaluating metric relative to people instead of vehicles.	0-100 people	2.2
Vehicle Occupancy Factors – Truck	Assumed vehicle occupancy factor to apply for trucks along a route, in evaluating metric relative to people instead of vehicles.	0-100 people	1
Vehicle Occupancy Factors – Bus	Assumed vehicle occupancy factor to apply for busses along a route, in evaluating metric relative to people instead of vehicles.	0-100 people	TBD
Evaluation Interval Factors – 15 min	Weighting factor at the 15 minute interval for evaluation metrics relative to other intervals.	0-100%	10

Field Name	Description	Range	Default
Evaluation Interval Factors – 30 min	Weighting factor at the 30 minute interval for evaluation metrics relative to other intervals.	0-100%	40
Evaluation Interval Factors – 45 min	Weighting factor at the 45 minute interval for evaluation metrics relative to other intervals.	0-100%	40
Evaluation Interval Factors – 60 min	Weighting factor at the 60 minute interval for evaluation metrics relative to other intervals.	0-100%	10
Include LOS Processing	On/Off (Yes/No) for LOS based link additions in evaluations	Yes / No	Yes
LOS Exclusions – A	On/Off (Yes/No) for adding nearby links operating at LOS A to the evaluations	Yes / No	No
LOS Exclusions – B	On/Off (Yes/No) for adding nearby links operating at LOS B to the evaluations	Yes / No	No
LOS Exclusions – C	On/Off (Yes/No) for adding nearby links operating at LOS C to the evaluations	Yes / No	No
LOS Exclusions – D	On/Off (Yes/No) for adding nearby links operating at LOS D to the evaluations	Yes / No	Yes
LOS Exclusions – E	On/Off (Yes/No) for adding nearby links operating at LOS E to the evaluations	Yes / No	Yes

Transit

The Transit Availability screen allows the Administrator to determine the distance/evaluation area that will allow the transit device to be included in the response plan. The Administrator defines the parameters for the following:

- Bus Capacity – are there available transit vehicles that can sustain the additional passengers?
- Parking Availability – Is there available parking spaces for the additional passengers and their vehicles?
- Is the transit travel time worse than the current scheduled route?
- Distance to the nearest transit station must be less than the specified.

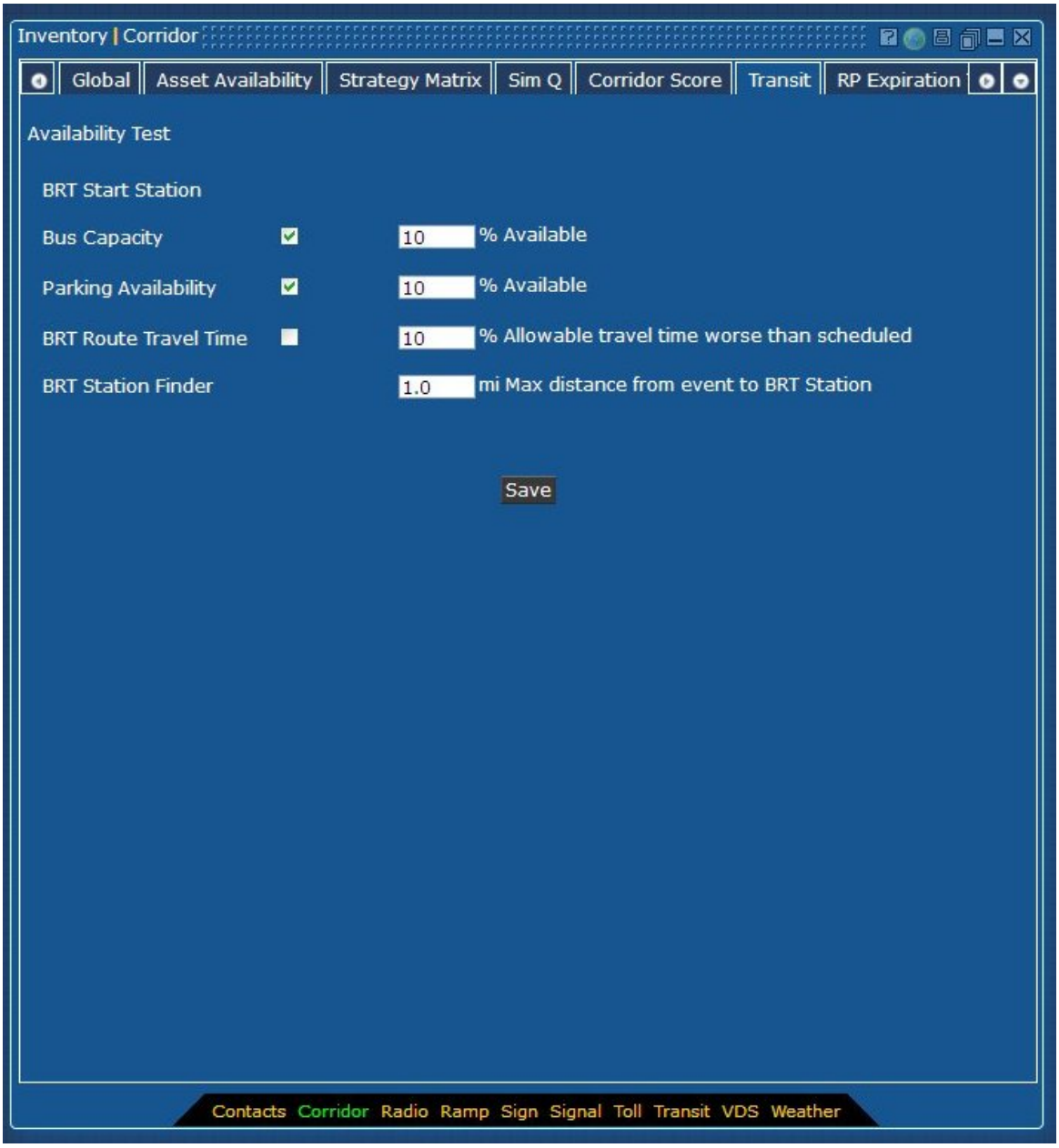


FIGURE 27: CORRIDOR – TRANSIT

TABLE 21: TRANSIT INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Bus Capacity	Minimum percentage of aggregate transit capacity required to initiate a transit option in the response plan	0 - 100 %	50
Parking Availability	Minimum percentage of BRT Station Parking lot capacity required to initiate a transit option in the response plan	0 - 100 %	50

Field Name	Description	Range	Default
BRT Route Travel Time	Maximum percentage above historical average travel time allowed to initiate a transit option in the response plan	0 - 100 %	25
BRT Station Finder	Maximum distance from the event to nearest BRT Station allowed to initiate a transit option in the response plan	0 – 10 miles	2

RP Expiration Timers

This screen enables the Administrator to set timers in relation to devices and their availability for response plans. The following timers are shown on this screen:

- Reuse Timer – maximum amount of time, in minutes, that this device/asset can be used in another response plan, equal in posture, i.e. a moderate plan can use these devices/assets after the time limit has expired on another moderate plan
- Auto Approval Timer – timeout in minutes that the device/asset can be used automatically. No approval is required from the device/asset owning agency
- No Reply Timer – maximum amount of time, in minutes, after no reply, for this device/asset to be declared unavailable for this response plan. For example, a ramp metering device is requested for a response plan, yet no approval is received from the owning agency. After the specified time period, the ramp metering will be declared unavailable for usage

FIGURE 28: CORRIDOR – EXPIRATION TIMERS

Reuse Timer

TABLE 22: RP EXPIRATION TIMERS–REUSE TIMER INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
511	The number of minutes that a 511 asset will be held before being available to an event of equal or lower posture	0 – 30 minutes	15
DMS	The number of minutes that a DMS asset will be held before being available to an event of equal or lower posture	0 – 30 minutes	5

Field Name	Description	Range	Default
Traffic Signals	The number of minutes that a traffic signal asset will be held before being available to an event of equal or lower posture	0 – 30 minutes	15
Ramp Metering	The number of minutes that a ramp metering asset will be held before being available to an event of equal or lower posture	0 – 30 minutes	10
Express Lanes	The number of minutes that an express lanes asset will be held before being available to an event of equal or lower posture	0 – 30 minutes	20

Auto Approval Timer

TABLE 23: RP EXPIRATION TIMERS – AUTO APPROVAL TIMER INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
511	For 511 assets, when marked as being "available automatically after a time out interval", if the owner hasn't responded within this number of minutes the asset can be used immediately	0 – 20 min	5
DMS	For DMS assets, when marked as being "available automatically after a time out interval", if the owner hasn't responded within this number of minutes the asset can be used immediately	0 – 20 min	5
Traffic Signals	For traffic signal assets, when marked as being "available automatically after a time out interval", if the owner hasn't responded within this number of minutes the asset can be used immediately	0 – 20 min	5
Ramp Metering	For ramp metering assets, when marked as being "available automatically after a time out interval", if the owner hasn't responded within this number of minutes the asset can be used immediately	0 – 20 min	7
Express Lanes	For express lanes assets, when marked as being "available automatically after a time out interval", if the owner hasn't responded within this number of minutes the asset can be used immediately	0 – 20 min	15

No Approval Timer

TABLE 24: RP EXPIRATION TIMERS – NO APPROVAL TIMER INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
511	Maximum time to wait for owner approval of the 511 asset before not using the asset	0 – 30 minutes	10
DMS	Maximum time to wait for owner approval of DMS (Sign) assets before not using the assets	0 – 30 minutes	5

Field Name	Description	Range	Default
Traffic Signals	Maximum time to wait for owner approval of Signal assets before not using the assets	0 – 30 minutes	10
Ramp Metering	Maximum time to wait for owner approval of Ramp Metering assets before not using the assets	0 – 30 minutes	10
Express Lanes	Maximum time to wait for owner approval of Express Lanes assets	0 – 30 minutes	20

Notifications

This screen allows the Administrator to specific which Operator Group will receive notifications. Notifications can include notification to the owner for device failures, whether the device/asset is in an active response plan or not.

FIGURE 29: CORRIDOR – NOTIFICATIONS

Primary ICM Information

TABLE 25: NOTIFICATIONS – PRIMARY ICM INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Group Selection	Each Group contains a set of contacts. Chosen groups receive notifications for any of the selected Event Changes. Additionally, Reminder/ Escalation timers begin with Action Plan Request, with Reminder 1, Reminder 2, and Escalation timers continuing until Action Plan Response is received.	Dependent upon defined user groups	Admin User Group

Field Name	Description	Range	Default
Event Confirmation	All timers are minutes from Event State update or from timers measuring response to action plan requests.	0-120 min	4
Event Duration	All timers are minutes from Event State update or from timers measuring response to action plan requests.	0-120 min	4
Action Plan Request	All timers are minutes from Event State update or from timers measuring response to action plan requests.	0-120 min	2
Action Plan Response	All timers are minutes from Event State update or from timers measuring response to action plan requests.	0-120 min	2
Reminder 1	All timers are minutes from Event State update or from timers measuring response to action plan requests.	0-120 min	10
Reminder 2	All timers are minutes from Event State update or from timers measuring response to action plan requests.	0-120 min	5
Escalation after Request	All timers are minutes from Event State update or from timers measuring response to action plan requests.	0-120 min	2

Device Failure - Not Currently in Action Plan Information

TABLE 26: NOTIFICATIONS – DEVICE FAILURE INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Group Selections	Group selection for device failures if the device is currently not in an action plan.	Dependent upon defined user groups	Admin User Group
511 – All	Timer defines contiguous duration of 511 device failure prior to notifying interested ICMS contact Group of the failure issue	0-2880 min	480
DMS – All	Timer defines contiguous duration of Sign (DMS) device failure prior to notifying interested ICMS contact Group of the failure issue	0-2880 min	360
Signals – No Coord	Timer defines contiguous duration of Signals with No Coordination status device failure prior to notifying interested ICMS contact Group of the failure issue	0-2880 min	360
Signals – Signals in Flash	Timer defines contiguous duration of Signals with Signals in Flash device status failure prior to notifying interested ICMS contact Group of the failure issue	0-2880 min	360
Signals – No Response	Timer defines contiguous duration of Signals with No Response device status failure prior to notifying interested ICMS contact Group of the failure issue	0-2880 min	360

Field Name	Description	Range	Default
Signals – No Comm	Timer defines contiguous duration of Signals with No Comm(unications) device status failure prior to notifying interested ICMS contact Group of the failure issue	0-2880 min	360
Ramp Meters – All	Timer defines contiguous duration of ramp Meters device failure prior to notifying interested ICMS contact Group of the failure issue	0-2880 min	360

Device Failure - In Action Plan Information

TABLE 27: NOTIFICATIONS – DEVICE FAILURE IN ACTION PLAN INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Group Selections	Group selection for device failures if the device is currently in an action plan.	Dependent upon defined user groups	Admin User Group
511 – All	Timer defines contiguous duration of 511 device failure, if the device is currently in a requested or activated plan, prior to notifying interested ICMS contact Group of the failure issue.	0-1440 min	30
DMS – All	Timer defines contiguous duration of Sign (DMS) device failure, if the device is currently in a requested or activated plan, prior to notifying interested ICMS contact Group of the failure issue.	0-1440 min	5
Signals – No Coord	Timer defines contiguous duration of Signals with no coordination device status failure, if the device is currently in a requested or activated plan, prior to notifying interested ICMS contact Group of the failure issue.	0-1440 min	5
Signals – Signals in Flash	Timer defines contiguous duration of Signals with Signals in Flash device status failure if the device is currently in a requested or activated plan, prior to notifying interested ICMS contact Group of the failure issue.	0-1440 min	5
Signals – No Response	Timer defines contiguous duration of Signals with no response device status failure if the device is in a requested or activated plan, prior to notifying interested ICMS contact Group of the failure issue.	0-1440 min	10
Signals – No Comm	Timer defines contiguous duration of Signals with No Comm(unications) device status failure, if the device is currently in a requested or activated plan, prior to notifying interested ICMS contact Group of the failure issue.	0-1440 min	10

Field Name	Description	Range	Default
Ramp Meters – All	Timer defines contiguous duration of Ramp Meter device failure, if the device is currently in a requested or active response plan, prior to notifying interested ICMS contact Groups of the failure issue.	0-1440 min	5

Signal Response

This screen allows the Administrator to select those routes and plans for the individual postures. There are three (3) selections on this screen that relate to the generic event locations of Freeway, Express Lanes, and Arterial.

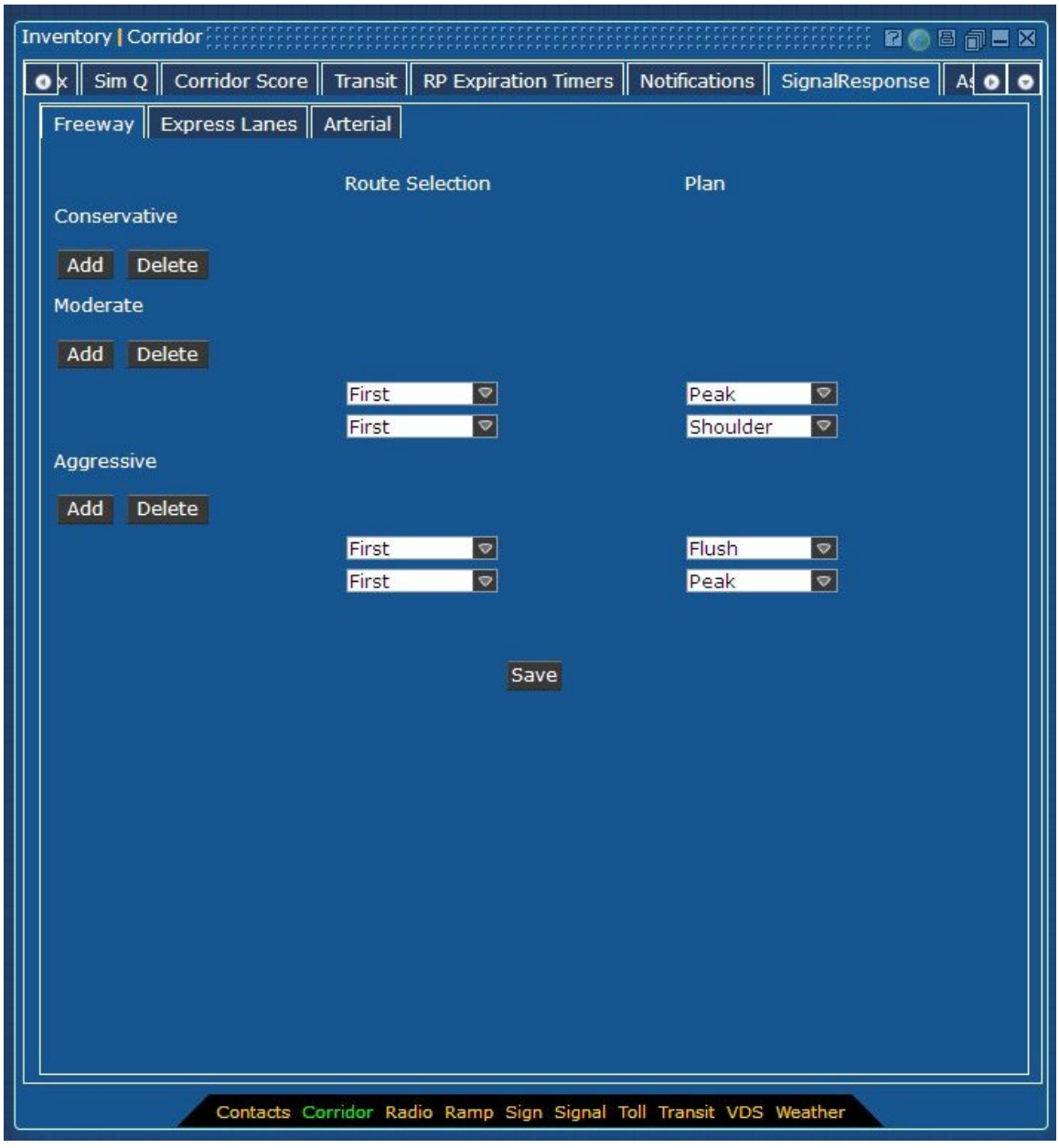


FIGURE 30: CORRIDOR – SIGNAL RESPONSE (FREEWAY)

Freeway Signal Response Information

TABLE 28: SIGNAL RESPONSE – FREEWAY SIGNAL INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Conservative – Route Selection	Route selection options for Conservative Response Plans	0-10 entries	None (0)
Conservative – Plan	Plan selection options for Conservative Response Plans	0-10 entries	None (0)
Moderate – Route Selection	Route selection options for Moderate Response Plans	0-10 entries	2 (TBD)
Moderate – Plan	Plan selection options for Moderate Response Plans	0-10 entries	2 (TBD)
Aggressive – Route Selection	Route selection options for Aggressive Response Plans	0-10 entries	3 (TBD)
Aggressive - Plan	Plan selection options for Aggressive Response Plans	0-10 entries	2 (TBD)

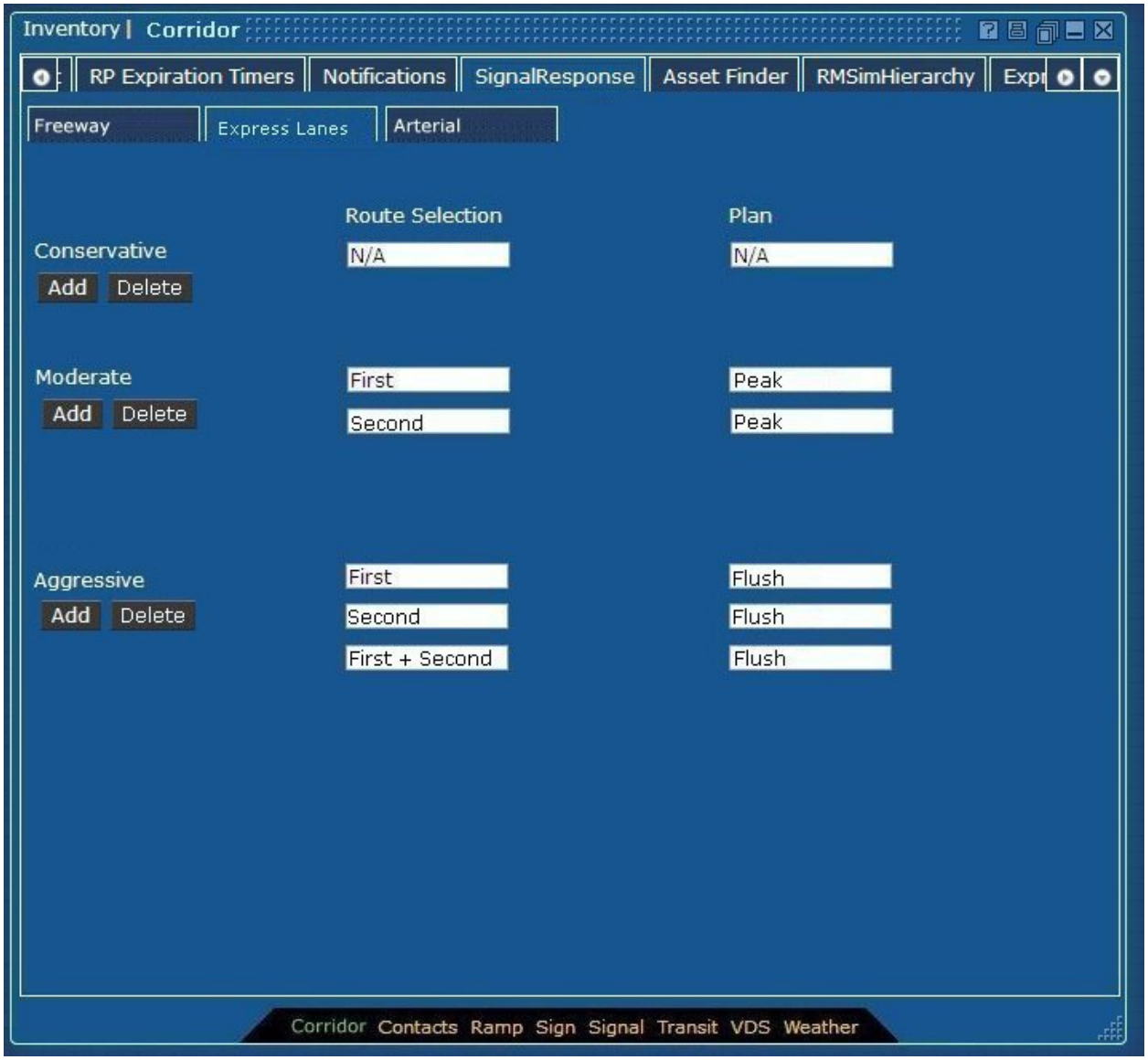


FIGURE 31: CORRIDOR – SIGNAL RESPONSE (EXPRESS LANES)

Express Lanes Signal Response Information

TABLE 29: SIGNAL RESPONSE – EXPRESS LANES INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Conservative – Route Selection	Route selection options for Conservative Response Plans	0-10 entries	None (0)
Conservative – Plan	Plan selection options for Conservative Response Plans	0-10 entries	None (0)
Moderate – Route Selection	Route selection options for Moderate Response Plans	0-10 entries	None (0)
Moderate – Plan	Plan selection options for Moderate Response Plans	0-10 entries	None (0)

Field Name	Description	Range	Default
Aggressive – Route Selection	Route selection options for Aggressive Response Plans	0-10 entries	3 (TBD)
Aggressive - Plan	Plan selection options for Aggressive Response Plans	0-10 entries	2 (TBD)

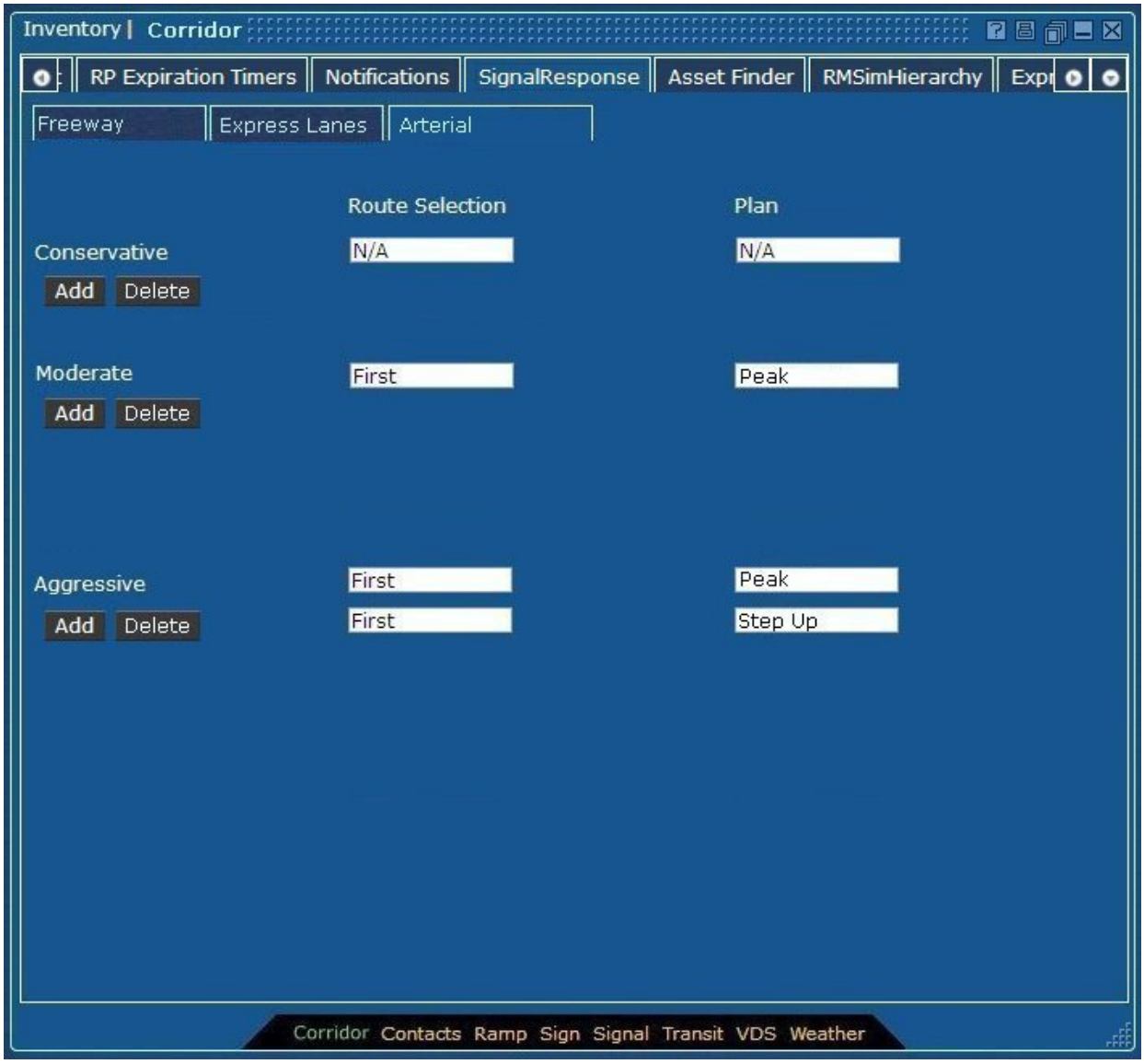


FIGURE 32: CORRIDOR – SIGNAL RESPONSE (ARTERIAL)

Arterial Signal Response Information

TABLE 30: SIGNAL RESPONSE – ARTERIAL INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Conservative – Route Selection	Route selection options for Conservative Response Plans	0-10 entries	None (0)
Conservative – Plan	Plan selection options for Conservative Response Plans	0-10 entries	None (0)
Moderate – Route Selection	Route selection options for Moderate Response Plans	0-10 entries	2 (TBD)
Moderate – Plan	Plan selection options for Moderate Response Plans	0-10 entries	1 (TBD)
Aggressive – Route Selection	Route selection options for Aggressive Response Plans	0-10 entries	2 (TBD)
Aggressive - Plan	Plan selection options for Aggressive Response Plans	0-10 entries	1 (TBD)

Asset Finder

This screen allows the Administrator to determine the distance to be used in finding the devices/assets to be used in response plans. "Lateral Distance" is the maximum distance to search parallel to the event's route for alternate routes. For the ramp meter device/assets, the distance is the maximum distance to search either upstream or downstream of the event's location for the devices.

For signs (DMS) devices/assets, the maximum distance is searched, as well as evaluating non-contiguous routes in relation to the event's location.

For each of the device/assets, the distance thresholds vary dependent upon whether the event is located on the freeway, the arterial, or the express lanes.

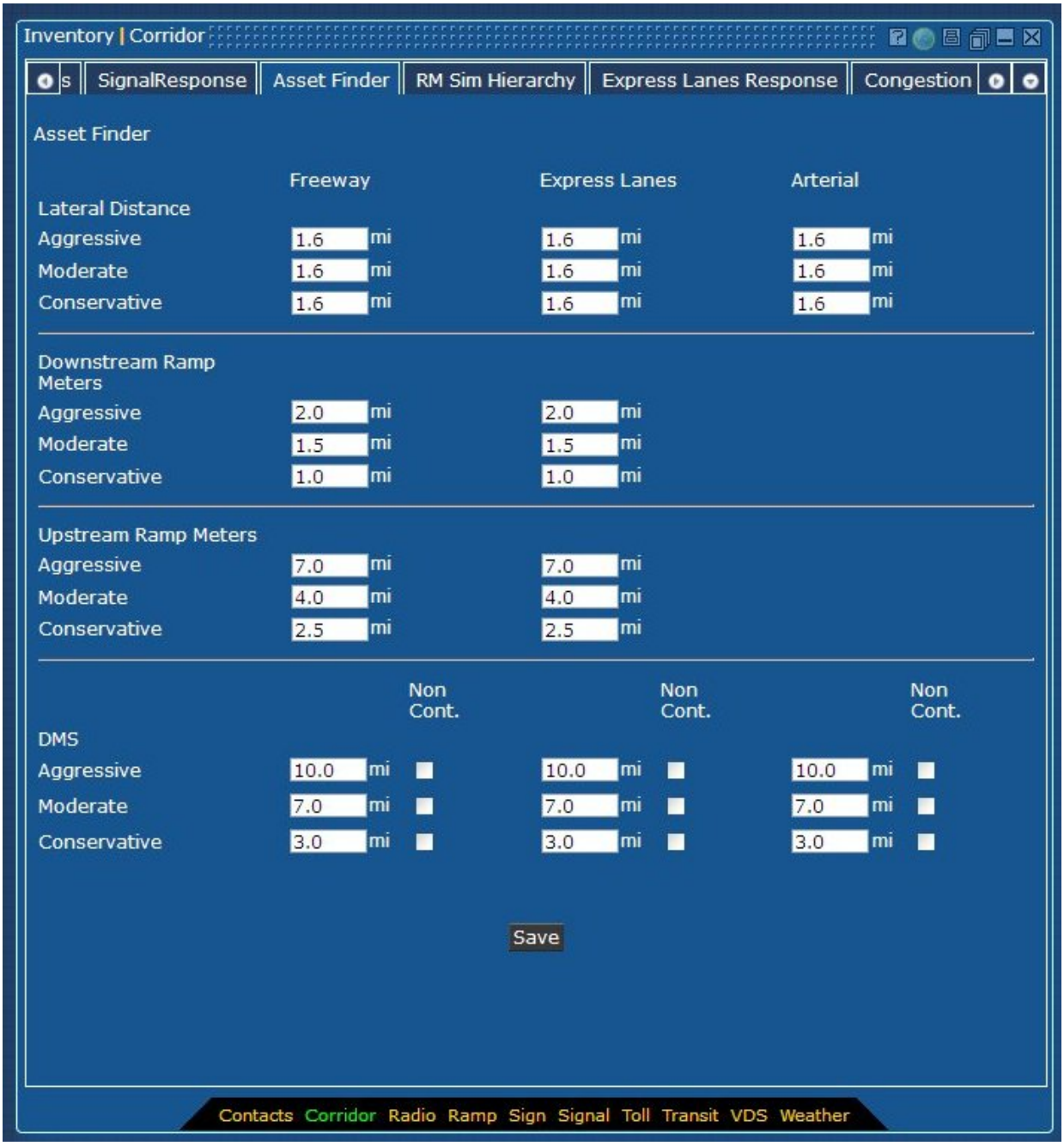


FIGURE 33: CORRIDOR - ASSET FINDER

Lateral Distance Information

TABLE 31: ASSET FINDER – LATERAL DISTANCE INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Aggressive – Freeway	The maximum distance to search parallel to the event's route for alternate routes for high impact freeway event	0 – 12 miles	7

Field Name	Description	Range	Default
Aggressive – Express Lanes	The maximum distance to search parallel to the event's route for alternate routes for high impact express lanes event	0 – 12 miles	7
Aggressive – Arterial	The maximum distance to search parallel to the event's route for alternate routes for high impact arterial event	0 – 12 miles	4
Moderate – Freeway	The maximum distance to search parallel to the event's route for alternate routes for medium impact freeway event	0 – 12 miles	4
Moderate – Express Lanes	The maximum distance to search parallel to the event's route for alternate routes for medium impact express lanes event	0 – 12 miles	0
Moderate – Arterial	The maximum distance to search parallel to the event's route for alternate routes for medium impact arterial event	0 – 12 miles	2
Conservative – Freeway	The maximum distance to search parallel to the event's route for alternate routes for low impact freeway event	0 – 12 miles	2
Conservative – Express Lanes	The maximum distance to search parallel to the event's route for alternate routes for low impact express lanes event	0 – 12 miles	0
Conservative – Arterial	The maximum distance to search parallel to the event's route for alternate routes for low impact arterial event	0 – 12 miles	0

Downstream Ramp Meter Information

TABLE 32: ASSET FINDER – DOWNSTREAM RAMP METER INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Aggressive – Freeway	The maximum distance to search downstream of the event's location for ramp meters for high impact freeway event	0 – 12 miles	2
Aggressive – Express Lanes	The maximum distance to search downstream of the event's location for ramp meters for high impact express lanes event	0 – 12 miles	2
Moderate – Freeway	The maximum distance to search downstream of the event's location for ramp meters for medium impact freeway event	0 – 12 miles	1.5
Moderate – Express Lanes	The maximum distance to search downstream of the event's location for ramp meters for medium impact express lanes event	0 – 12 miles	1.5
Conservative – Freeway	The maximum distance to search downstream of the event's location for ramp meters for low impact freeway event	0 – 12 miles	1
Conservative – Express Lanes	The maximum distance to search downstream of the event's location for ramp meters for low impact express lanes event	0 – 12 miles	1

Upstream Ramp Meter Information

TABLE 33: ASSET FINDER – UPSTREAM RAMP METER INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Aggressive – Freeway	The maximum distance to search upstream of the event's location for ramp meters for high impact freeway event	0 – 12 miles	7
Aggressive – Express Lanes	The maximum distance to search upstream of the event's location for ramp meters for high impact express lanes event	0 – 12 miles	7
Moderate – Freeway	The maximum distance to search upstream of the event's location for ramp meters for medium impact freeway event	0 – 12 miles	4
Moderate – Express Lanes	The maximum distance to search upstream of the event's location for ramp meters for medium impact express lanes event	0 – 12 miles	4
Conservative – Freeway	The maximum distance to search upstream of the event's location for ramp meters for low impact freeway event	0 – 12 miles	2.5
Conservative – Express Lanes	The maximum distance to search upstream of the event's location for ramp meters for low impact express lanes event	0 – 12 miles	2.5

Sign (DMS) Information

TABLE 34: ASSET FINDER – SIGN (DMS) INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Aggressive – Freeway	The maximum distance to search downstream of the event's location for signs (DMS) for high impact freeway event	0 – 12 miles	10
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for high impact freeway event	Yes/No	No
Aggressive – Express Lanes	The maximum distance to search downstream of the event's location for signs (DMS) for high impact express lanes event	0 – 12 miles	10
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for high impact express lanes event	Yes/No	No
Aggressive – Arterial	The maximum distance to search downstream for signs (DMS) for high impact arterial event	0 – 12 miles	10
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for high impact arterial event	Yes/No	No
Moderate – Freeway	The maximum distance to search downstream of the event's location for signs (DMS) for medium impact freeway event	0 – 12 miles	7
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for medium impact freeway event	Yes/No	No

Field Name	Description	Range	Default
Moderate – Express Lanes	The maximum distance to search downstream of the event's location for signs (DMS) for medium impact express lanes event	0 – 12 miles	7
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for medium impact express lanes event	Yes/No	No
Moderate – Arterial	The maximum distance to search downstream for signs (DMS) for medium impact arterial event	0 – 12 miles	7
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for medium impact arterial event	Yes/No	No
Conservative – Freeway	The maximum distance to search downstream of the event's location for signs (DMS) for low impact freeway event	0 – 12 miles	3
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for low impact freeway event	Yes/No	No
Conservative – Express Lanes	The maximum distance to search downstream of the event's location for signs (DMS) for low impact express lanes event	0 – 12 miles	3
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for low impact express lanes event	Yes/No	No
Conservative – Arterial	The maximum distance to search downstream for signs (DMS) for low impact arterial event	0 – 12 miles	3
Non-Contiguous Selection	Selection to determine if signs (DMS) off the primary event location route can be used for low impact arterial event	Yes/No	No

RMSimHierarchy

The Ramp Metering (RM) Simulation Hierarchy screen allows the Administrator to set the metering rate plans for the three (3) postures, conservative, moderate, and aggressive. The ability to override the traffic responsive strategy is also available to the Administrator. Selections available for the ramp meters are as follows:

- Do Nothing – Leave the ramp meter running the current selection
- Off – Turn the ramp meter off or dark
- Minimum Rate – Transition the ramp meter to using the established minimum rate
- Maximum Rate – Transition the ramp meter to using the established maximum rate

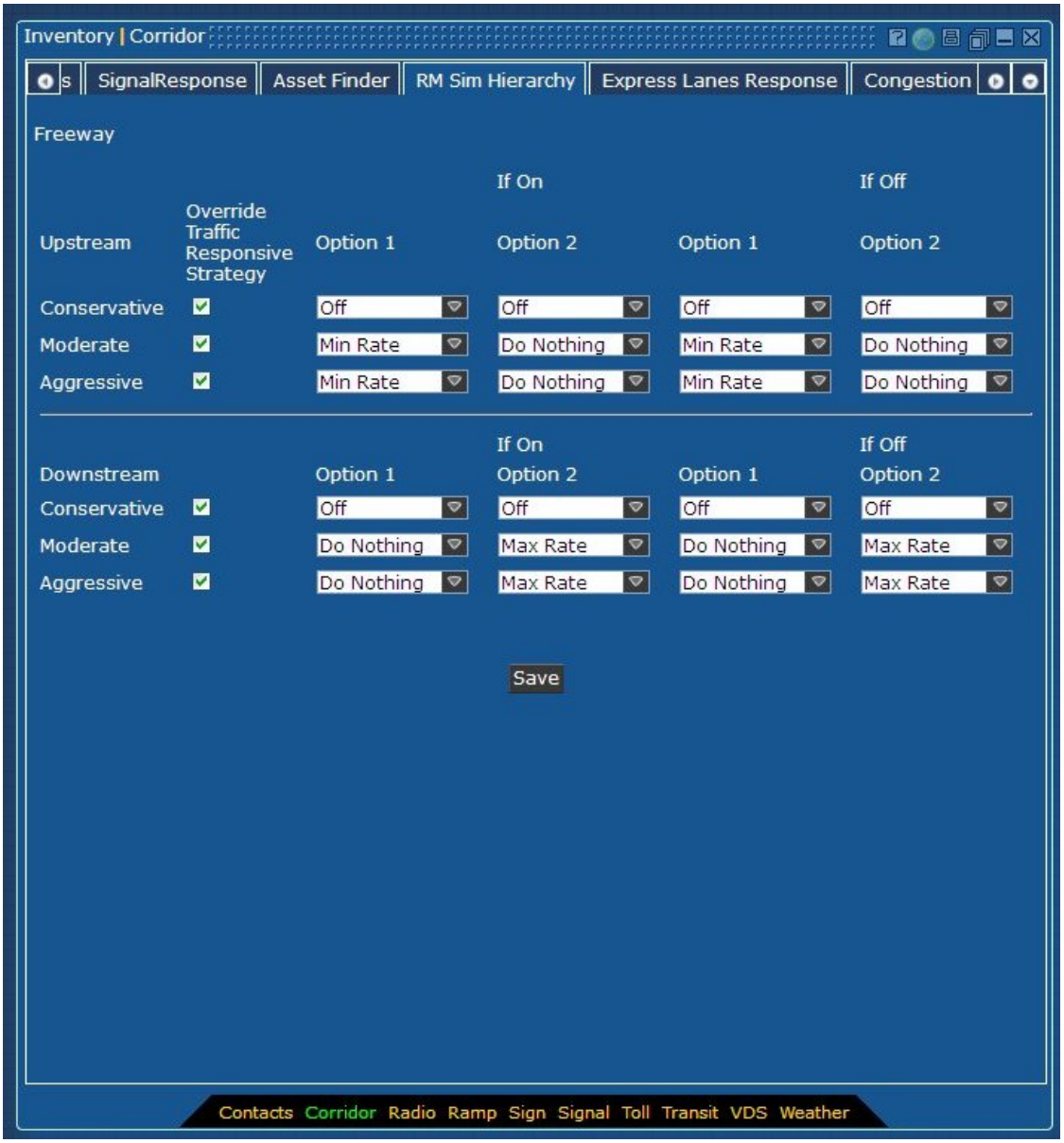


FIGURE 34: CORRIDOR – RMSIM HIERARCHY

RMS Upstream Information

TABLE 35: RMSIM HIERARCHY – UPSTREAM INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Conservative – Override Traffic Responsive Strategy	For the Conservative posture, either Yes (On) or No (Off) option to allow the Ramp Metering Response Actions to override existing Traffic Responsive operating plans.	Yes / No	No

Field Name	Description	Range	Default
Conservative – Option 1 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Conservative – Option 2 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Conservative – Option 1 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Conservative – Option 2 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Moderate – Override Traffic Responsive Strategy	On or off option to allow the Ramp Metering Response Actions to override existing Traffic Responsive operating plans.	Yes / No	No
Moderate – Option 1 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Moderate – Option 2 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Min Rate
Moderate – Option 1 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Off
Moderate – Option 2 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Min Rate
Aggressive – Override Traffic Responsive Strategy	On or off option to allow the Ramp Metering Response Actions to override existing Traffic Responsive operating plans.	Yes / No	No
Aggressive – Option 1 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Aggressive – Option 2 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Min Rate
Aggressive – Option 1 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Off

Field Name	Description	Range	Default
Aggressive – Option 2 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Min Rate

RMS Downstream Information

TABLE 36: RMSIM HIERARCHY – DOWNSTREAM INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Conservative – Override Traffic Responsive Strategy	Override the ramp meter controller for traffic responsive strategy for a conservative impact event	Yes / No	No
Conservative – Option 1 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Conservative – Option 2 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Conservative – Option 1 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Conservative – Option 2 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do Nothing
Moderate – Override Traffic Responsive Strategy	On or off option to allow the Ramp Metering Response Actions to override existing Traffic Responsive operating plans.	Yes / No	No
Moderate – Option 1 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do nothing
Moderate – Option 2 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Max Rate
Moderate – Option 1 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do nothing
Moderate – Option 2 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do nothing
Aggressive – Override Traffic Responsive Strategy	On or off option to allow the Ramp Metering Response Actions to override existing Traffic Responsive operating plans.	Yes / No	No

Field Name	Description	Range	Default
Aggressive – Option 1 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Max Rate
Aggressive – Option 2 – If On	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Off
Aggressive – Option 1 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do nothing
Aggressive – Option 2 – If Off	Ramp Metering Strategy under selected condition and strategy need.	Do Nothing, Minimum Rate, Maximum Rate, Off, or {Rate}	Do nothing

Congestion Event Finder

This screen allows the Administrator to establish the bridging effect between events and the distance that is approved for the locations, freeway and arterial. Bridging is the "bridging" of an event with another possible event either downstream or upstream of the location.

This determination of distance is dependent upon whether the event is on the freeway or the arterials. For the bridging effect, the user sees the maximum allowable distance that can be set.

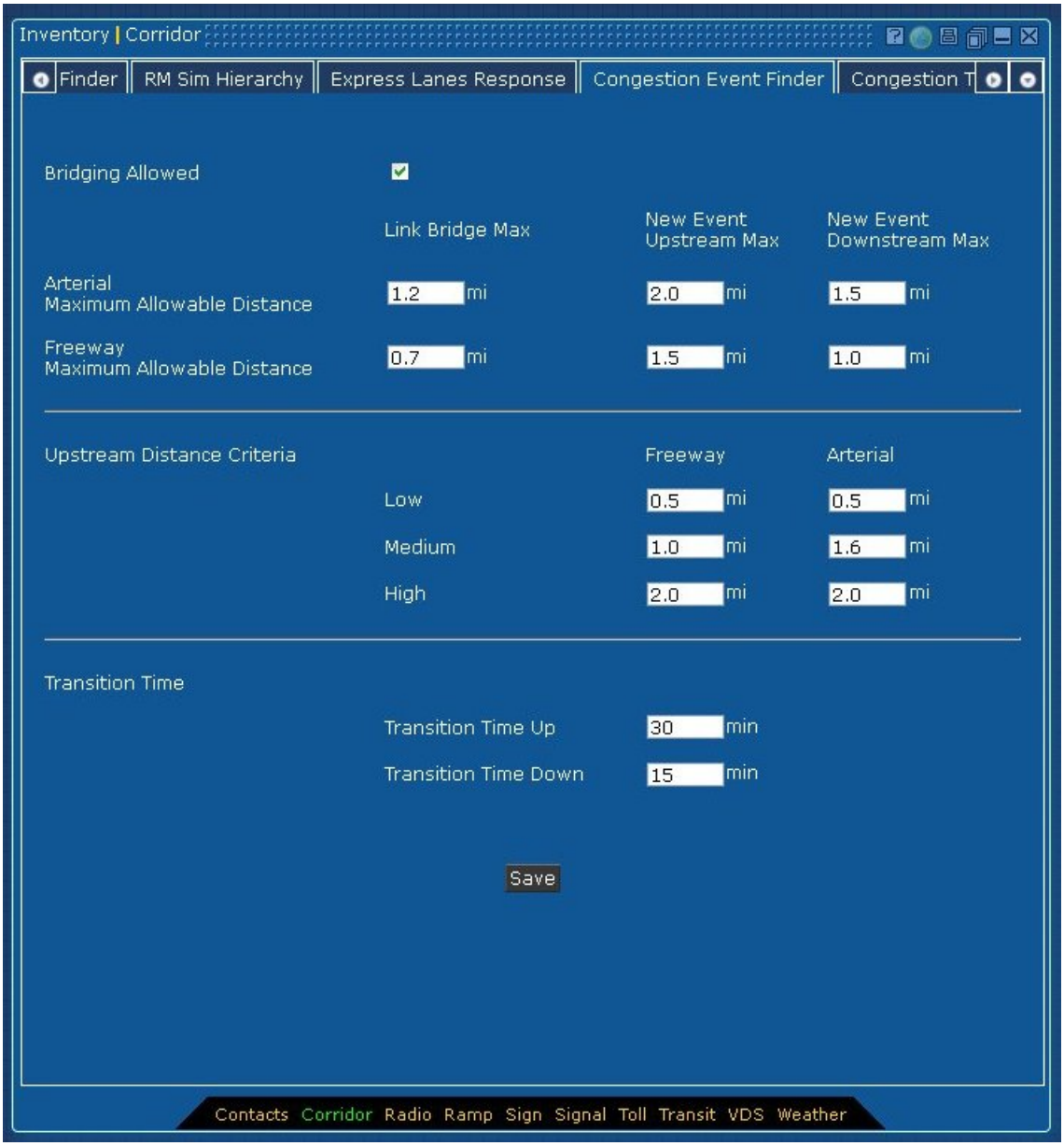


FIGURE 35: CORRIDOR – CONGESTION EVENT FINDER

General Information

TABLE 37: CONGESTION EVENT FINDER – GENERAL INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Bridging Allowed	Is bridging between links available for consideration?	Yes / No	Yes

Field Name	Description	Range	Default
Freeway – Maximum Allowable Distance – Link Bridge Max	If a Link is marked it must connect to either an upstream or downstream Link within this distance that is also marked (if not it is unmarked). If a Link is unmarked and is surrounded by Links upstream and downstream that are within this distance and are marked then it is also marked. This is for freeways	0-2 miles	.7
Freeway – Maximum Allowable Distance – New Event Upstream Max	When comparing existing and new congestion events the absolute distance between the upstream Links to declare as the same congestion event. This is for freeways	0 - 3 miles	1.5
Freeway – Maximum Allowable Distance – New Event Downstream Max	When comparing existing and new congestion events the absolute distance between the downstream Links to declare as the same event This is for freeways.	0 - 3 miles	1
Arterial – Maximum Allowable Distance – Link Bridge Max	If a Link is marked it must connect to either an upstream or downstream Link within this distance that is also marked (if not it is unmarked). If a Link is unmarked and is surrounded by Links upstream and downstream that are within this distance and are marked then it is also marked. This is for arterials.	0-3 miles	1.2
Arterial – Maximum Allowable Distance – New Event Upstream Max	When comparing existing and new congestion events the absolute distance between the upstream Links to declare as the same congestion event. This is for arterials.	0-3 miles	2
Arterial – Maximum Allowable Distance – New Event Downstream Max	When comparing existing and new congestion events the absolute distance between the downstream Links to declare as the same event This is for arterials.	0-3 miles	1.5
Arterial – Maximum Allowable Distance – Link Bridge Max	When comparing existing and new congestion events the absolute distance between the downstream Links to declare as the same event This is for arterials.	0-3 miles	1.5

Upstream Distance Information

TABLE 38: CONGESTION EVENT– UPSTREAM INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Freeway – Congestion Length Low.	Length to set impact as low for a freeway congestion event.	1 – 10 miles	0.5
Freeway – Congestion Length Medium	Length to set impact as medium for a freeway congestion event.	1 -10 miles	1
Freeway – Congestion Length High	Length to set impact as High for a freeway congestion event.	1 -10 miles	2

Field Name	Description	Range	Default
Arterial – Congestion Length Low.	Length to set impact as low for a arterial congestion event.	1 -10 miles	.7
Arterial – Congestion Length Medium	Length to set impact as medium for a arterial congestion event.	1 -10 miles	1.8
Arterial – Congestion Length High	Length to set impact as High for a arterial congestion event.	1 -10 miles	2.7
Freeway – Congestion Length Low.	Length to set impact as low for a freeway congestion event.	1 – 10 miles	0.5

Transition Time Information

TABLE 39: TRANSITION TIME – GENERAL INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Transition Up Time	When an events impact changes from a lower to a higher impact this represents the number of consecutive minutes the condition must persist to change the event's actual impact	0 – 30 mins	10
Transition Down Time	When an events impact changes from a higher to a lower impact this represents the number of consecutive minutes the condition must persist to change the event's actual impact	0 – 30 mins	20

Congestion Thresholds

This screen will allow the Administrator to view those thresholds that are being used to determine congestion events in the corridor. As congestion is different on freeways and arterial roadways, there are two (2) sets of congestion thresholds used.

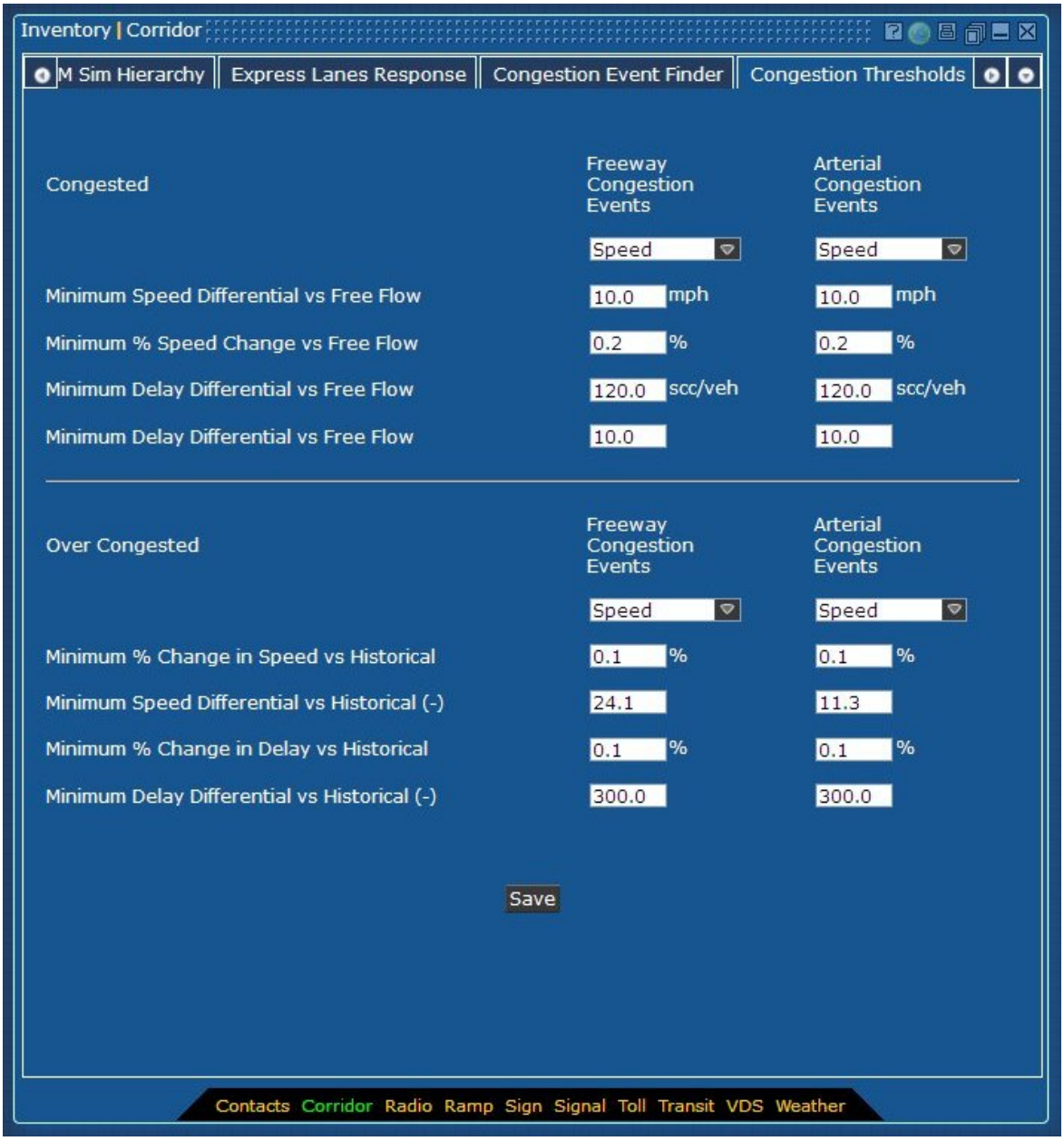


FIGURE 36: CORRIDOR – CONGESTION THRESHOLDS

Congested Information

TABLE 40: CONGESTION THRESHOLDS – CONGESTED INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Speed or Delay or V/C	Selection of threshold value to be used in calculations for a freeway congestion event	N/A	Speed
Minimum Speed Differential vs Free Flow – Freeway Congestion Events	The speed differential from the speed limit for determining if a freeway link is congested. Used when Speed is the chosen MOE	1-20 mph	10

Field Name	Description	Range	Default
Minimum % Speed Change vs Free Flow – Freeway Congestion Events	The speed difference from the speed limit as a percentage from the speed limit for determining if a freeway link is congested. Used when Speed is the chosen MOE	1-30%	15
Minimum Delay Differential vs Free Flow – Freeway Congestion Events	The delay differential from no delay determining if a freeway link is congested. Used when Delay is the chosen MOE	30- 300 sec/veh/mi	120
Minimum V/C Differential vs Free Flow – Freeway Congestion Events	The V/C determining if a freeway link is congested. Used when v/c is the chosen MOE	.7 TO .99	.85
Speed or Delay or V/C	Allows the choice of a single MOE to detect congested and over congested links.	N/A	Speed
Minimum Speed Differential vs Free Flow – Arterial Congestion Events	The speed differential from the speed limit for determining if an arterial link is congested. Used when Speed is the chosen MOE	1-20 mph	7
Minimum % Speed Change vs Free Flow – Arterial Congestion Events	The speed difference from the speed limit as a percentage from the speed limit for determining if an arterial link is congested. Used when Speed is the chosen MOE	1-30%	10
Minimum Delay Differential vs Free Flow – Arterial Congestion Events	The delay differential from no delay determining if an arterial link is congested. Used when Delay is the chosen MOE	30- 300 sec/veh/mi	100
Minimum V/C Differential vs Free Flow – Arterial Congestion Events	The V/C determining if an arterial link is congested. Used when v/c is the chosen MOE	.7 TO .99	.80

Over Congested Information

TABLE 41: CONGESTION THRESHOLDS – OVER CONGESTED INFORMATION ENTRY FIELDS

Field Name	Description	Range	Default
Speed or Delay	Allows the choice of a single MOE to detect congested and over congested links.	N/A	Speed
Minimum % Change in Speed vs Historical – Freeway Congestion Events	The speed difference from historical as a percentage from historical for determining if a freeway link is over congested. Used when Speed is the chosen MOE	1-25%	5
Minimum Speed Differential vs Historical – Freeway Congestion Events	The speed differential from historical for determining if a freeway link is over congested. Used when Speed is the chosen MOE	1-20 mph	7
Minimum % Change in Delay vs Historical – Freeway Congestion Events	The delay difference from historical as a percentage from the historical for determining if a freeway link is over congested. Used when delay is the chosen MOE	1-25%	8%
Minimum Delay Differential vs Historical – Freeway Congestion Events	The delay differential from historical delay determining if a freeway link is over congested. Used when Delay is the chosen MOE	20-300 sec/veh/mi	90

Field Name	Description	Range	Default
Speed or Delay	Allows the choice of a single MOE to detect congested and over congested links.	N/A	Speed
Minimum % Change in Speed vs Historical – Arterial Congestion Events	The speed difference from historical as a percentage from historical for determining if an arterial link is over congested. Used when Speed is the chosen MOE	1-25%	5
Minimum Speed Differential vs Historical – Arterial Congestion Events	The speed differential from historical for determining if an arterial link is over congested. Used when Speed is the chosen MOE	1-20 mph	5
Minimum % Change in Delay vs Historical – Arterial Congestion Events	The delay difference from historical as a percentage from the historical for determining if an arterial link is over congested. Used when delay is the chosen MOE	1-25%	8
Minimum Delay Differential vs Historical – Arterial Congestion Events	The delay differential from historical delay determining if an arterial link is over congested. Used when Delay is the chosen MOE	20-300 sec/veh/mi	80

Using a Ramp Inventory Window

The Ramp Inventory window shows the information stored in the database for a ramp meter station owned by the organization.

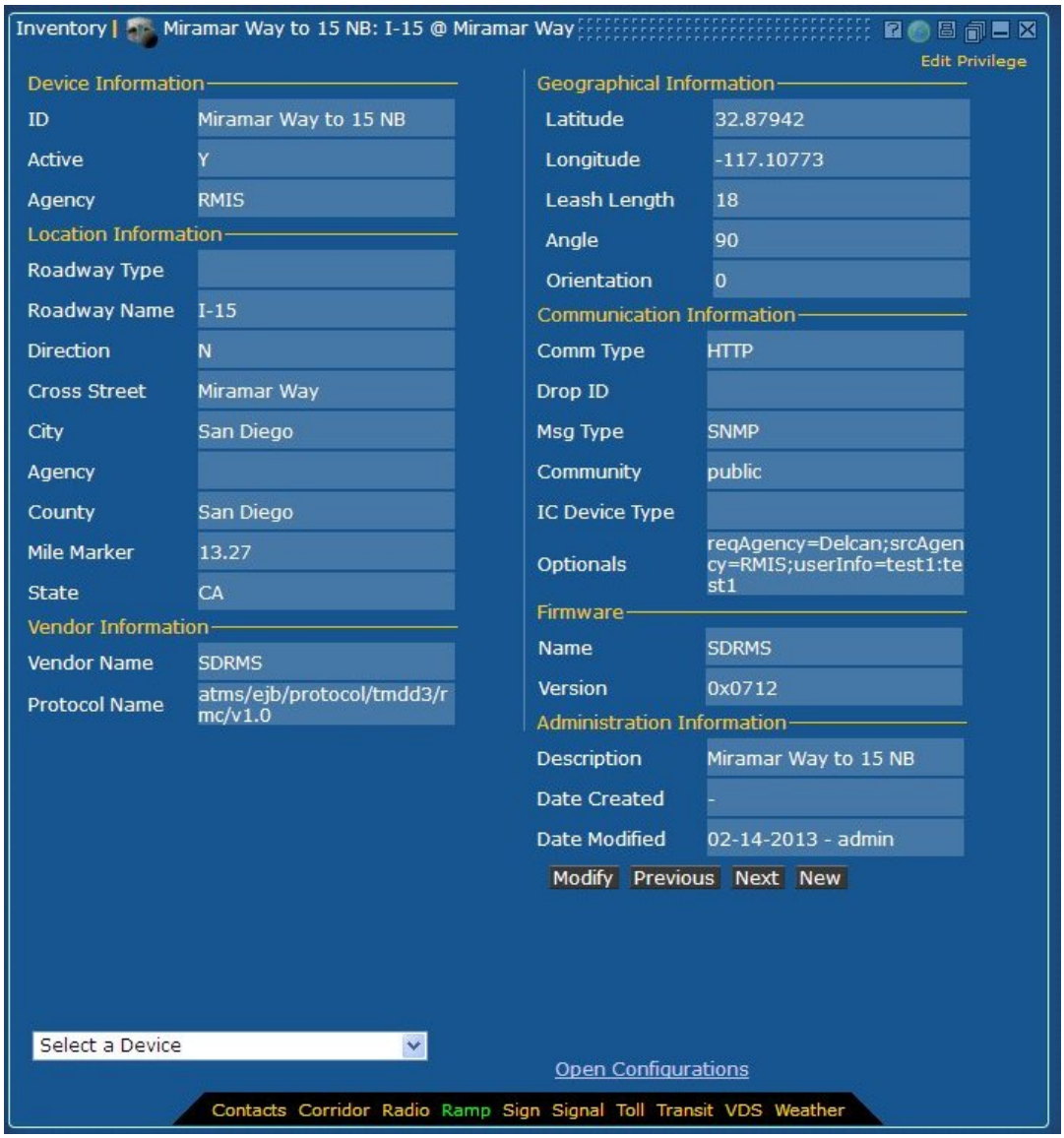


FIGURE 37: INVENTORY DISPLAY FORM FOR RAMP

Ramp Inventory Privileges

The system contains one privilege which controls Ramp Inventory window usage: RMC Inventory Edit.

If the user does not have RMC Inventory Edit privilege set, the Ramp Inventory window will open in View Only mode. In View Only mode, a user can see the stored information about any station, and can page through the list of stations using the next and previous buttons, but cannot add, modify or delete stations. The "View Only" tag appears at the top of the Inventory window.

If the user has RMC Inventory Edit privilege, that user can add, modify or delete Ramps. The tag "Edit Privilege" appears at the top of the Inventory window.

For further information on how to configure operators and set privileges, please see the Administration section of this document.

Entering Information into a Ramp Inventory Entry and Modify Form

The fields in the Ramp Inventory entry and modify form are explained below.

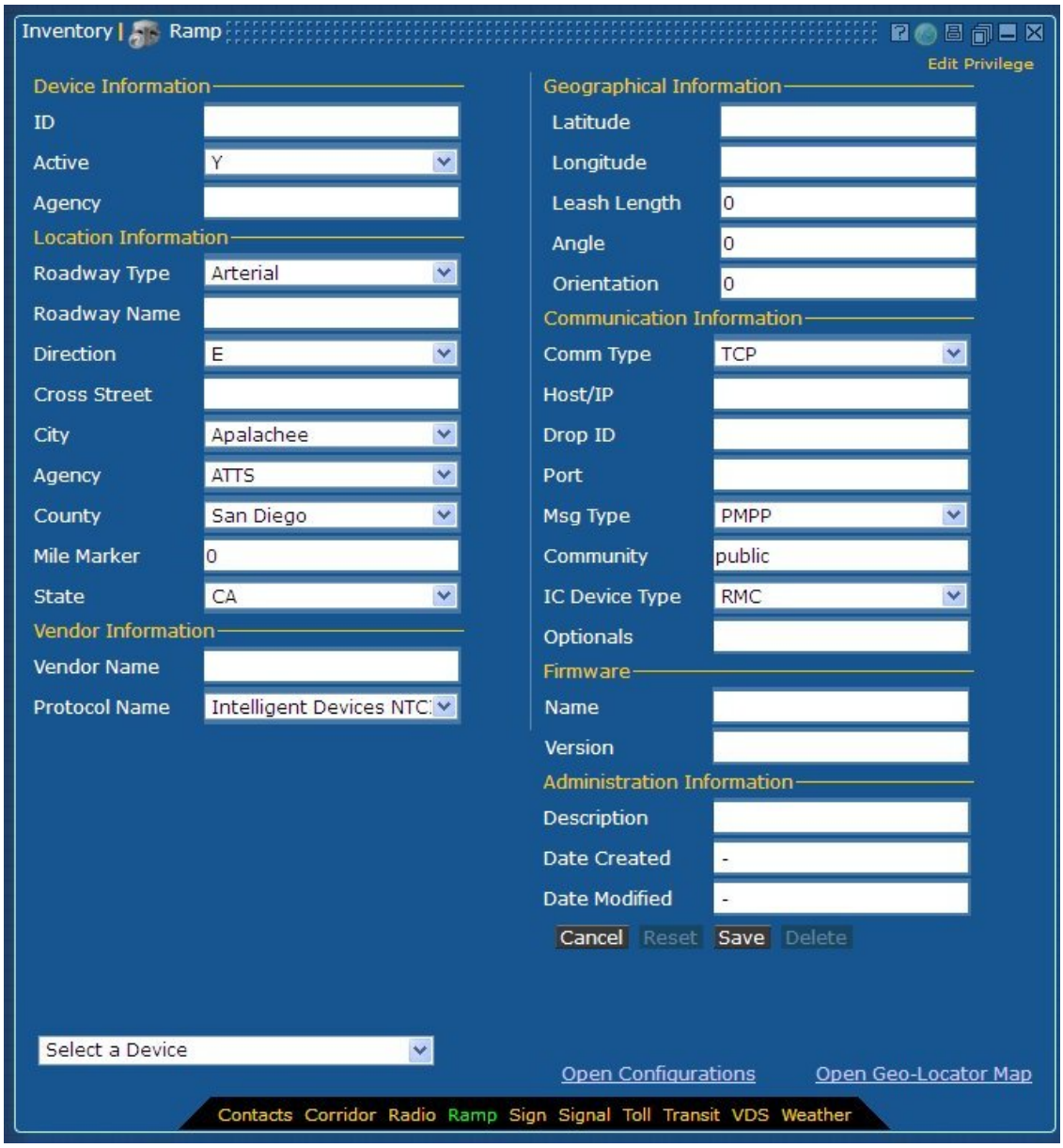


FIGURE 38: INVENTORY MODIFY FORM FOR RAMP

Device Information

TABLE 42: DEVICE INFORMATION ENTRY FIELDS

Field Name	Action
ID	Enter the agency-assigned ID for the new ramp.

Field Name	Action
Active	Indicates whether the ramp is active in the inventory.
Agency	Enter the Owning agency

Location Information

TABLE 43: LOCATION INFORMATION ENTRY FIELDS

Field Name	Action
Roadway Type	Select that best describes the roadway or roadway segment on which the ramp is located. The allowed types are: Arterial, Intersection, Interstate, Ramp, State Highway, Toll Road, Tunnel, U.S. Highway.
Roadway Name	Enter the name of the roadway.
Direction	Enter the direction the sign covers.
Cross Street	Enter the cross street, if applicable.
City	Enter the city name.
District	Enter the district name. This field will affect which list the device falls under when privileges are being assigned.
County	Select the county name.
Mile Marker	Enter the mile marker, if applicable.
State	Enter the State.

Geographic Information

TABLE 44: GEOGRAPHIC INFORMATION ENTRY FIELDS

Field Name	Action
Latitude	Enter the latitude or open the geo-locator map to determine latitude.
Longitude	Enter the longitude or open the geo-locator map to determine longitude.
Leash Length	Enter the leash length or open the geo-locator map to determine leash length
Angle	Enter the angle or open the geo-locator map to determine the angle
Orientation	Enter the orientation or open the geo-locator map to determine the orientation

Communication Information

TABLE 45: COMMUNICATION INFORMATION ENTRY FIELDS

Field Name	Action
Comm Type	Select the communication type. The allowed types are: Dial-up, Serial, TCP, and UDP.
If TCP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Port	Enter the port number.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If UDP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Port	Enter the port number.
Msg Type	Select the message type for the ramp. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Serial	
Comm Name	This is the communications port.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Baud Rate	Select a baud rate from the drop-down menu.
PDS Bit	Select the parity, data, and stop bit from the drop-down menu.
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the ramp. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*

Field Name	Action
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Dial-Up	
Phone Number	Enter the phone number for the ramp.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the ramp. Some of the supported message types are PMPP, and SNMP. Apply to NTCIP Protocol only.
Community	Enter the community information. Apply to NTCIP Protocol only.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If N/A	
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the ramp. Some of the supported message types are PMPP, and SNMP. Apply to NTCIP Protocol only.
Community	Enter the community information. Apply to NTCIP Protocol only.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.

Administration Information

TABLE 46: ADMINISTRATION INFORMATION FIELDS

Field Name	Action
Description	Enter description for ramp
Date Created	Date of record creation; automatically created when a ramp is saved.
Date Modified	Date of last record modification; automatically created or changed as needed.

Using a Sign Inventory Window

The Sign Inventory window shows the information stored in the database for a dynamic message sign owned by the organization.

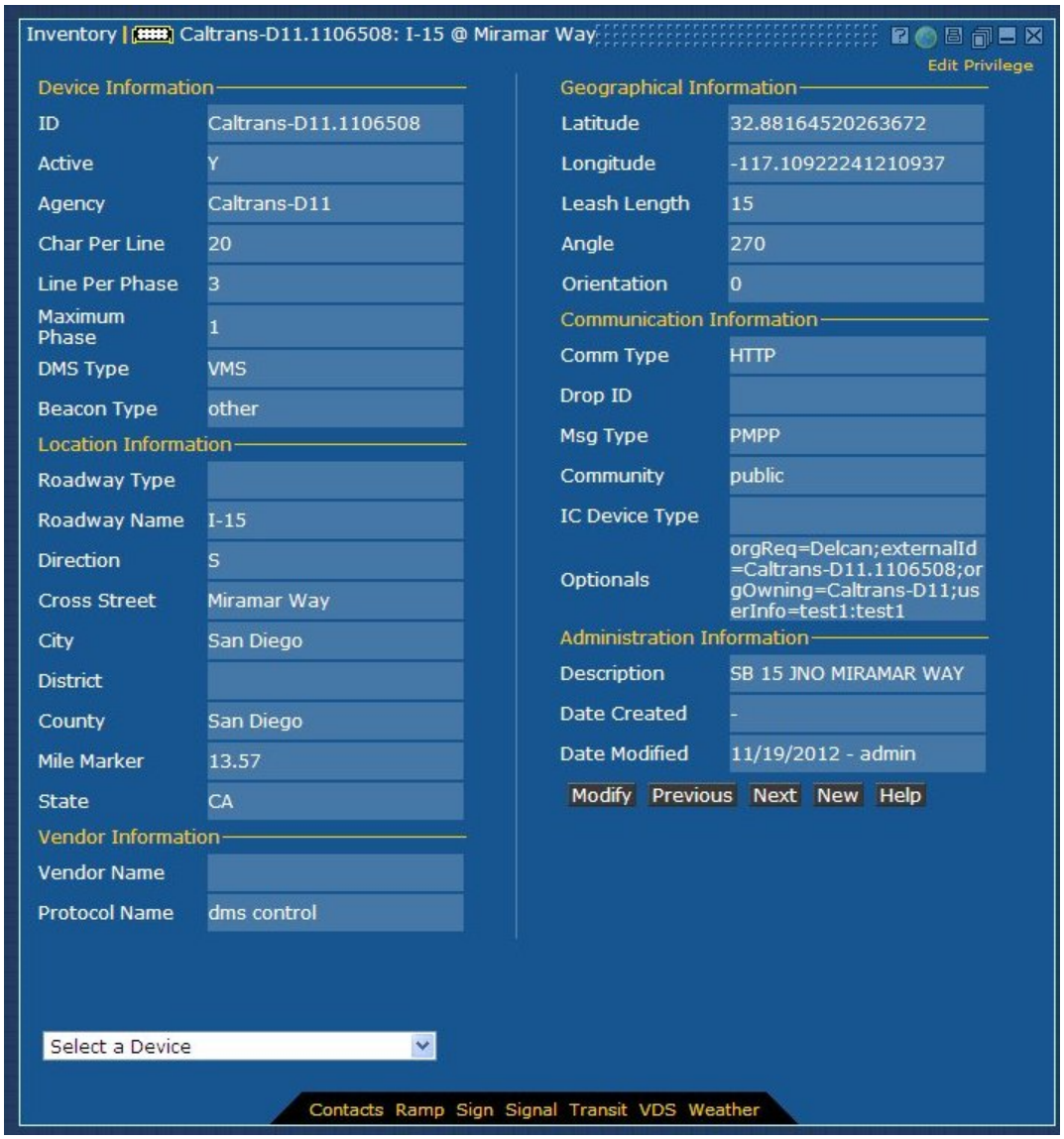


FIGURE 39: INVENTORY DISPLAY FORM FOR SIGN

Sign Inventory Privileges

The system contains one privilege which controls Sign Inventory window usage: *DMS Inventory Edit*.

If the user does not have Sign Inventory Edit privilege set, the Sign Inventory window will open in View Only mode. In View Only mode, a user can see the stored information about any sign, and can page through the list of signs using the next and previous buttons, but cannot add, modify, or delete signs. The "View Only" tag appears at the top of the Inventory window.

If the user has DMS Inventory Edit privilege, that user can add, modify or delete signs. The tag "Edit Privilege" appears at the top of the Inventory window when a user has the DMS Inventory Edit privilege.

For further information on how to configure operators and set privileges, please see the Administration section of this document.

NOTE: Prior to deleting a Sign from the inventory, always check to make sure that the Sign is not currently displaying any travel time messages or response plan. If the Sign is currently used in a response plan, remove it from the response plan prior to deleting from the inventory.

Entering Information into the Sign Inventory Entry and Modify Form

The fields in the Sign Inventory entry and modify form are explained below.

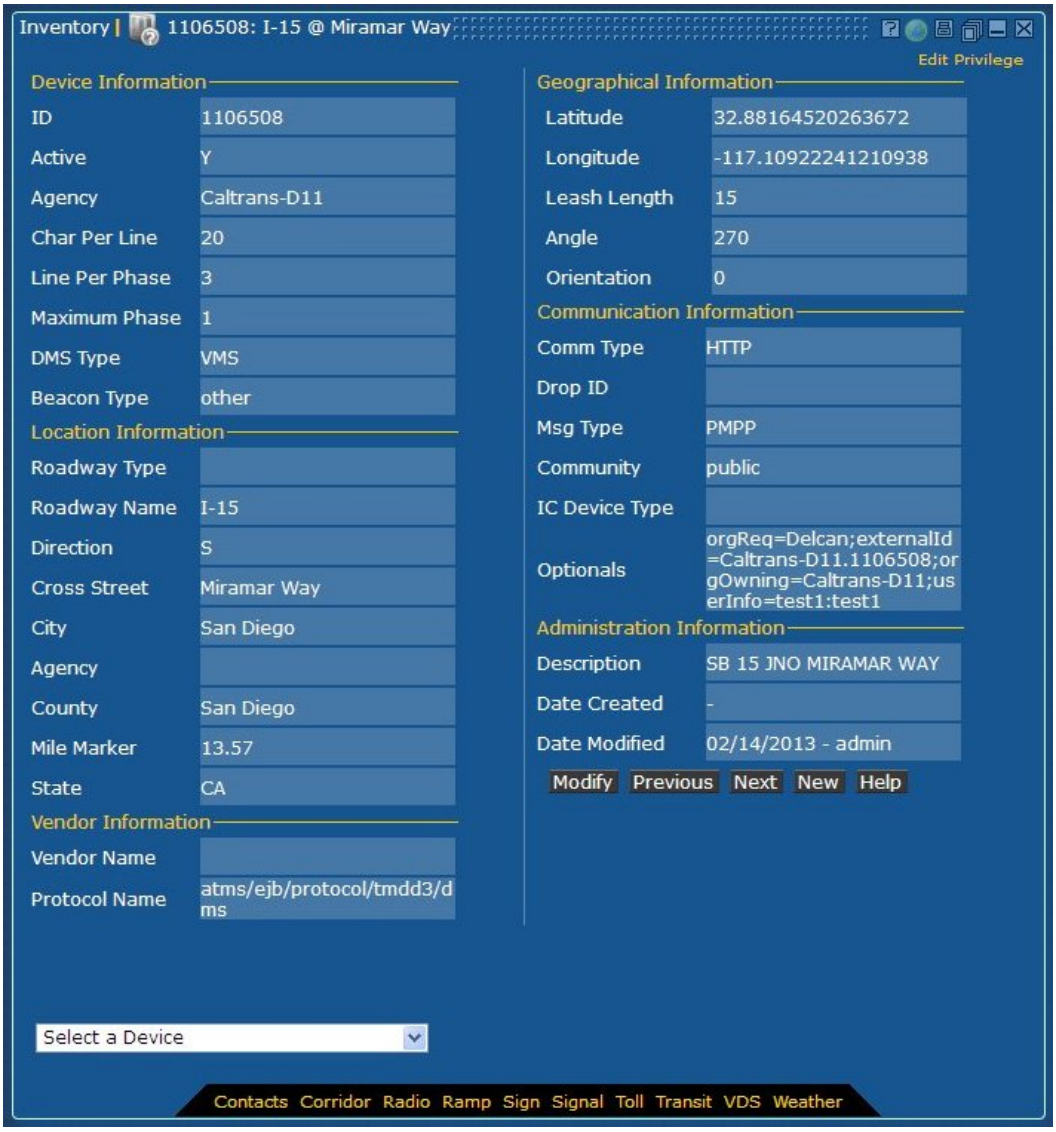


FIGURE 40: INVENTORY MODIFY FORM FOR SIGN

Device Information

TABLE 47: DEVICE INFORMATION ENTRY FIELDS

Field Name	Description
ID	Enter the agency-assigned ID for the sign.
Active	Enter Y if the sign is going to be used; N for if the sign will not be used
Char Per Line	Enter the number of characters per line allowed by the sign, maximum 21.
Lines Per Phase	Enter the number of lines per phase allowed by the sign, maximum 3.
Maximum Phase	Enter the maximum number of phases allowed by the sign, maximum 3.
DMS Type	Select the type of the sign. This setting controls icon appearance in the Map and List windows.
Beacon Type	Select the type of beacon associated with the DMS.

Location Information

TABLE 48: LOCATION INFORMATION ENTRY FIELDS

Field Name	Description
Roadway Type	Select that best describes the roadway or roadway segment on which the sign is located. The allowed types are: Arterial, Intersection, Interstate, Ramp, State Highway, Toll Road, Tunnel, U.S. Highway.
Roadway Name	Enter the name of the roadway.
Direction	Enter the direction the sign covers.
Cross Street	Enter the cross street, if applicable.
City	Enter the city name.
District	Enter the district owner. This field will affect which list the device falls under when privileges are being assigned.
County	Select the county name.
Mile Marker	Enter the mile marker, if applicable.
State	Enter the State.

Vendor Information

TABLE 49: VENDOR INFORMATION ENTRY FIELDS

Field Name	Description
Vendor Name	Select the vendor name.
Protocol name	Select the protocol name for communication purposes.

Geographic Information

TABLE 50: GEOGRAPHIC INFORMATION ENTRY FIELDS

Field Name	Description
Latitude	Enter the latitude or open the geo-locator map to determine latitude.
Longitude	Enter the longitude or open the geo-locator map to determine longitude.
Leash Length	Enter the leash length or open the geo-locator map to determine leash length
Angle	Enter the angle or open the geo-locator map to determine angle
Orientation	Enter the orientation or open the geo-locator map to determine orientation

Communication Information

TABLE 51: COMMUNICATION INFORMATION ENTRY FIELDS

Field Name	Description
Comm Type	Select the communication type. The allowed types are: Dial-up, Serial, TCP, UDP, and N/A.
If TCP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the DMS.
Port	Enter the port number.
Msg Type	Select the message type for the DMS. Some of the supported message types are PMPP, PMPPMarkIV, PMPPVermac, and SNMP.
Community	Enter the community information.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If UDP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the DMS.
Port	Enter the port number.
Msg Type	Select the message type for the DMS. Some of the supported message types are PMPP, PMPPMarkIV, PMPPVermac, and SNMP.
Community	Enter the community information.

Field Name	Description
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Serial	
Comm Name	This is the communications port.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Baud Rate	Select a baud rate from the drop-down menu.
PDS Bit	Select the parity, data, and stop bit from the drop-down menu.
Drop ID	Enter the drop ID for the DMS.
Msg Type	Select the message type for the DMS. Some of the supported message types are PMPP, PMPPMarkIV, PMPPVermac, and SNMP.
Community	Enter the community information.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Dial-Up	
Phone Number	This would be the phone number.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Drop ID	Enter the drop ID for the DMS.
Msg Type	Select the message type for the DMS. Some of the supported message types are PMPP, PMPPMarkIV, PMPPVermac, and SNMP.
Community	Enter the community information.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If N/A	
Drop ID	Enter the drop ID for the DMS.
Msg Type	Select the message type for the DMS. Some of the supported message types are PMPP, PMPPMarkIV, PMPPVermac, and SNMP.
Community	Enter the community information.

Field Name	Description
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.

Administration Information

TABLE 52: ADMINISTRATION INFORMATION ENTRY FIELDS

Field Name	Action
Description	Enter a description for the sign.
Date Created	Date of record creation; automatically created when sign is saved.
Date Modified	Date of last record modification; automatically created or changed as needed.

Using a Signal Inventory Window

The Signal Inventory window shows the information stored in the database for a traffic signal owned by the organization.

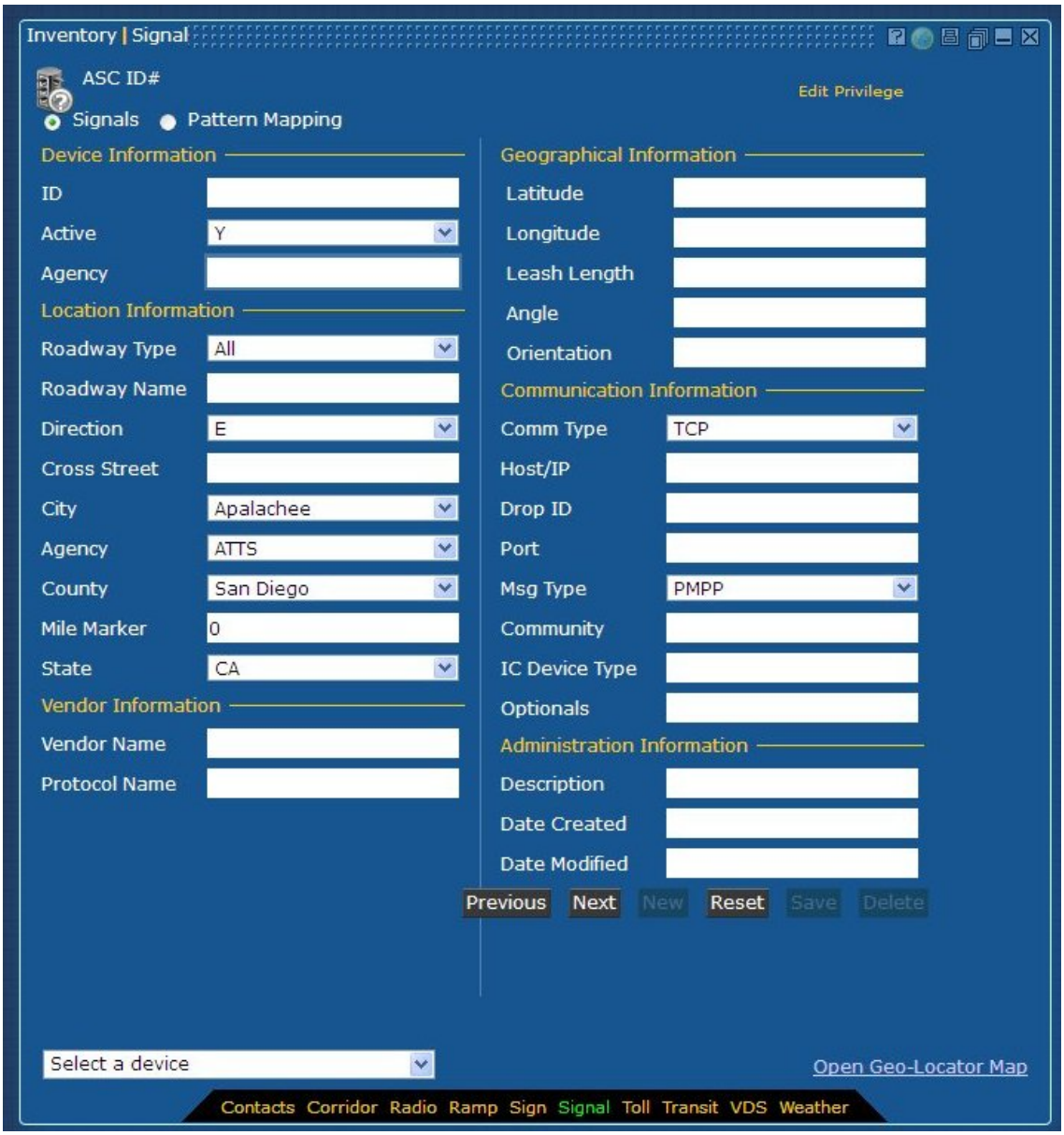


FIGURE 41: INVENTORY DISPLAY FORM FOR SIGNAL

Signal Inventory Privileges

The system contains one privilege which controls Signal Inventory window usage: ASC Inventory Edit.

If the user does not have ASC Inventory Edit privilege set, the Signal Inventory window will open in View Only mode. In View Only mode, a user can see the stored information about any signal, and can page through the list of signals using the next and previous buttons, but cannot add, modify or delete stations. The "View Only" tag appears at the top of the Inventory window.

If the user has ASC Inventory Edit privilege, that user can add, modify or delete signals. The tag "Edit Privilege" appears at the top of the Inventory window.

For further information on how to configure operators and set privileges, please see the Administration section of this document.

Entering Information into a Signal Inventory Entry and Modify Form

The fields in the Signal Inventory entry and modify form are explained below.

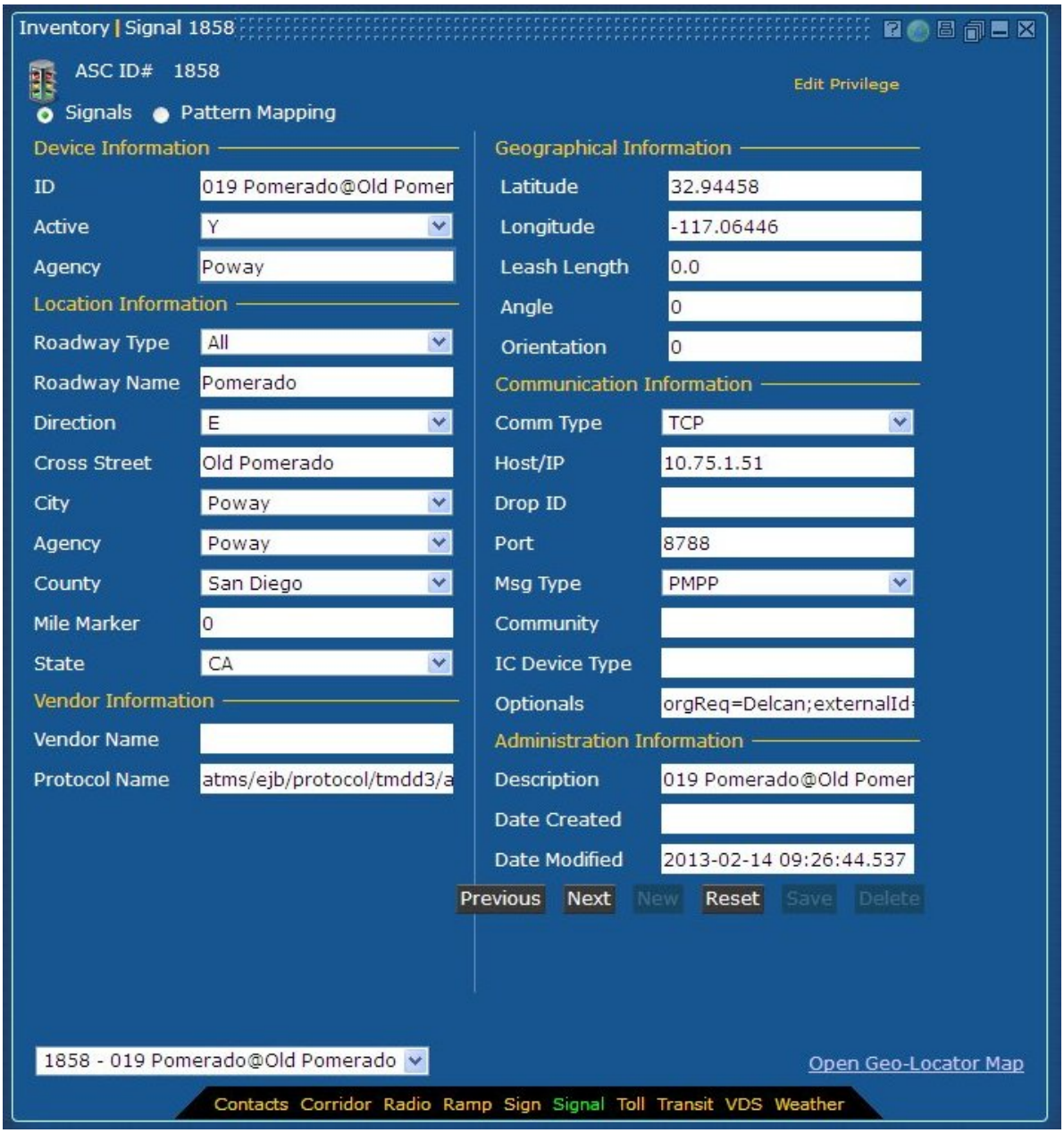


FIGURE 42: INVENTORY MODIFY FORM FOR SIGNAL

Device Information

TABLE 53: DEVICE INFORMATION ENTRY FIELDS

Field Name	Action
ID	Enter the agency-assigned ID for the new signal.
Active	Indicates whether the signal is active in the inventory.
Agency	Enter the owning agency

Location Information

TABLE 54: LOCATION INFORMATION ENTRY FIELDS

Field Name	Action
Roadway Type	Select that best describes the roadway or roadway segment on which the camera is located. The allowed types are: Arterial, Intersection, Interstate, Ramp, State Highway, Toll Road, Tunnel, U.S. Highway.
Roadway Name	Enter the name of the roadway.
Direction	Enter the direction the sign covers.
Cross Street	Enter the cross street, if applicable.
City	Enter the city name.
District	Enter the district name. This field will affect which list the device falls under when privileges are being assigned.
County	Select the county name.
Mile Marker	Enter the mile marker, if applicable.
State	Enter the State.

Geographic Information

TABLE 55: GEOGRAPHIC INFORMATION ENTRY FIELDS

Field Name	Action
Latitude	Enter the latitude or open the geo-locator map to determine latitude.
Longitude	Enter the longitude or open the geo-locator map to determine longitude.
Leash Length	Enter the leash length or open the geo-locator map to determine leash length
Angle	Enter the angle or open the geo-locator map to determine the angle
Orientation	Enter the orientation or open the geo-locator map to determine the orientation

Communication Information

TABLE 56: COMMUNICATION INFORMATION ENTRY FIELDS

Field Name	Action
Comm Type	Select the communication type. The allowed types are: Dial-up, Serial, TCP, and UDP.
If TCP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Port	Enter the port number.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If UDP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Port	Enter the port number.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Serial	
Comm Name	This is the communications port.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Baud Rate	Select a baud rate from the drop-down menu.
PDS Bit	Select the parity, data, and stop bit from the drop-down menu.
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*

Field Name	Action
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Dial-Up	
Phone Number	Enter the phone number for the sign.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. Apply to NTCIP Protocol only.
Community	Enter the community information. Apply to NTCIP Protocol only.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If N/A	
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. Apply to NTCIP Protocol only.
Community	Enter the community information. Apply to NTCIP Protocol only.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.

Administration Information

TABLE 57: ADMINISTRATION INFORMATION FIELDS

Field Name	Action
Description	Enter description for VDS.
Date Created	Date of record creation; automatically created when a station is saved.
Date Modified	Date of last record modification; automatically created or changed as needed.

Using a Transit Inventory Window

The Transit Inventory window shows the information stored in the database for a bus owned by the organization.

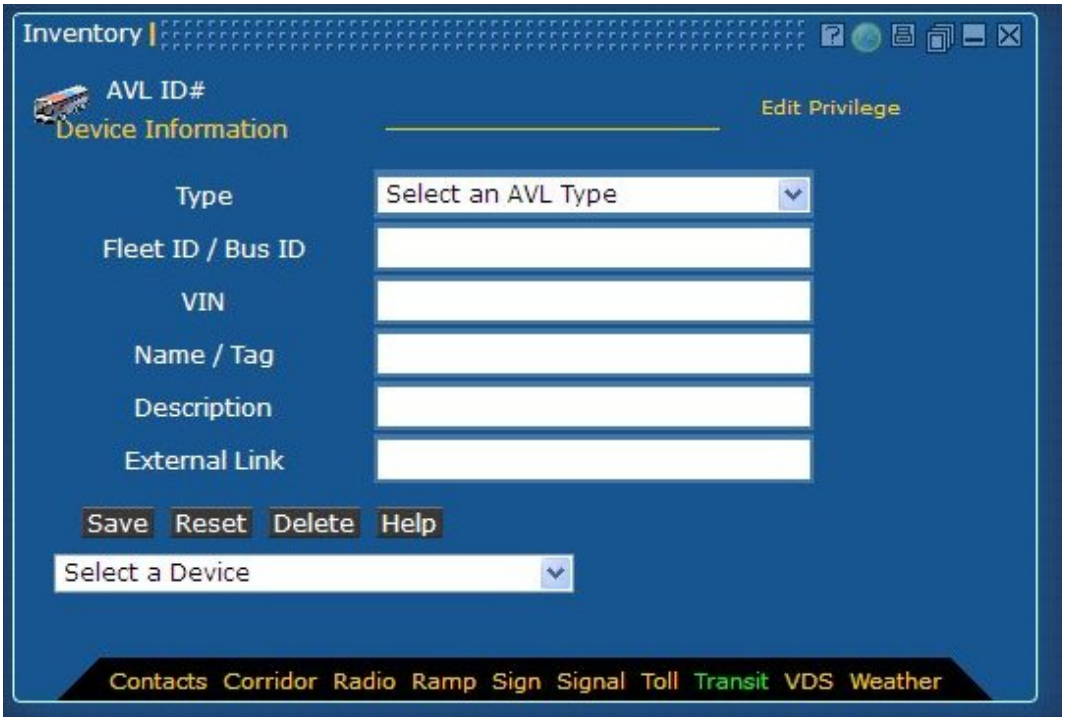


FIGURE 43: INVENTORY DISPLAY FORM FOR TRANSIT

Transit Inventory Privileges

The Transit Inventory window is a View Only window. While there exists an AVL Inventory Edit privilege, it is disabled since the transit data is retrieved solely from the feed.

Using a VDS Inventory Window

The VDS Inventory window shows the information stored in the database for a VDS station owned by the organization.

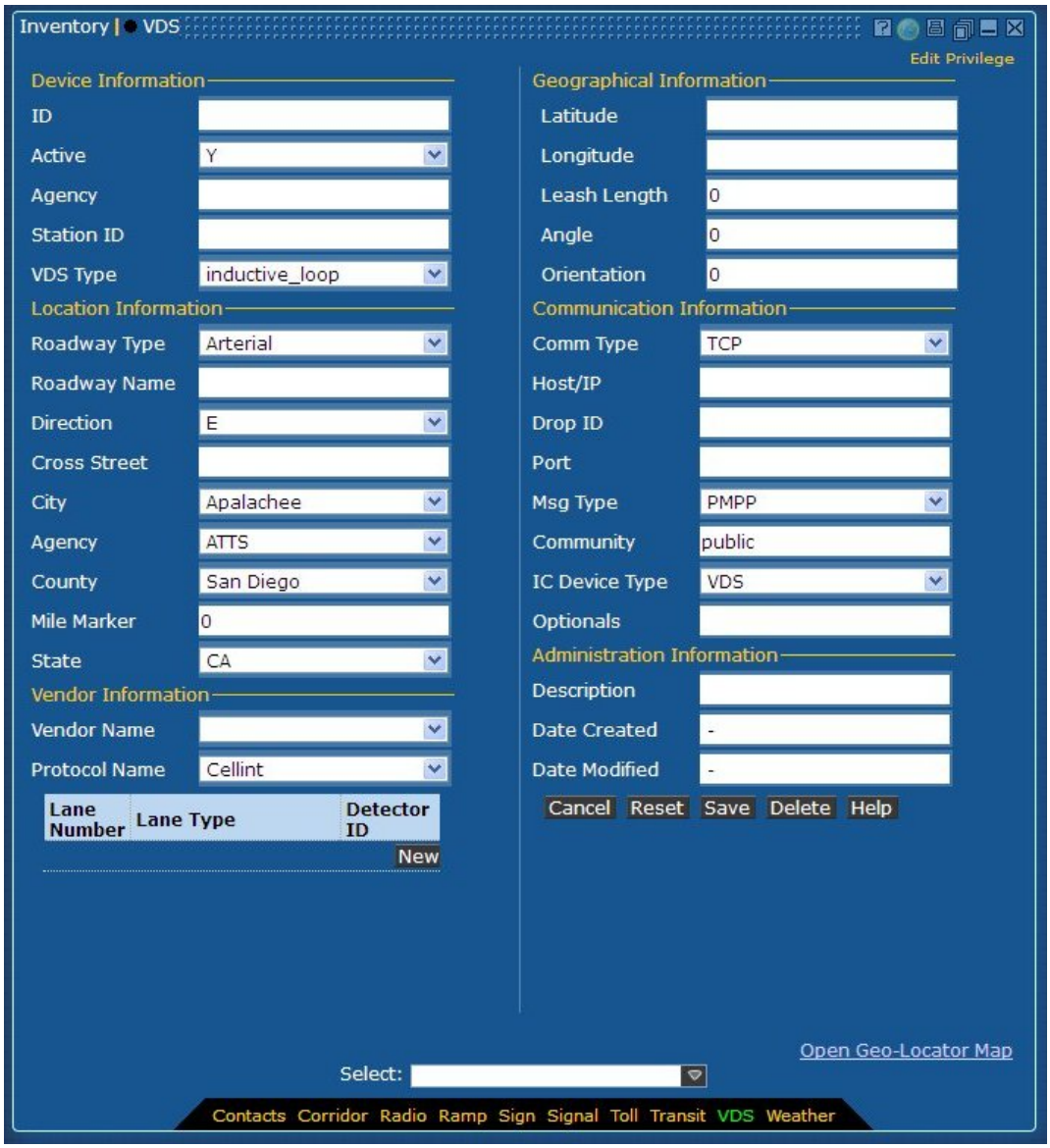


FIGURE 44: INVENTORY DISPLAY FORM FOR VDS

VDS Inventory Privileges

The system contains one privilege which controls VDS Inventory window usage: VDS Inventory Edit.

If the user does not have VDS Inventory Edit privilege set, the VDS Inventory window will open in View Only mode. In View Only mode, a user can see the stored information about any station, and can page through the list of stations using the next and previous buttons, but cannot add, modify or delete stations. The "View Only" tag appears at the top of the Inventory window.

If the user has VDS Inventory Edit privilege, that user can add, modify or delete VDS stations. The tag "Edit Privilege" appears at the top of the Inventory window.

For further information on how to configure operators and set privileges, please see the Administration section of this document.

Entering Information into a VDS Inventory Entry and Modify Form

The fields in the VDS Inventory entry and modify form are explained below.

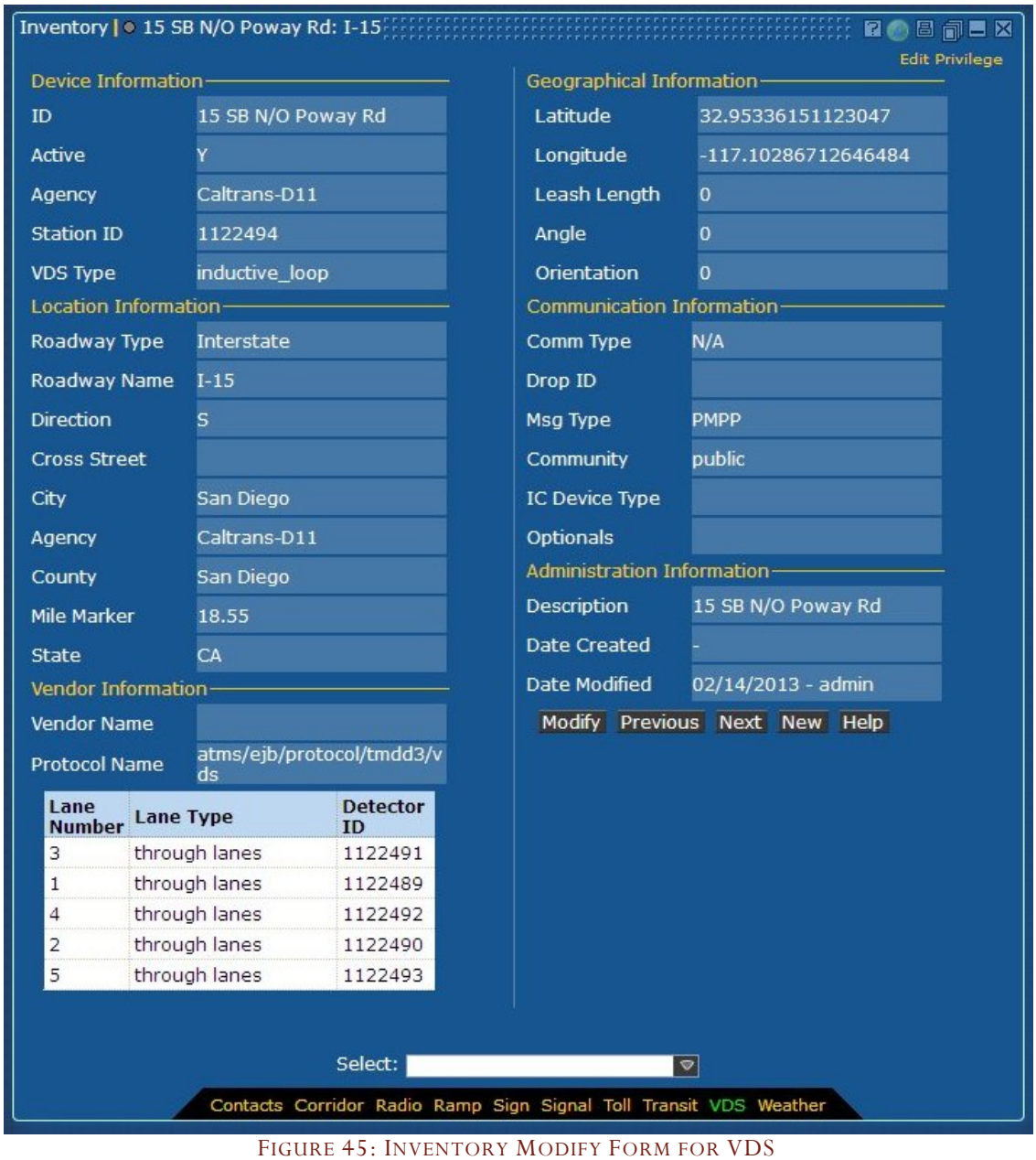


FIGURE 45: INVENTORY MODIFY FORM FOR VDS

Device Information

TABLE 58: DEVICE INFORMATION ENTRY FIELDS

Field Name	Action
ID	Enter the agency-assigned ID for the VDS.
Active	Indicates whether the VDS is active in the inventory.
Agency	Owning agency
Station ID	ID of the VDS station.
VDS Type	Select the type of VDS from drop down list.

Location Information

TABLE 59: LOCATION INFORMATION ENTRY FIELDS

Field Name	Action
Roadway Type	Select that best describes the roadway or roadway segment on which the camera is located. The allowed types are: Arterial, Intersection, Interstate, Ramp, State Highway, Toll Road, Tunnel, U.S. Highway.
Roadway Name	Enter the name of the roadway.
Direction	Enter the direction the sign covers.
Cross Street	Enter the cross street, if applicable.
City	Enter the city name.
District	Enter the district name. This field will affect which list the device falls under when privileges are being assigned.
County	Select the county name.
Mile Marker	Enter the mile marker, if applicable.
State	Enter the State.

Geographic Information

TABLE 60: GEOGRAPHIC INFORMATION ENTRY FIELDS

Field Name	Action
Latitude	Enter the latitude or open the geo-locator map to determine latitude.
Longitude	Enter the longitude or open the geo-locator map to determine longitude.
Leash Length	Enter the leash length or open the geo-locator map to determine leash length
Angle	Enter the angle or open the geo-locator map to determine the angle
Orientation	Enter the orientation or open the geo-locator map to determine the orientation

Communication Information

TABLE 61: COMMUNICATION INFORMATION ENTRY FIELDS

Field Name	Action
Comm Type	Select the communication type. The allowed types are: Dial-up, Serial, TCP, and UDP.
If TCP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Port	Enter the port number.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If UDP	
Host/IP	This field must contain the hostname or an IP address in correct form (127.0.0.1).
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Port	Enter the port number.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Serial	
Comm Name	This is the communications port.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Baud Rate	Select a baud rate from the drop-down menu.
PDS Bit	Select the parity, data, and stop bit from the drop-down menu.
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. *Apply to NTCIP Protocol only.*

Field Name	Action
Community	Enter the community information. *Apply to NTCIP Protocol only.*
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If Dial-Up	
Phone Number	Enter the phone number for the sign.
CHAP Local	Enter username and password in the form of "username:password".
CHAP Remote	Enter username and password in the form of "username:password".
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. Apply to NTCIP Protocol only.
Community	Enter the community information. Apply to NTCIP Protocol only.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.
If N/A	
Drop ID	Enter the drop ID for the device. This field may contain a drop ID of up to 3 digits.
Msg Type	Select the message type for the VDS. Some of the supported message types are PMPP, and SNMP. Apply to NTCIP Protocol only.
Community	Enter the community information. Apply to NTCIP Protocol only.
IC Device Type	Select the IDI Device type from the drop-down list
Optionals	Enter the optional information such as number of retries, send buffer, user information, etc.

Administration Information

TABLE 62: ADMINISTRATION INFORMATION FIELDS

Field Name	Action
Description	Enter description for VDS.
Date Created	Date of record creation; automatically created when a station is saved.
Date Modified	Date of last record modification; automatically created or changed as needed.

Using a Weather Inventory Window

The Weather Inventory window shows the information stored in the database for a weather station owned by the organization.

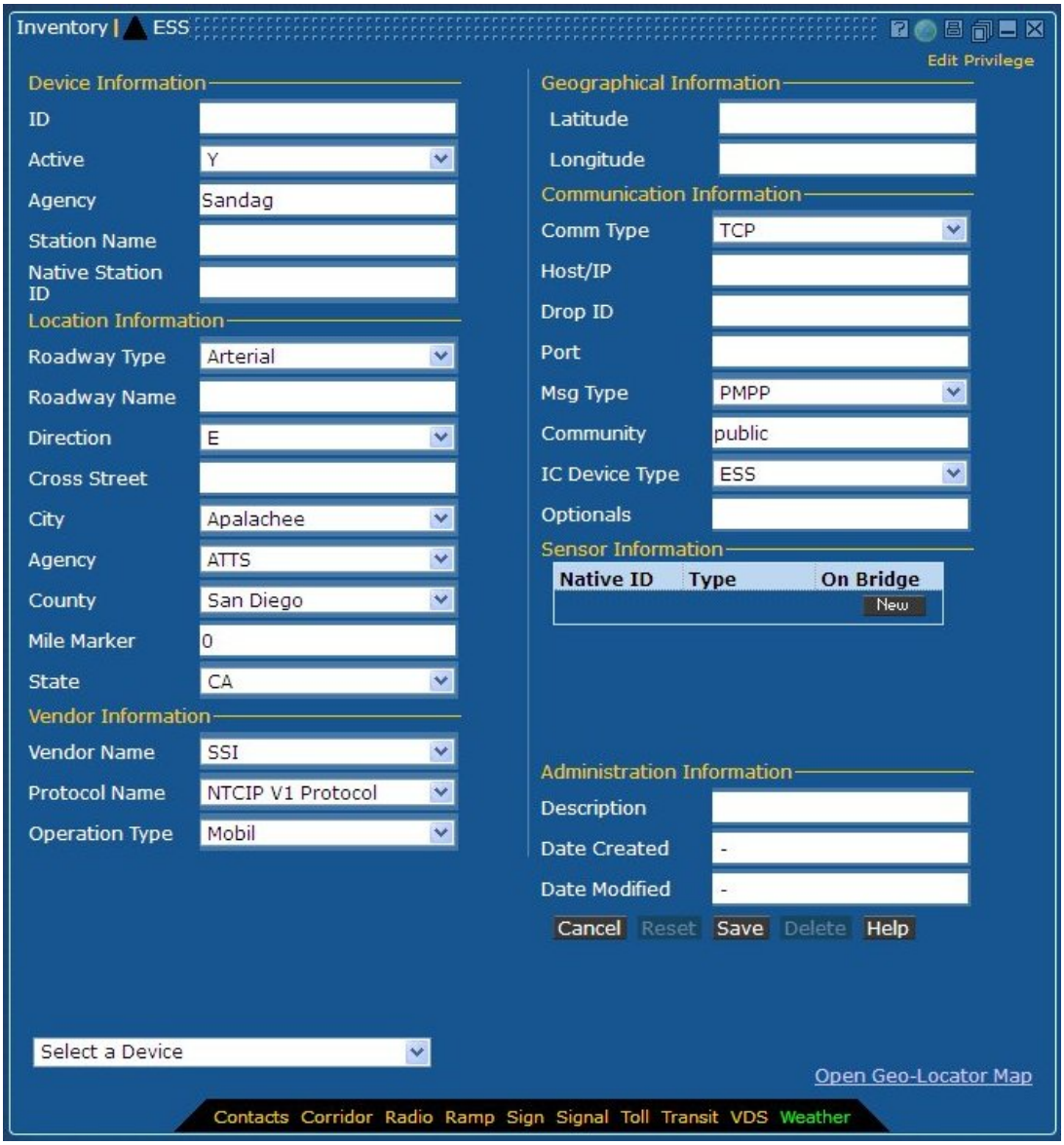


FIGURE 46: INVENTORY DISPLAY FORM FOR WEATHER

Weather Inventory Privileges

The Weather Inventory window is a View Only window. While there exists an ESS Inventory Edit privilege, it is disabled since the weather data is retrieved solely from the feed.

Managing Alarms

The alarm window is a tool used to monitor congestion and wind speed, as well as device failures. The *Alarm Edit* privilege is required to modify the thresholds for the system parameters. To access the tool, click on the Alarm link in the upper menu bar. The following window will appear.

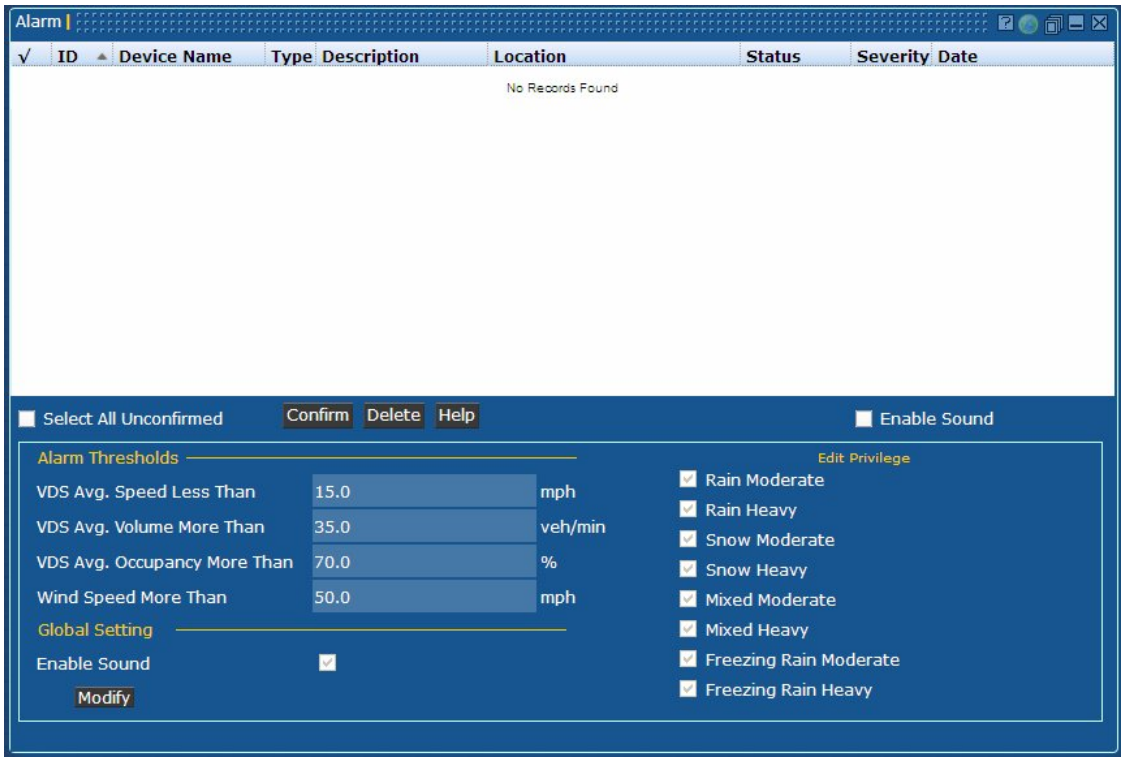


FIGURE 47: ALARM ADMINISTRATION SCREEN

To modify the thresholds for when alarms appear:

a) Press the Modify button.
b) Enter the updated value for the threshold.
c) Click Save to accept the new threshold.

To confirm the alarms:

a) Check the boxes for those alarms that are to be confirmed, or click the Select All Unconfirmed checkbox.
b) Click the *Confirm* button. This will change the status of the alarms to Confirmed.

To delete the alarms:

a) Check the boxes for those alarms that are to be confirmed, or click the Select All Unconfirmed checkbox.
b) Click the *Delete* button. This will remove the alarms from the list

To enable sound:

a) Check the *Enable Sound* box.

Managing Center-to-Center Access

The Center-to-Center (C2C) component is a gateway to send and receive data to and from the ICMS. It is a means to share all pertinent real-time traffic data with other agencies, partners, 511 systems, and Information Service Providers (ISPs). Data is shared via eXtensible Markup Language (XML) web services via secure internet, intranet, or extranet connections.

Access to ICMS-IMTMS services

To gain access to the ICMS-IMTMS data feeds, a user account must be created using the ICMS-IMTMS Administration tool as shown in Figure 48: ICMS-IMTMS Administration Window.

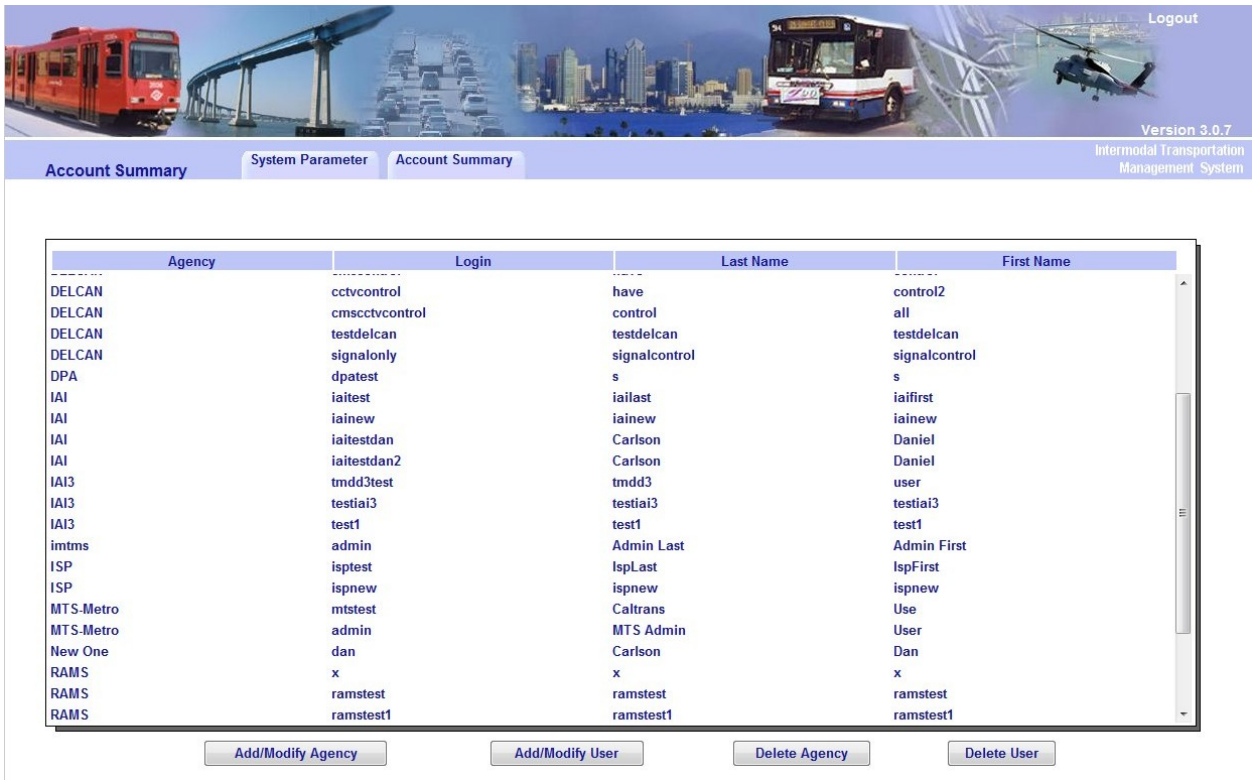


FIGURE 48: ICMS-IMTMS ADMINISTRATION WINDOW

Creating a New Agency/User

To create a new user, the agency for the user must exist first.

To create an ICMS-IMTMS user:

a) Log in to the ICMS-IMTMS Administration tool
b) Create a new Agency (this step may be skipped if the agency already exists). See Figure 49: ICMS-IMTMS Add Agency Window:
    a. Click the Add/Modify Agency button
    b. Enter the name and address for the agency
    c. Click the *Create Name* button
    d. Enter the Agency Contact information

e. Complete the *Subscriber* information. If the user is to receive the agency data feed, check the *Agency Data* checkbox. If the user is to receive the ISP data feed, check the *ISP* checkbox.
f. Check the *Yes* radio button if this new agency provides data to the ICMS; check the *No* button otherwise.
g. Click the *Save* button.

c) Select a user belonging to the same agency as the new user.
d) Click the *Add/Modify* User button. See Figure 50: ICMS-IMTMS Add User Window.
e) Complete the User Information fields.
f) Check the checkboxes if the user is to have any device control (CMS, CCTV, Signals, Ramps)
g) Click the *Save* button.

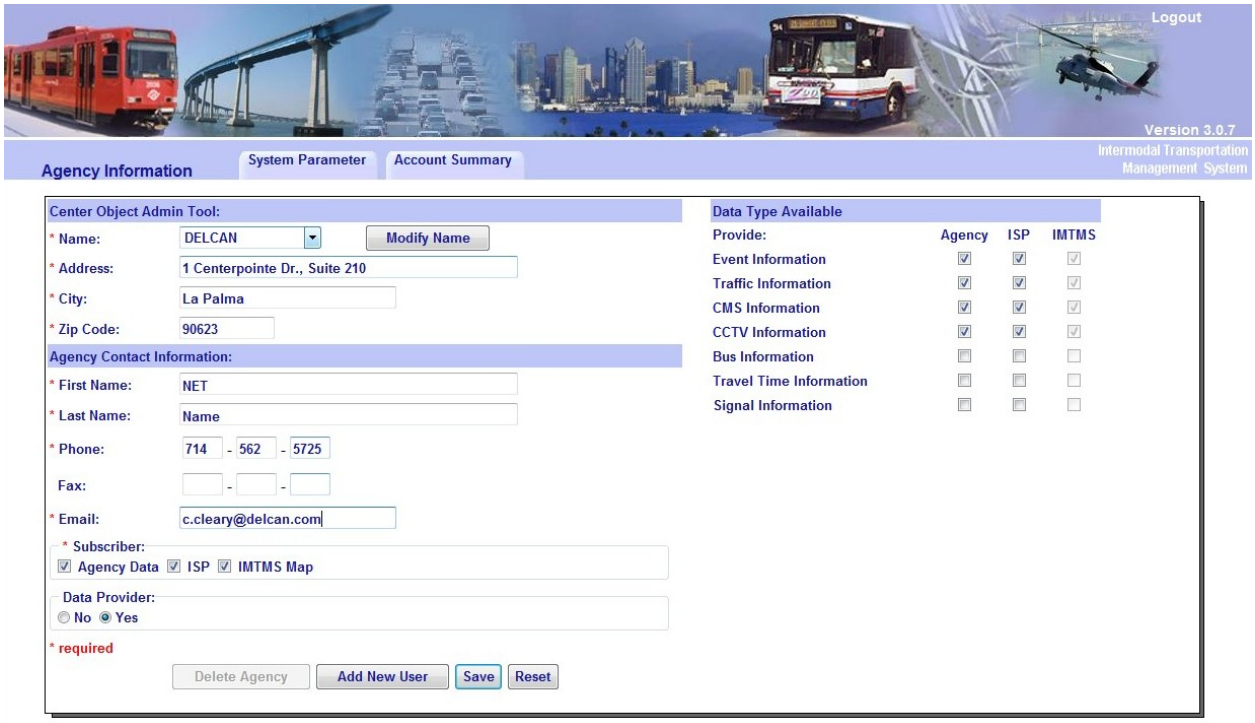


FIGURE 49: ICMS-IMTMS ADD AGENCY WINDOW

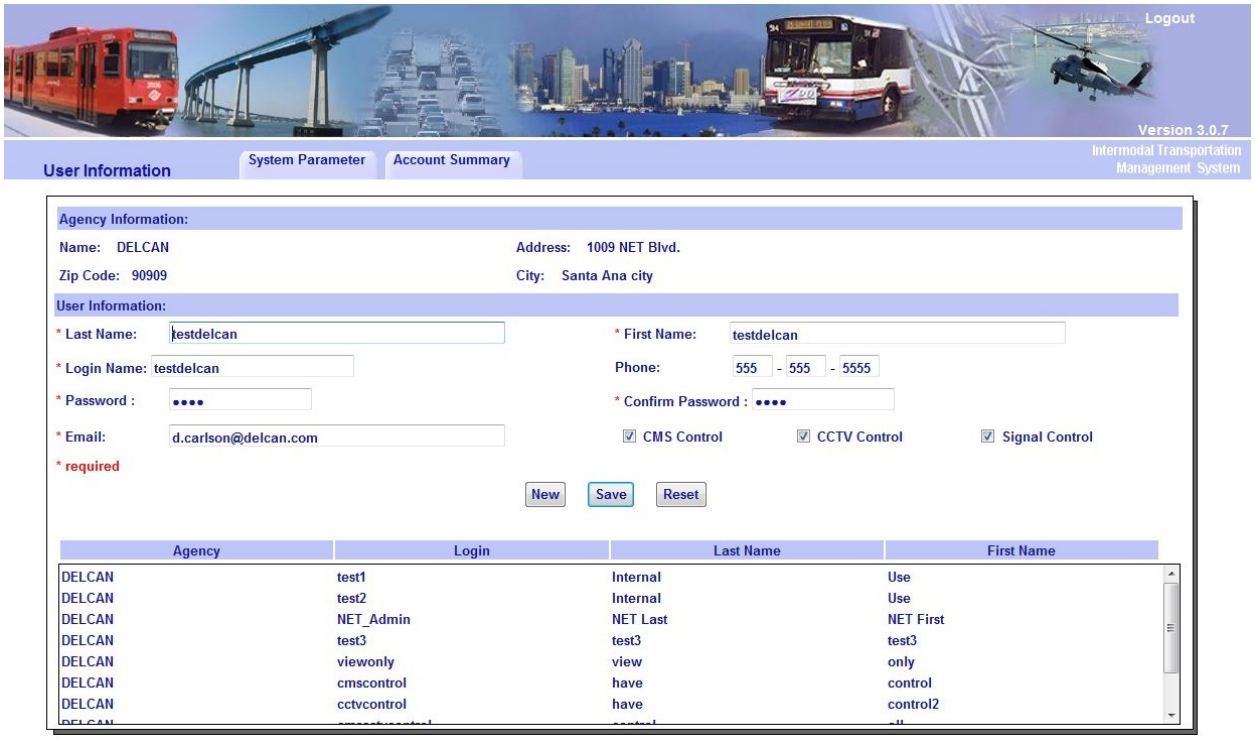


FIGURE 50: ICMS-IMTMS ADD USER WINDOW

Modifying a User

The information for a user, such as an email address, can be modified using the same page.

To modify an ICMS-IMTMS user:

a) Log in to the ICMS-IMTMS Administration tool
b) Select a user to modify.
c) Click the *Add/Modify User* button
d) Update the User Information fields.
e) Click the *Save* button.

Deleting a User

A user can be deleted from the system using the same page.

To delete an ICMS-IMTMS user:

a) Log in to the ICMS-IMTMS Administration tool
b) Select a user to delete.
c) Click the *Delete User* button

Deleting an Agency

In order to be able to delete an Agency, all users must be deleted first.

To delete an ICMS-IMTMS Agency:

a) Log in to the ICMS-IMTMS Administration tool
b) Select an Agency to delete. Verify there are no users for this agency.
c) Click the *Delete Agency* button