March 3rd, 2003

San Gabriel Valley Pilot Project

Information Exchange Network (IEN) System Operator Training – Day 2

Final

Prepared by:

TRANSCORE

35 South Raymond Avenue, Suite 200
Pasadena, California 91105

IEN System Operator's Training
Part 2

San Gabriel Valley Pilot Project

Countywide Information Exchange Network

TRANSCORE

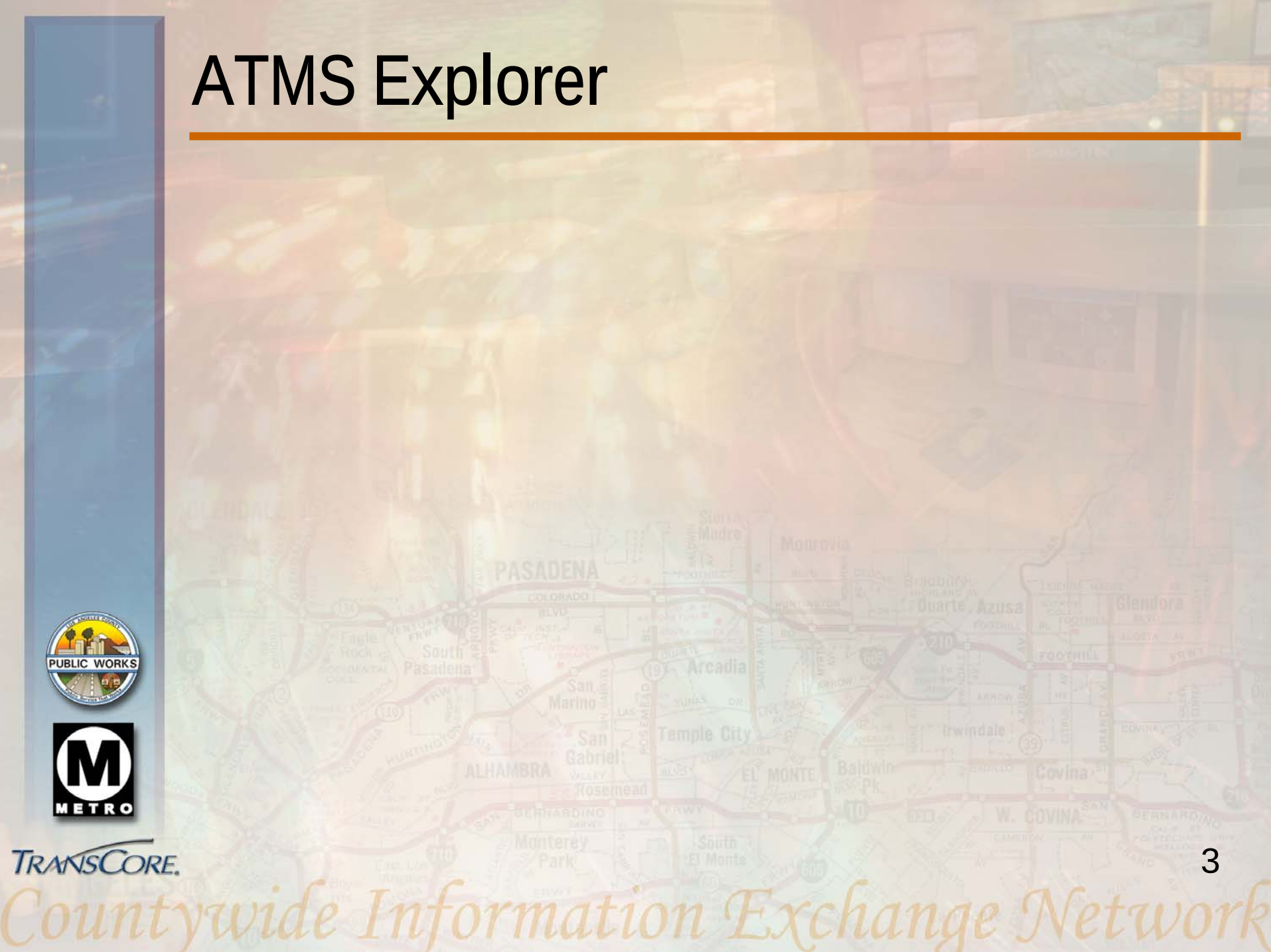
March 3rd, 2003

Countywide Information Exchange Network

Operator's Training Part 2 Agenda

- ATMS Explorer
  - Constructing TCS Diagrams
  - TCS Icons
  - Monitoring TCS devices
  - Sending commands to TCS devices
- Scenario Manager
  - Searching the scenario plan database
  - Using scenario plans
  - Monitoring scenario plans effects

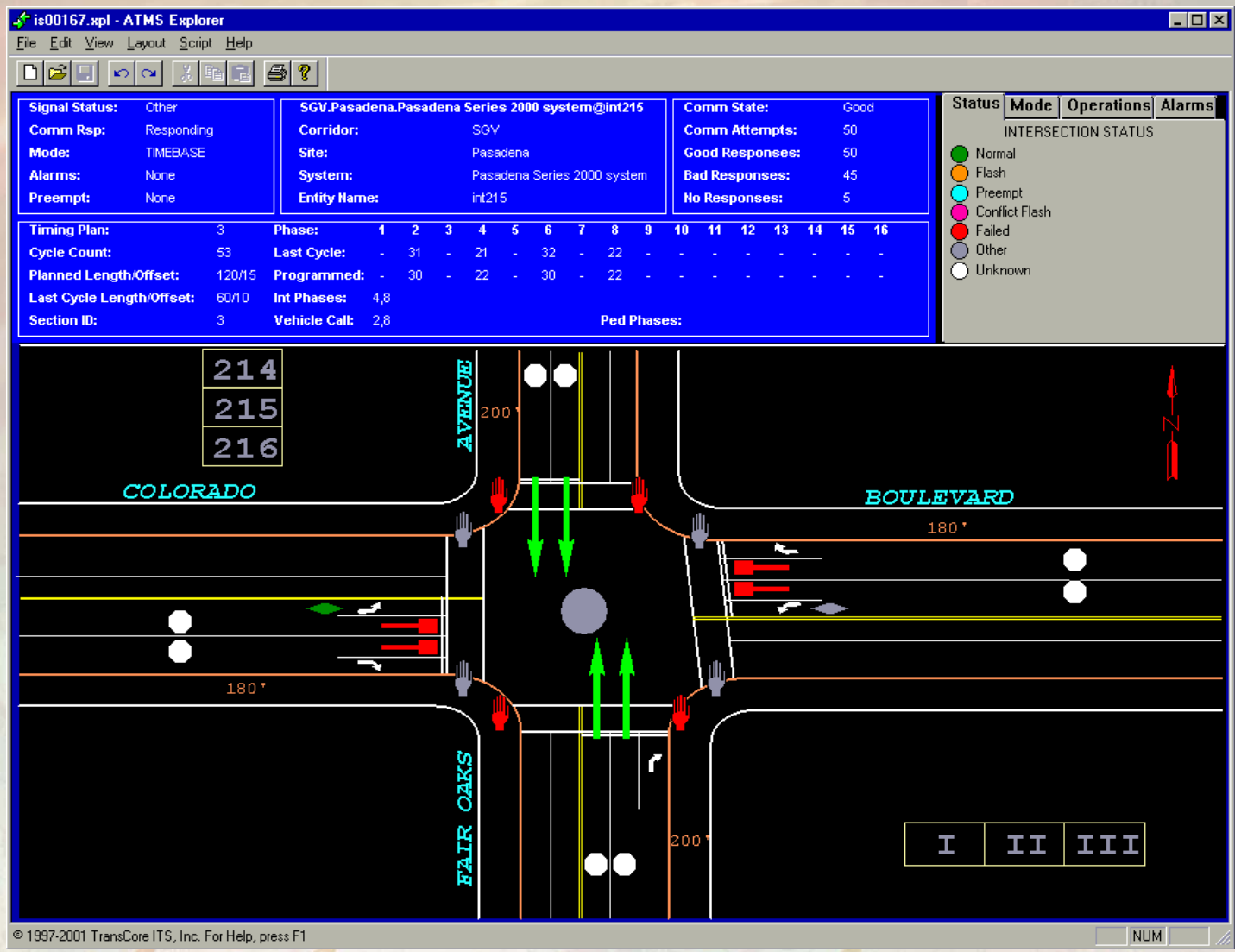
ATMS Explorer



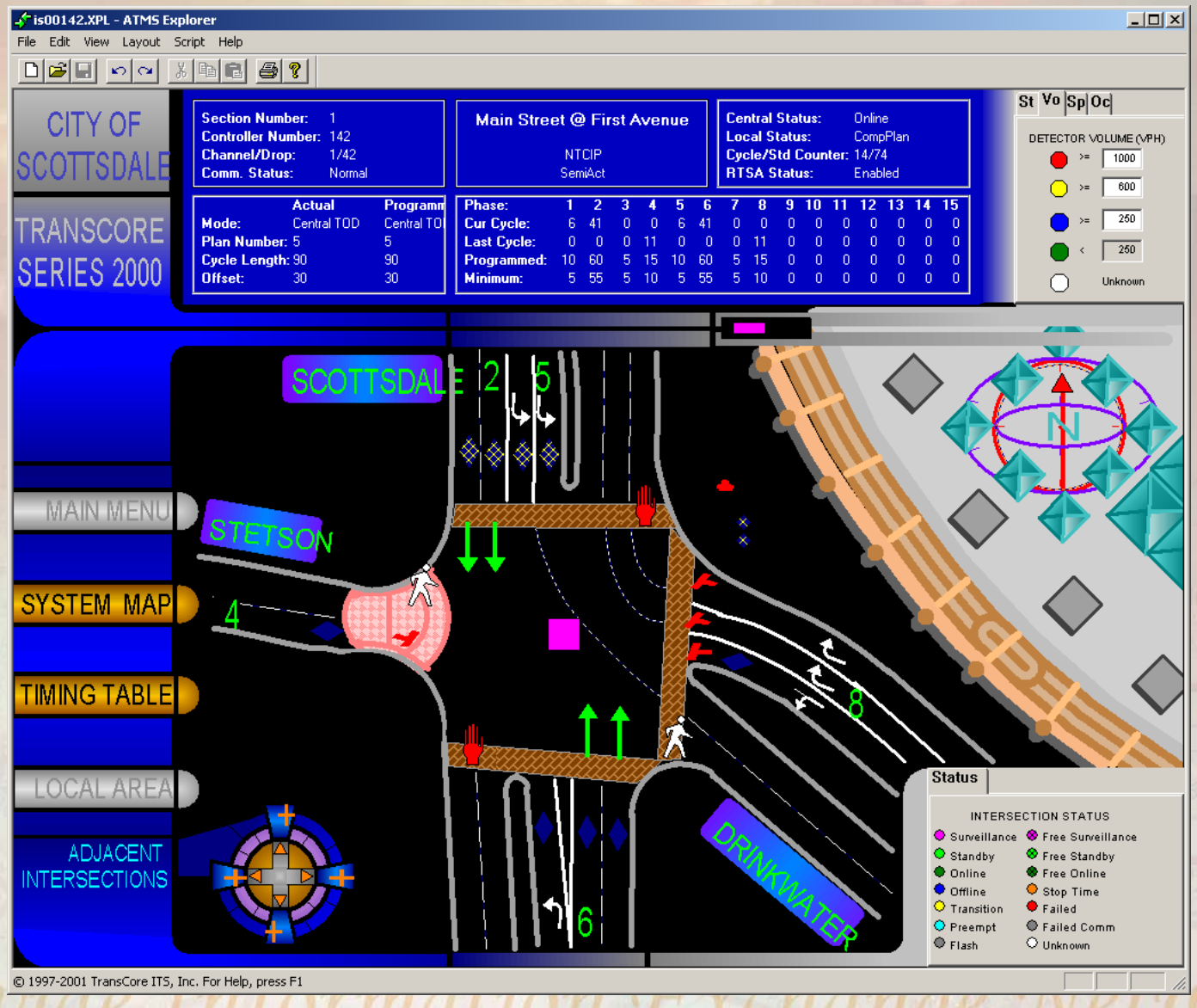
ATMS Explorer Overview

- *ATMS Explorer* (XPL) is fundamentally an ActiveX container used to build detailed TCS intersection and section level graphical diagrams
- Icons embedded within XPL diagrams allow operators to monitor real-time data collected from arterial controllers and other TCS devices
- Authorized operators are able to send plan and mode change commands to intersections and sections connected to the IEN

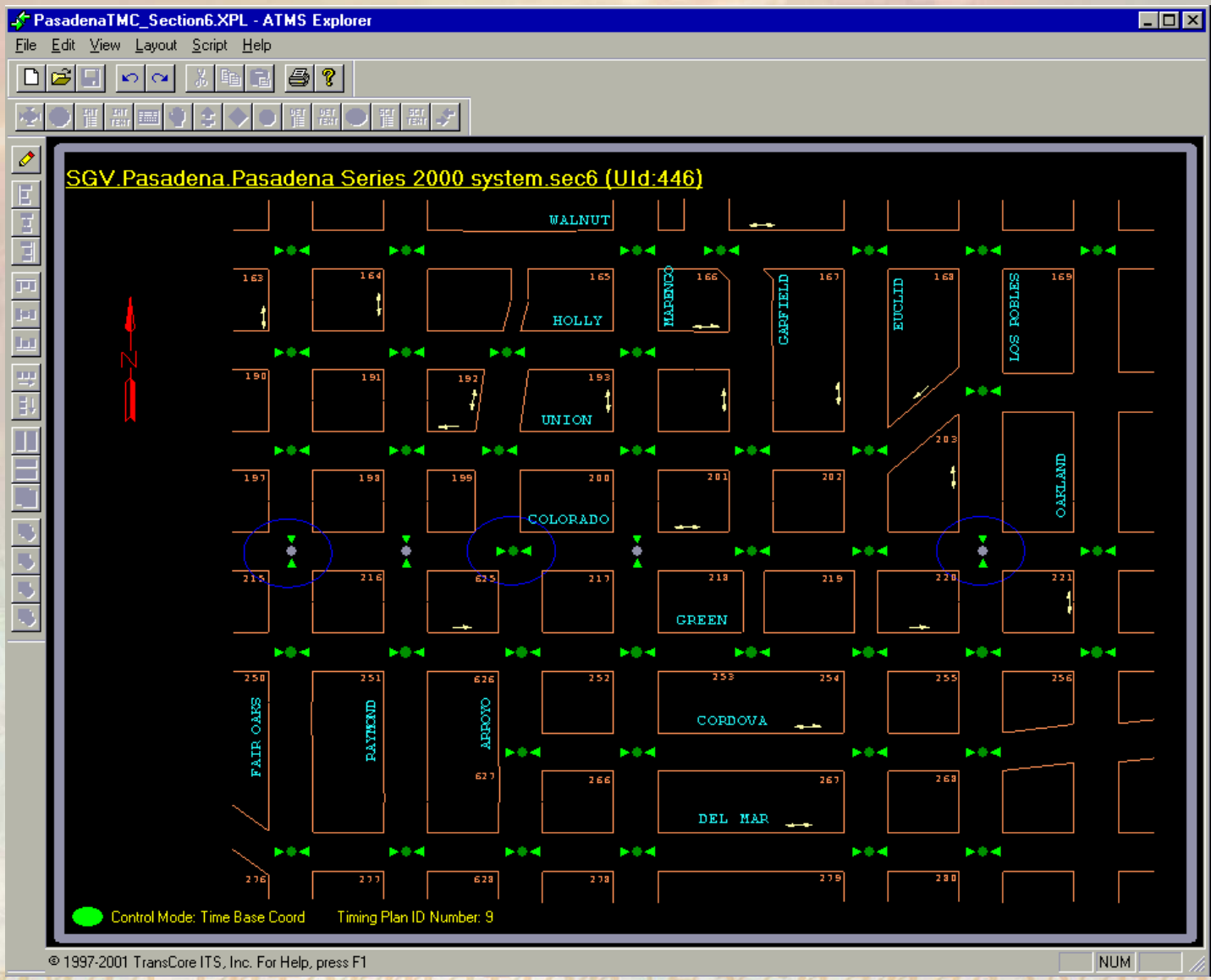
Example Intersection Diagram



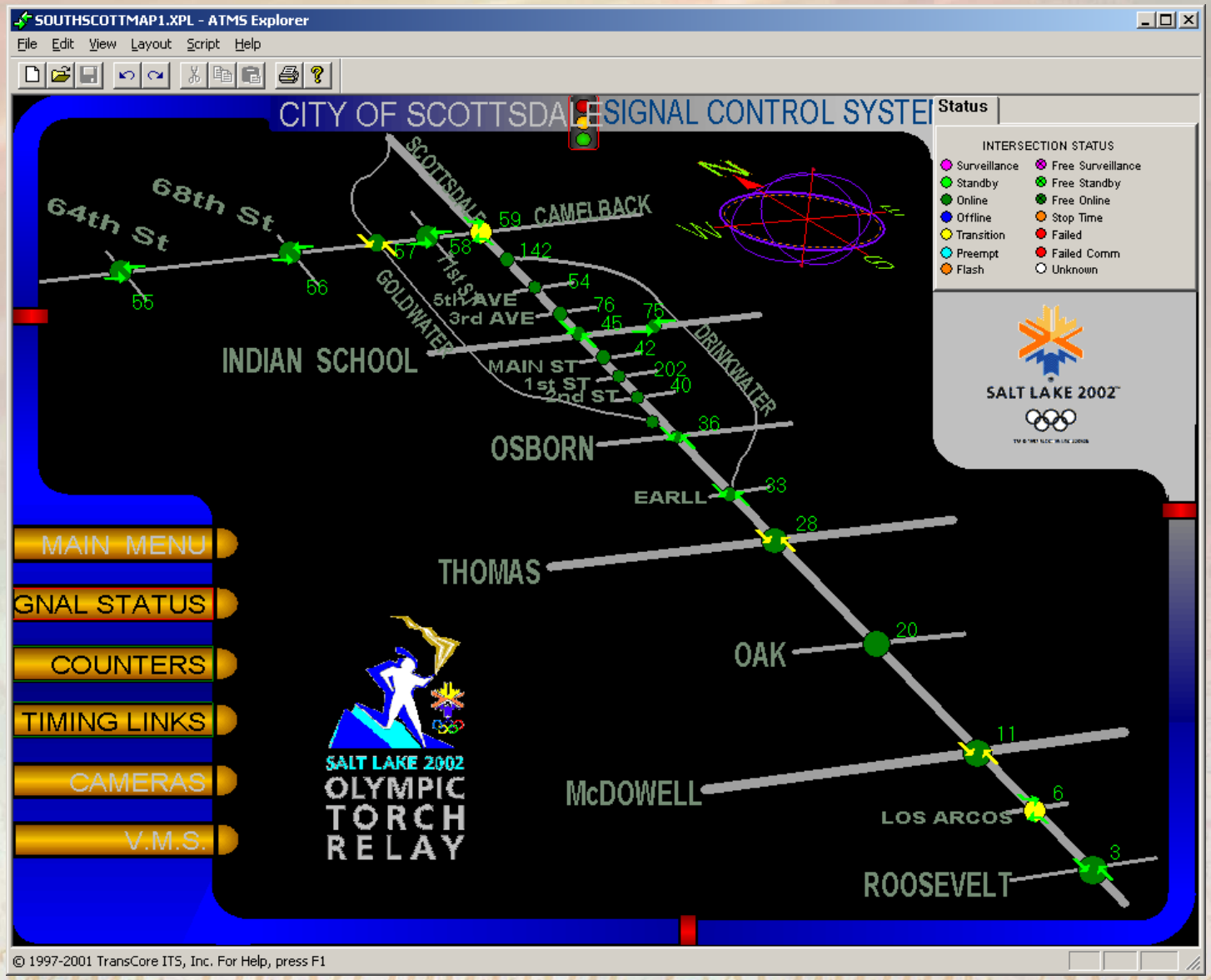
Example Intersection Diagram



Example Section Diagram



Example Arterial Diagram

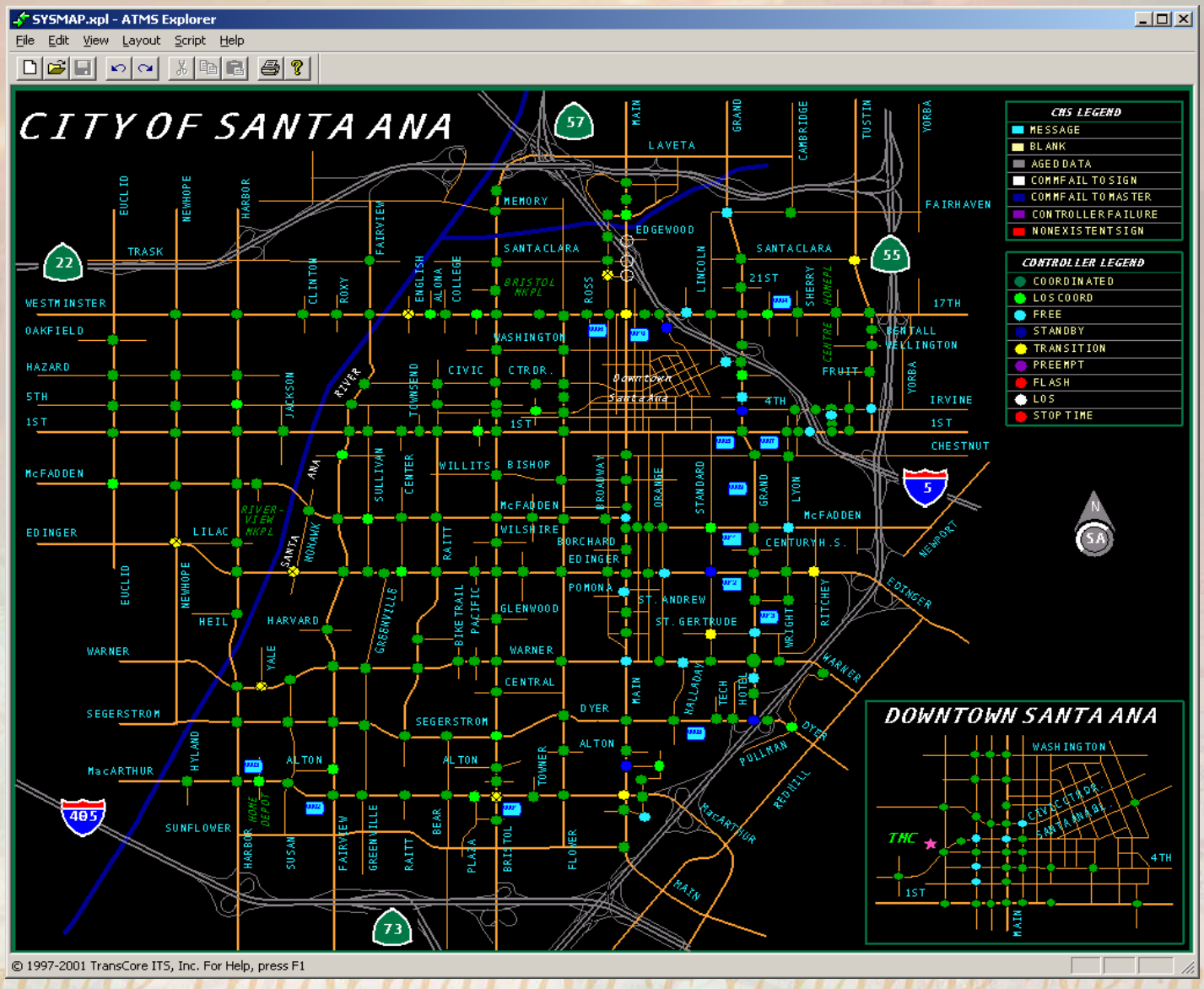


PUBLIC WORKS

METRO

TRANSCORE

Example System Diagram



PUBLIC WORKS

METRO

TRANSCORE

Static ATMS Explorer Components

- Static ATMS Explorer components are typically the backdrop on which the real-time data components are shown
- For example, the backdrop may consist of the graphical layout of a single intersection or a map of the roadway network for a group of intersections

Dynamic ATMS Explorer Components

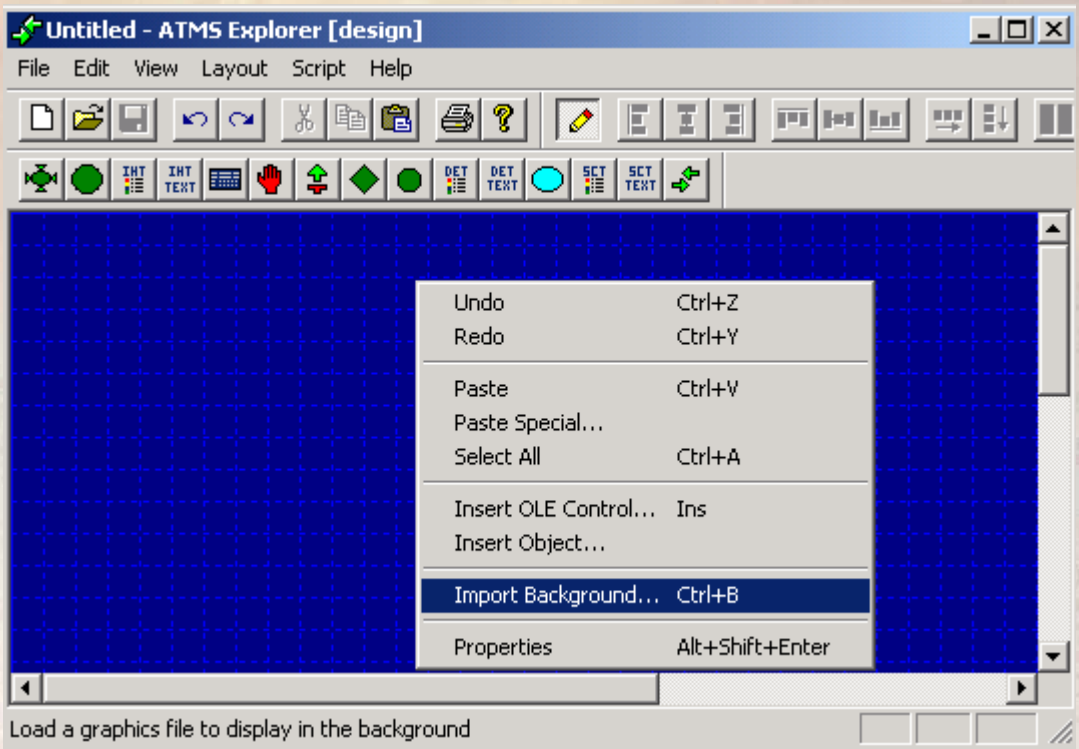
- Dynamic ATMS Explorer components are the ActiveX controls overlaid on the static background
  - ActiveX controls are always active in run mode
  - ActiveX controls respond to mouse clicks and/or display dynamic data
- TCS ActiveX controls are associated with IEN devices such as intersections, sections, or detectors
  - Operators are able to monitor information being collected from the associated device
  - Authorized operators are also able to send commands to associated devices (if the device supports such an action)

Creating Explorer Backgrounds

- Backgrounds can be created using almost any graphics application
- For intersection or map backgrounds, a commercial graphics package is probably the most convenient (such as such as Microsoft Visio or MicroGrafx Webticity)
- Supported background file types:
  - Bitmaps (*.bmp, *.dib)
  - Enhanced Metafiles (*.emf)
  - Windows (*.wmf)

Inserting Backgrounds in Diagrams

- A background graphic can be imported into an *ATMS Explorer* document while a document is in design mode



Inserting Backgrounds in Diagrams (cont.)

- Right-click the diagram and select the **Import Background** option from the pop-up menu
- A standard Windows File Browser dialog will open in which the desired background file can be selected

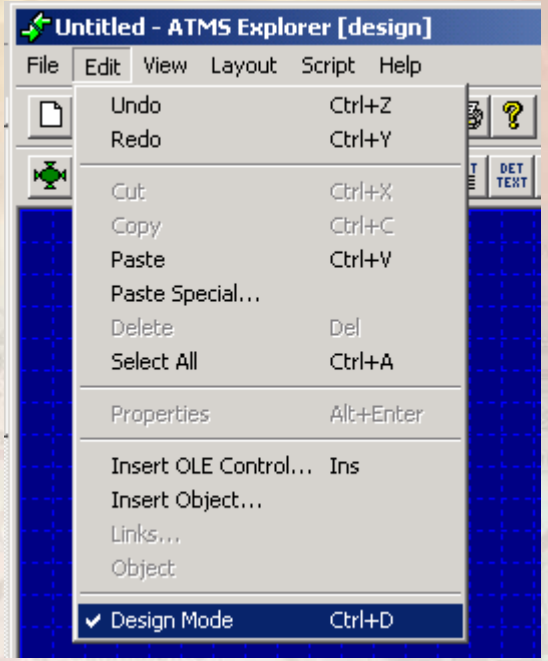
Moving Components Between Diagrams

- Components can be moved or copied between diagrams in design mode
- Drag the components from one diagram to the other or use the copy/cut/paste options

Adding the Dynamic Components

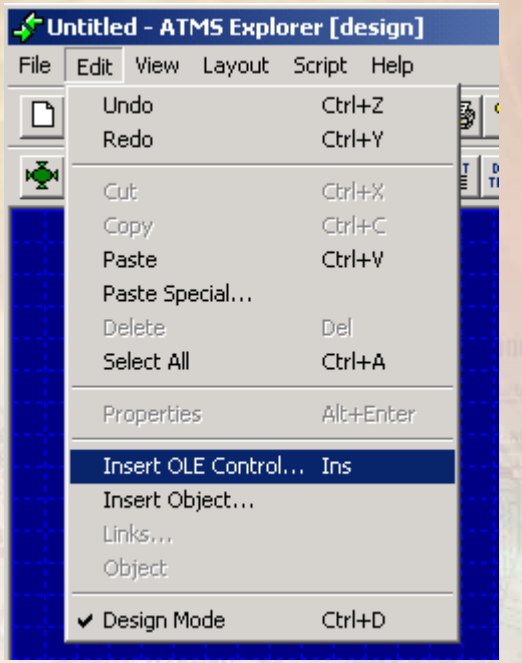
To insert a dynamic component within a diagram:

1. Select the **Design Mode** option from either the Edit Menu or Toolbar to put the diagram in edit mode



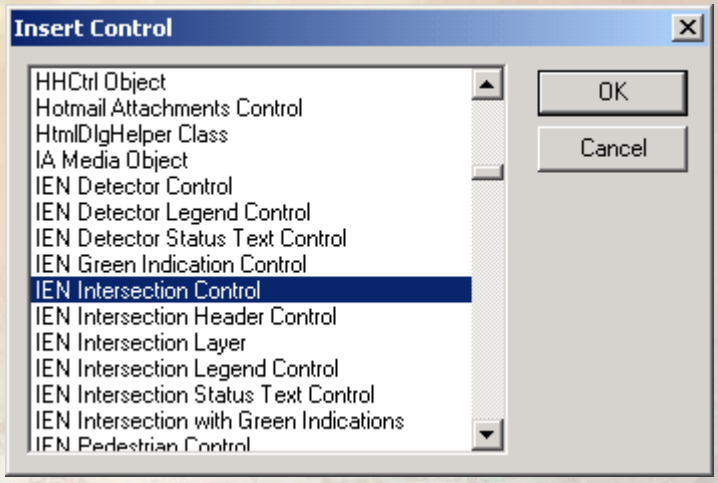
Adding the Dynamic Components (cont.)

2. With the diagram in design mode, select the **Insert OLE Control** option from the Edit Menu



Adding the Dynamic Components (cont.)

3. Select the desired component from the Insert Control list box and click the OK button



TCS ActiveX Controls

Control	Description
Intersection Control	Displays performance status, operating characteristics, timing information, plan selection information, and communication status of the associated intersection controller
Intersection Status Text Control	Displays a particular aspect of the information collected from the associated intersection controller
Intersection Header Control	Displays detailed information collected for the associated intersection controller
Intersection Legend Control	Provides an indication legend for the intersection controls
Intersection w/ Green Indications Control	Displays the same information as the intersection controls and also indicates the traffic signal being shown at each side of the intersection

TCS ActiveX Controls (cont.)

Control	Description
Green Indication Control	Indicates the traffic signal being shown to a particular lane of traffic
Pedestrian Control	Indicates the pedestrian signal being shown on a particular side of an intersection
Vehicle Call Control	Indicates the vehicle presence-state of the associated sensor
Detector Control	Displays status, volume, speed, occupancy, or V+*k*O data from the associated VOS detector
Detector Status Text Control	Displays a particular aspect of the information collected from the associated VOS detector
Detector Legend Control	Provides an indication legend for the detector controls

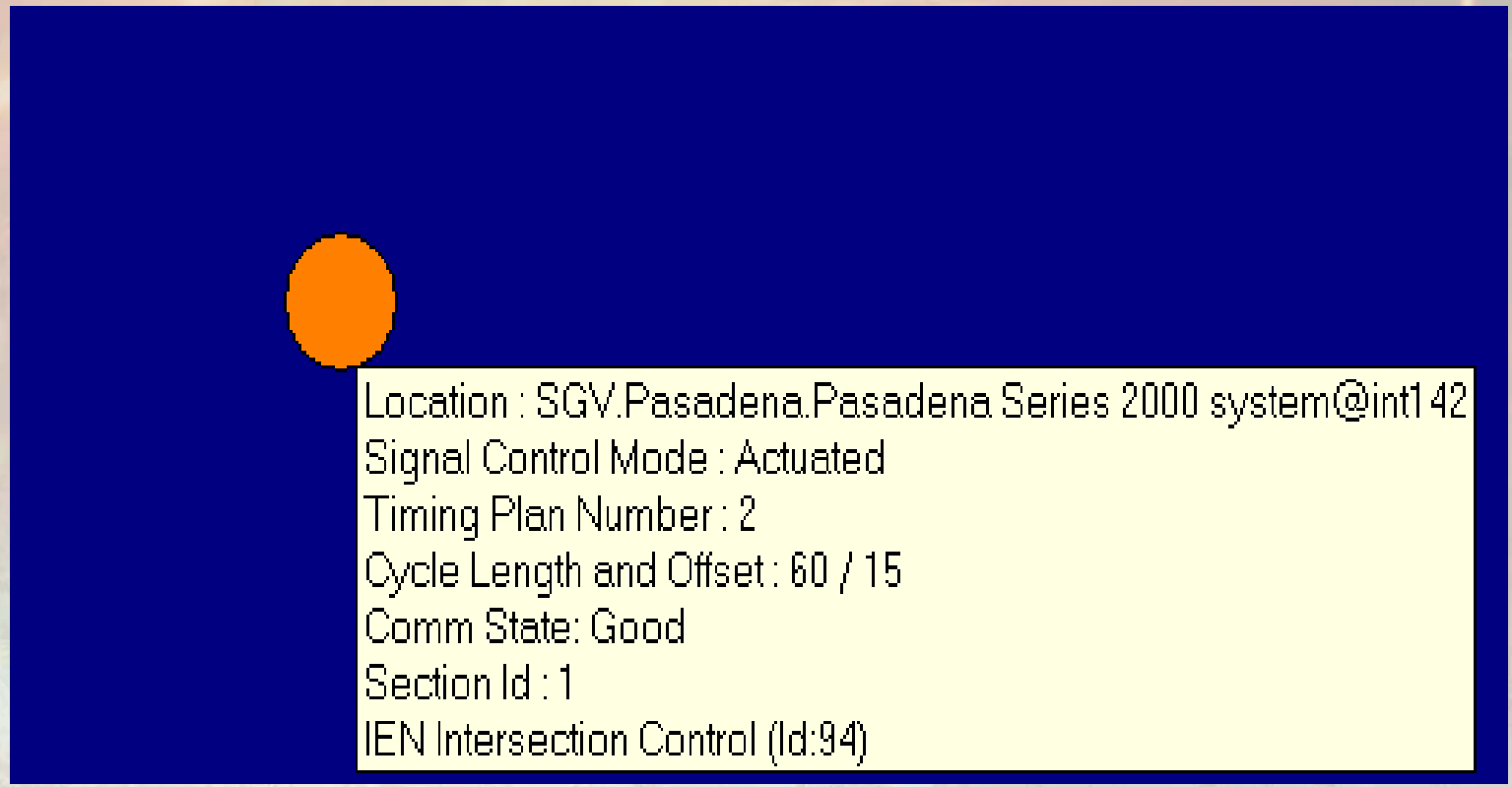
TCS ActiveX Controls (cont.)

Control	Description
Section Control	Displays timing plan and control mode information for the associated section
Section Status Text Control	Displays a particular aspect of the information collected from the associated section
Section Legend Control	Provides an indication legend for the section controls
ATMS Hyperlink Control	Allows navigation from diagram to diagram via embedded shortcuts

Intersection Controls

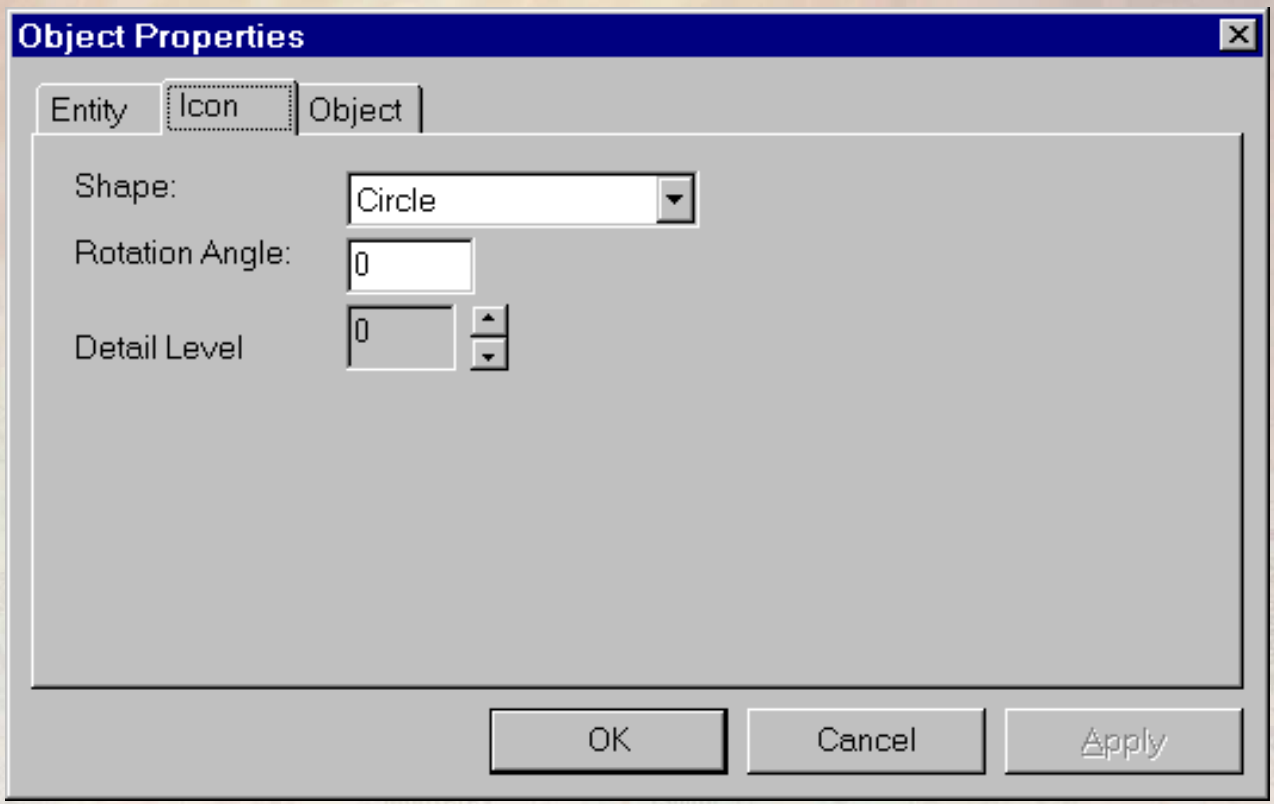
- Intersection controls display information collected from associated intersection controllers
  - Performance status
  - Operating characteristics
  - Timing information
  - Plan selection information
  - Communication status
- The control can be drawn as either a circle or a rectangle

Intersection Controls (cont.)

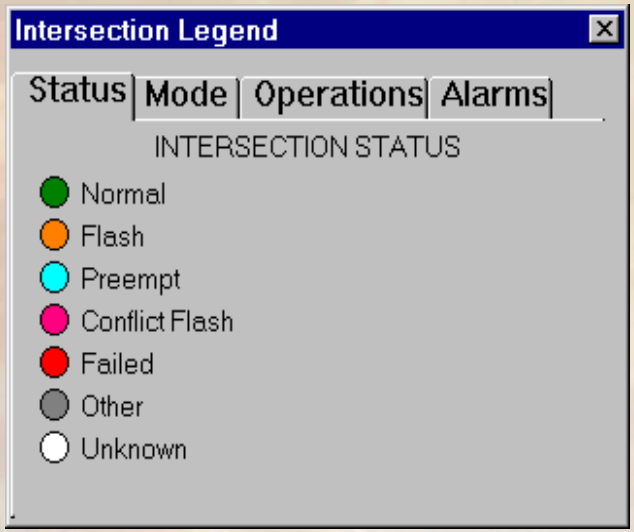


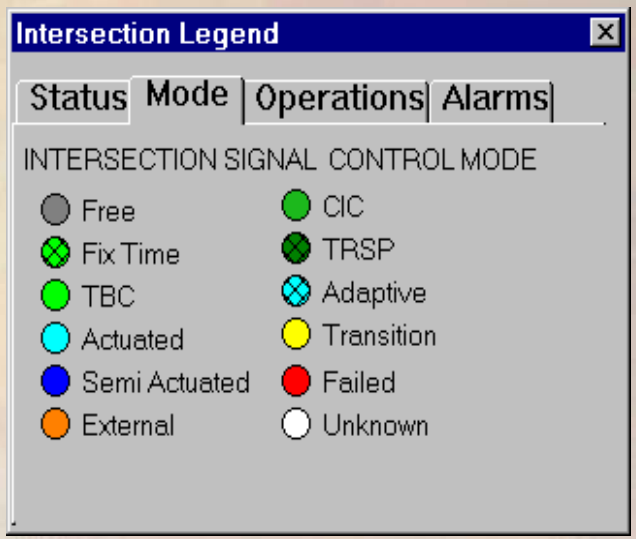
Intersection Control Properties

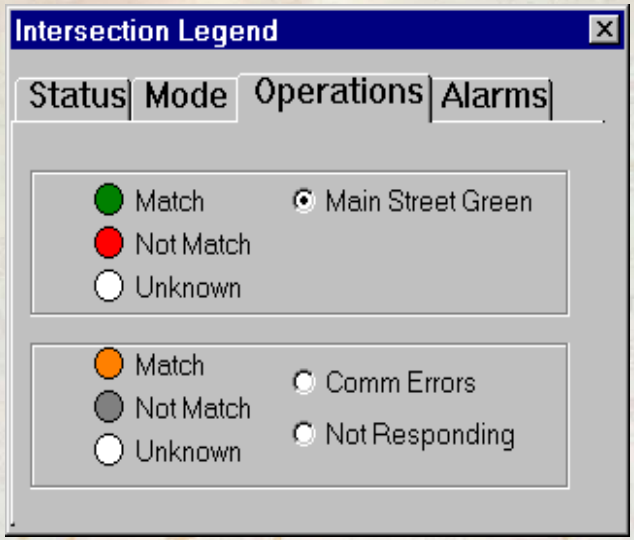
The Intersection Control Properties Icons page is used to configure the shape and rotation angle of the control

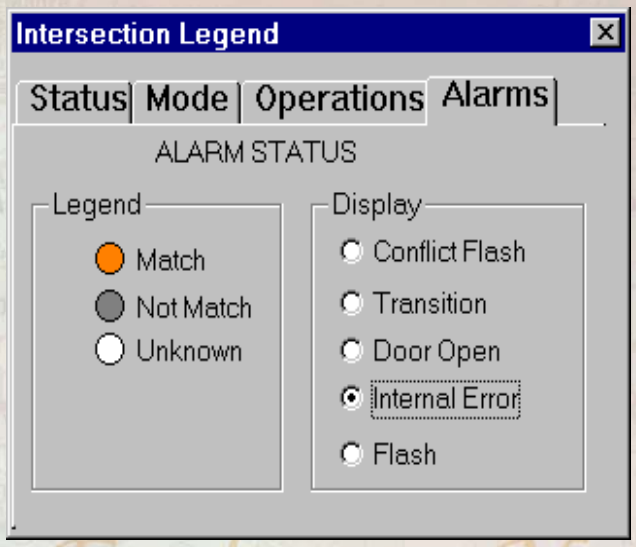


Intersection Legend Control





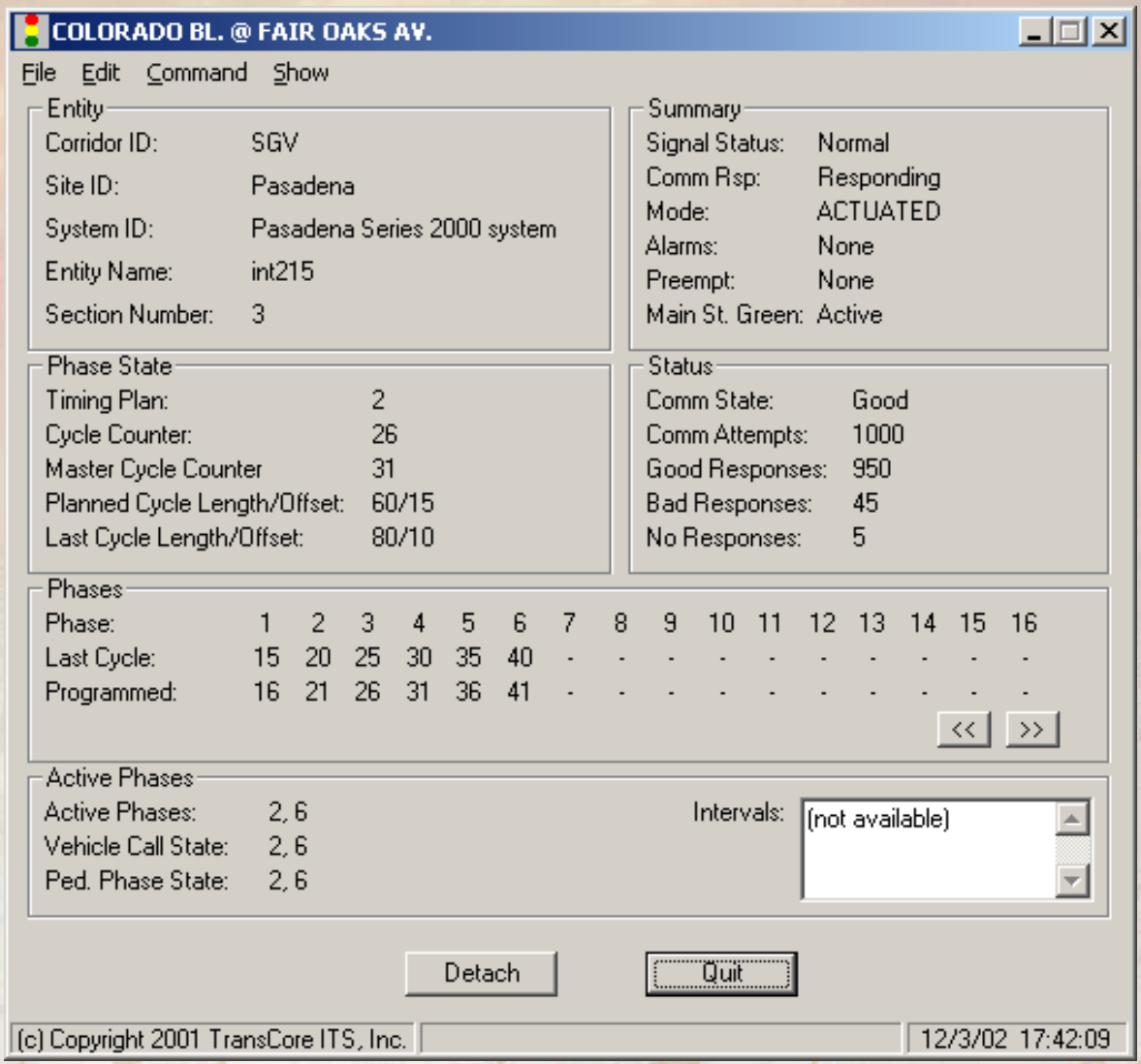




Intersection Detail View

- Intersection Detail Views are accessible from Intersection and Intersection with Green Indications Controls
- The View is identical to the one available from the intersection map layer controls
- The View allows operators to monitor detailed TCS controller data for a single intersection
- Authorized operators may use the view to send plan or mode change commands to TCS controllers
- To open the view, double-click the control or select “Monitor” from the control’s pop-up menu

Intersection Detail View (cont.)



Intersection Header Controls

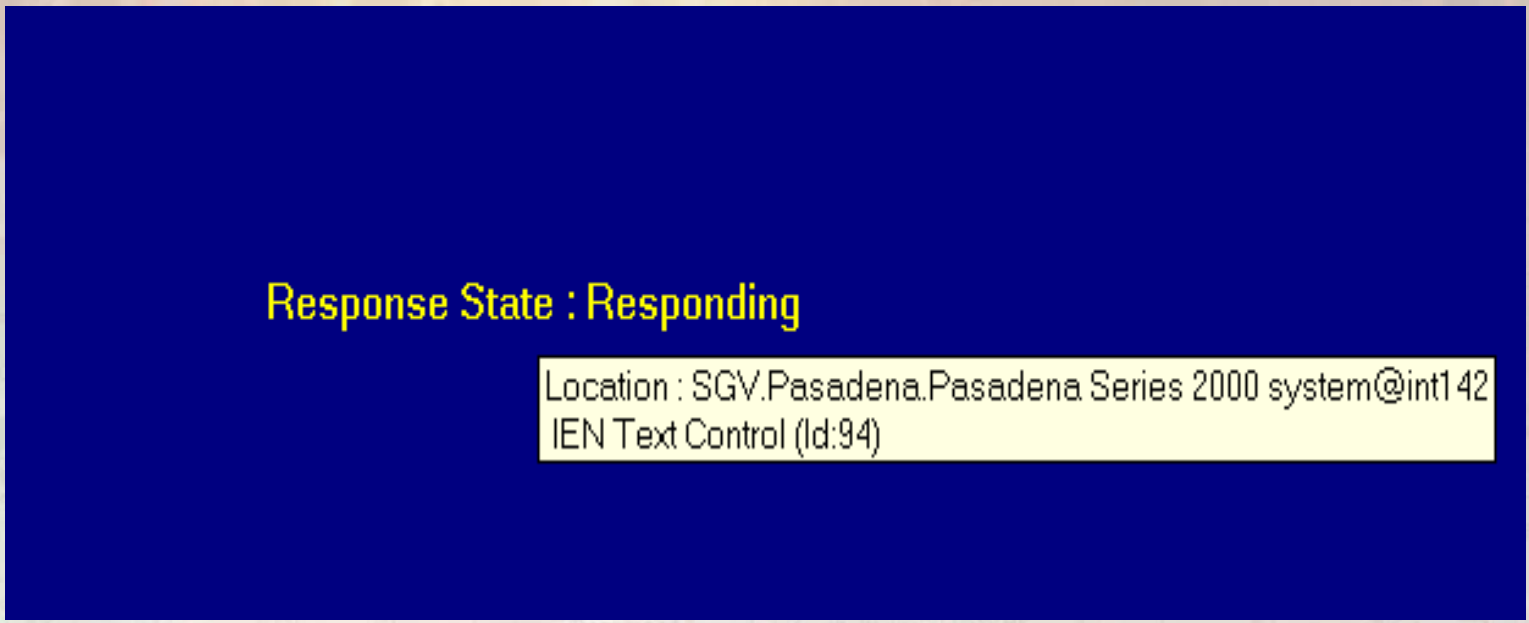
- Intersection Header Controls display detailed information collected for their associated intersection controllers

Signal Status:	Other	**SGV.Pasadena.Pasadena Series 2000 system@int215**		**Comm State:**	Good
Comm Rsp:	Responding	**Corridor:**	SGV	**Comm Attempts:**	50
Mode:	TIMEBASE	**Site:**	Pasadena	**Good Responses:**	50
Alarms:	None	**System:**	Pasadena Series 2000 system	**Bad Responses:**	45
Preempt:	None	**Entity Name:**	int215	**No Responses:**	5

Timing Plan:	3	**Phase:**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Cycle Count:	36	**Last Cycle:**	-	31	-	21	-	32	-	22	-	-	-	-	-	-	-	-
Planned Length/Offset:	120/15	**Programmed:**	-	30	-	22	-	30	-	22	-	-	-	-	-	-	-	-
Last Cycle Length/Offset:	60/10	**Int Phases:**	2,6															
Section ID:	3	**Vehicle Call:**	2,4,8									**Ped Phases:**				1		

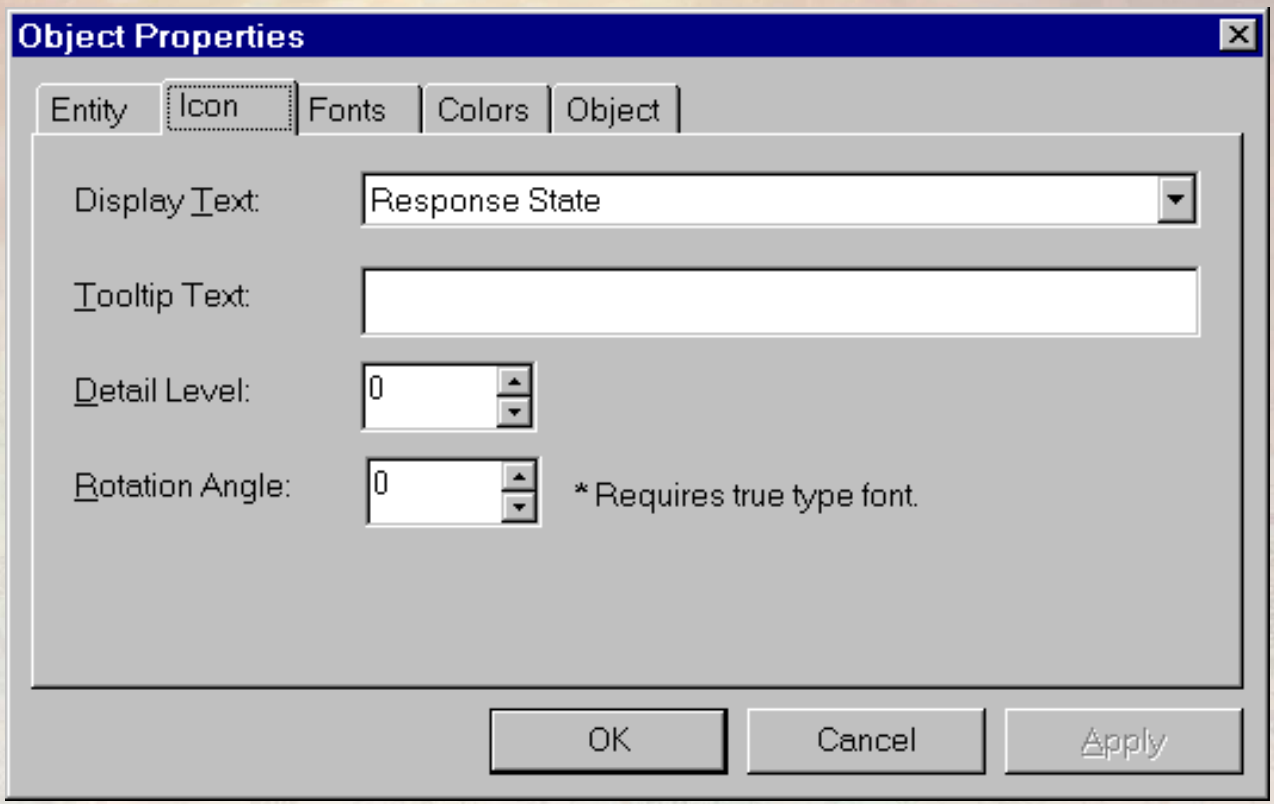
Status Text Controls

- Status Text Controls display a particular aspect of the information collected from the intersection, detector, or section device with which they have been associated



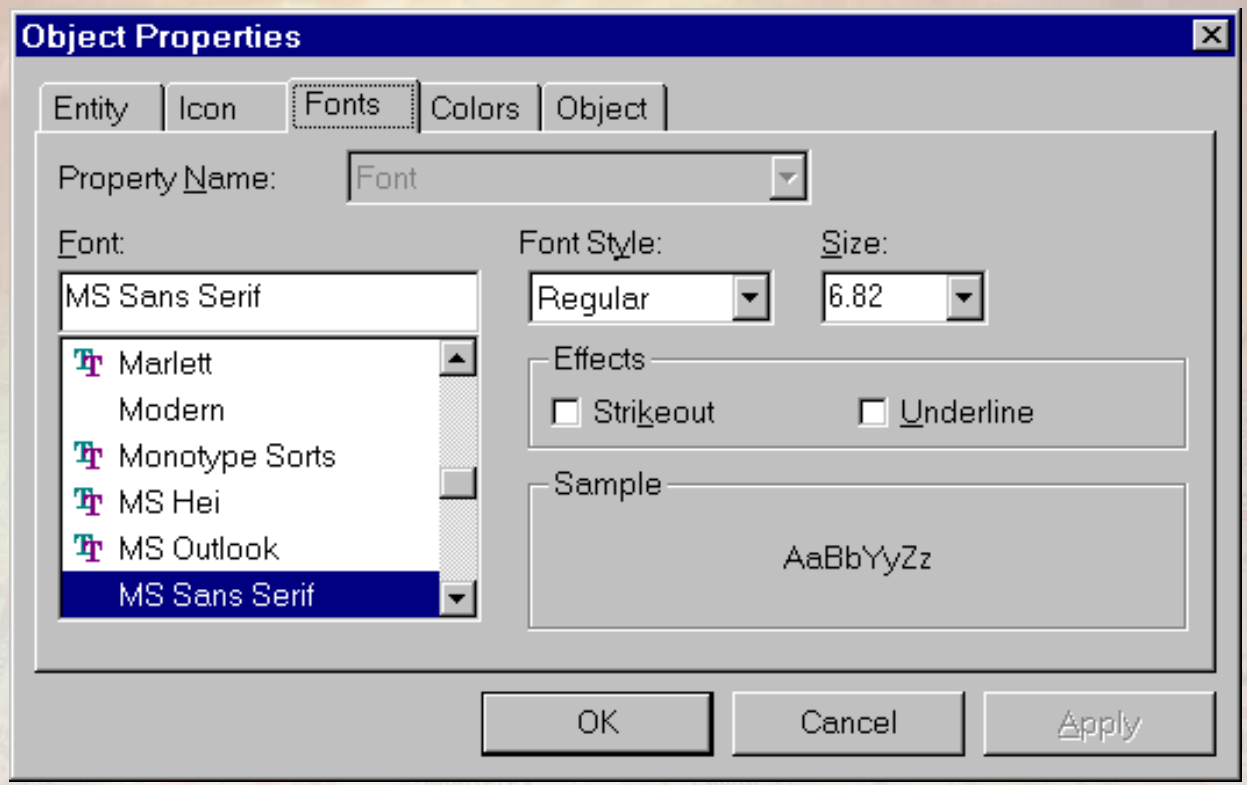
Status Text Control Properties

The Icon page is used to select the TCS data aspect, ToolTip text, and rotation angle of the text control



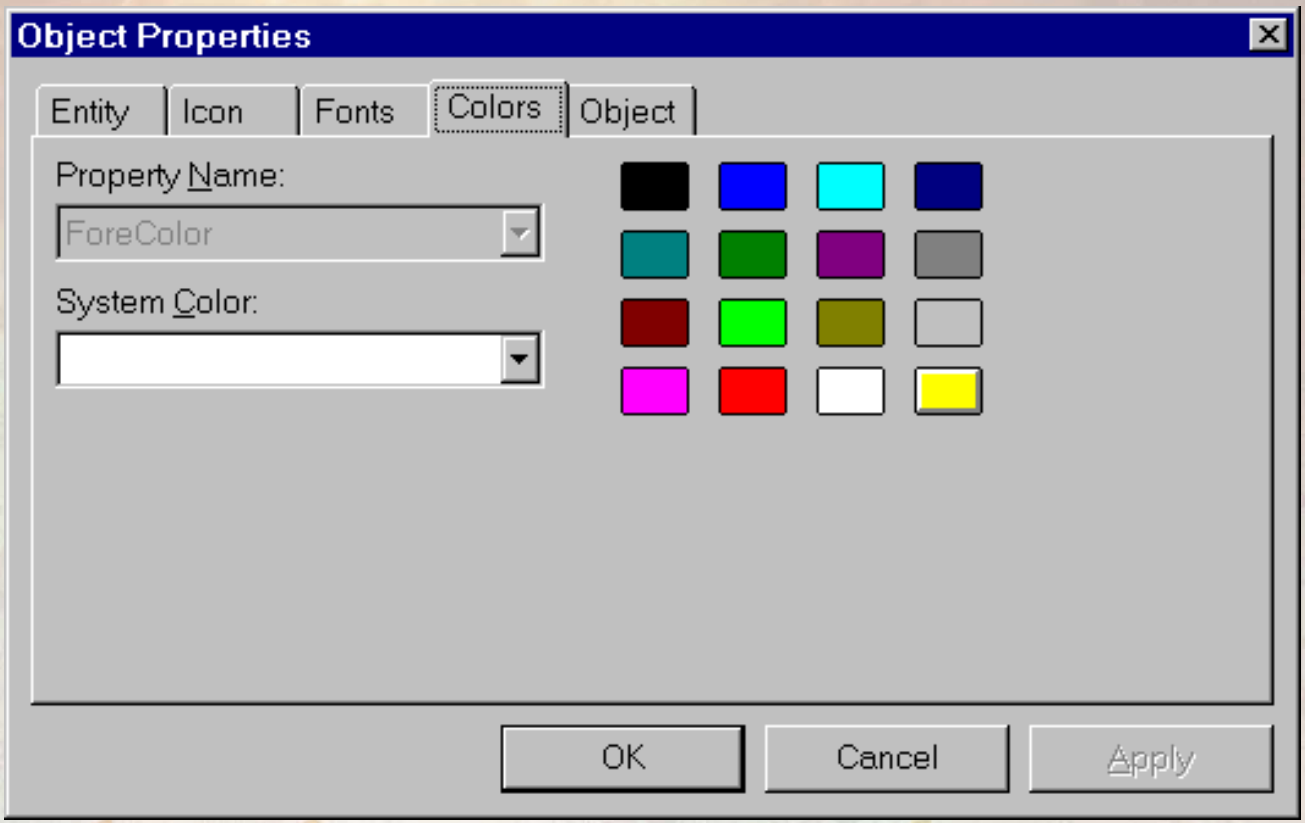
Status Text Control Properties (cont.)

The Font page is used to specify the font, style, and size of the displayed text



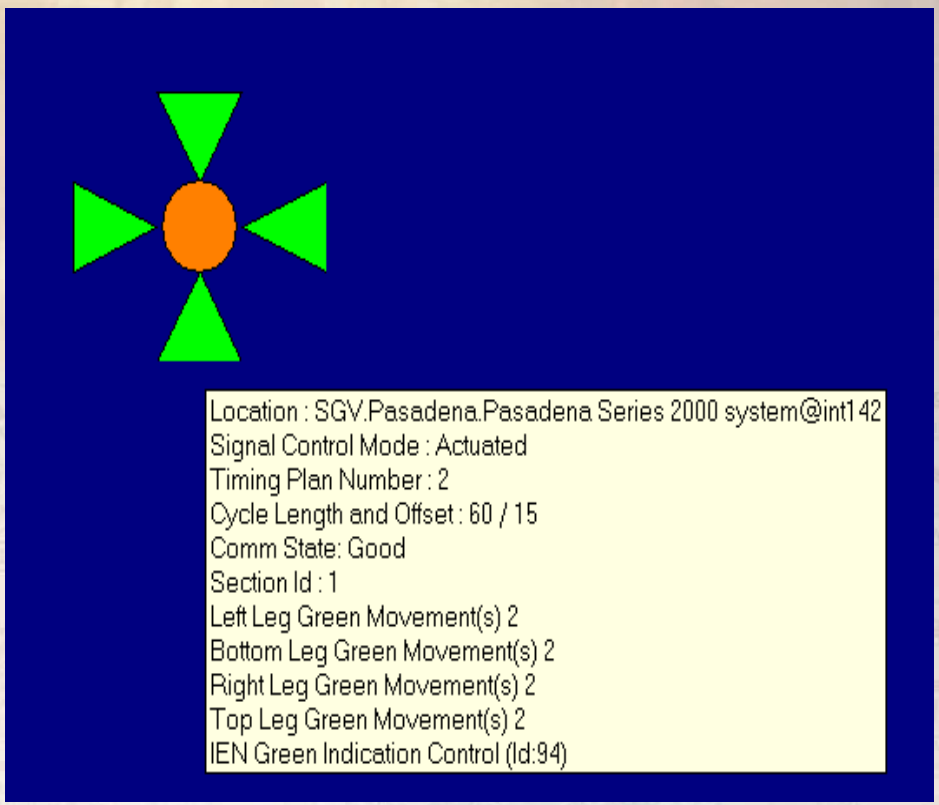
Status Text Control Properties (cont.)

The Colors page is used to specify the color of the displayed text



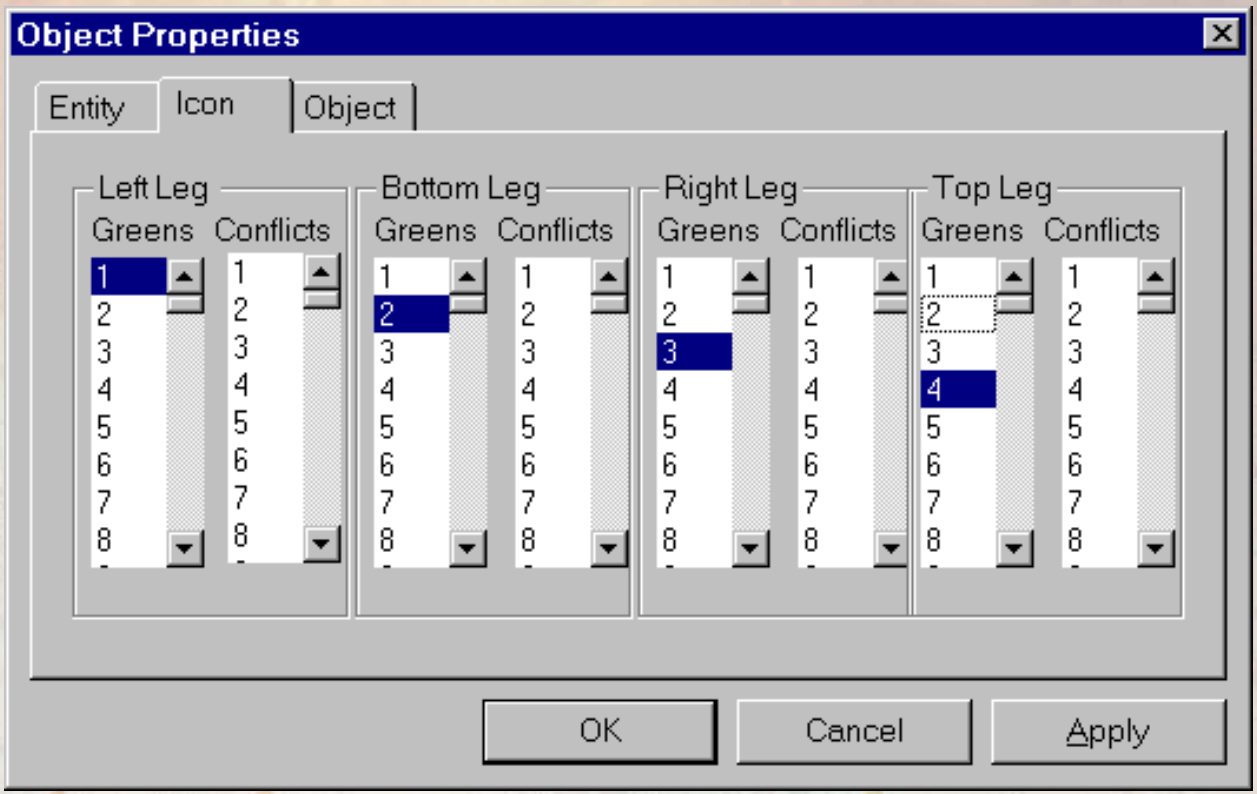
Intersection w/ Green Indications Controls

- Intersection w/ Green Indications Controls display information from their associated intersection controllers as well as indicate the traffic signal being show at each side of the intersection



Int. w/ Green Indications Control Properties

The Icons page is used to specify green and conflict phase(s) for each of the control's four legs



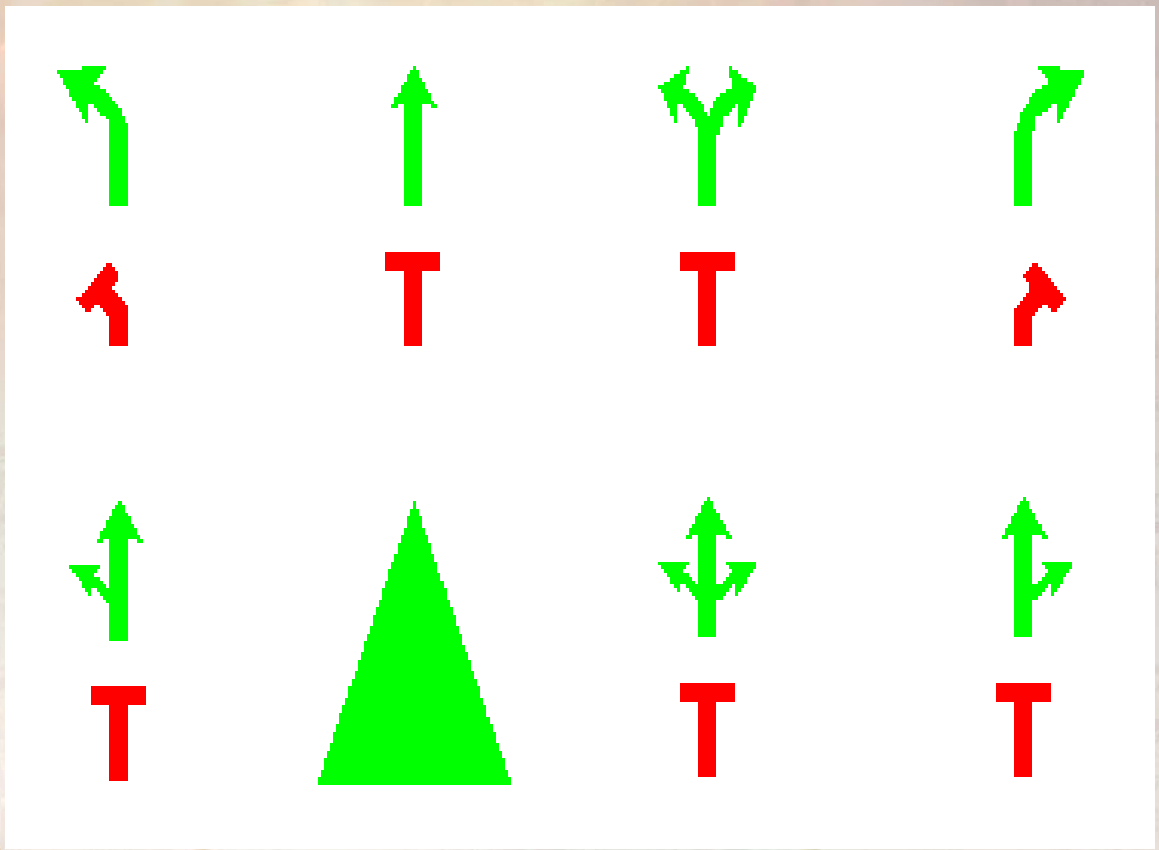
Int. w/ Green Indications Control Properties(cont.)

Option	Description
L/B/R/T Greens	Specifies the phase(s) for which the leg of the control will indicate a green signal
L/B/R/T Conflicts	Specifies the phase(s) for which the leg of the control cannot indicate a green or yellow signal

- An Intersection w/ Green Indications Control provides generalized traffic signal indications for up to four sides of an intersection.
- Use the Green Indication Control to provide an indication for a particular lane of traffic.

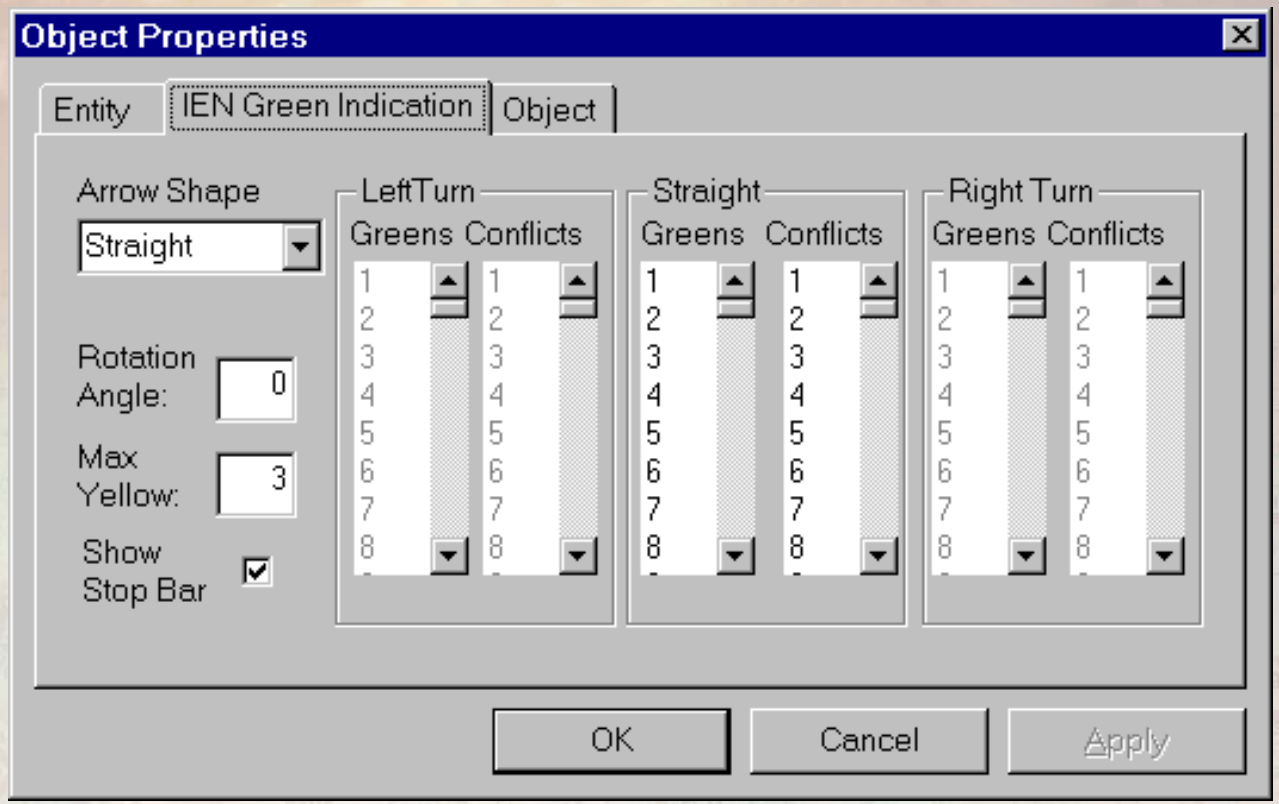
Green Indication Controls

- Green Indication Controls are used to represent the traffic signal being shown to a particular lane of traffic



Green Indication Control Properties

The Icon page is used to configure the appearance and behavior of the green arrow control

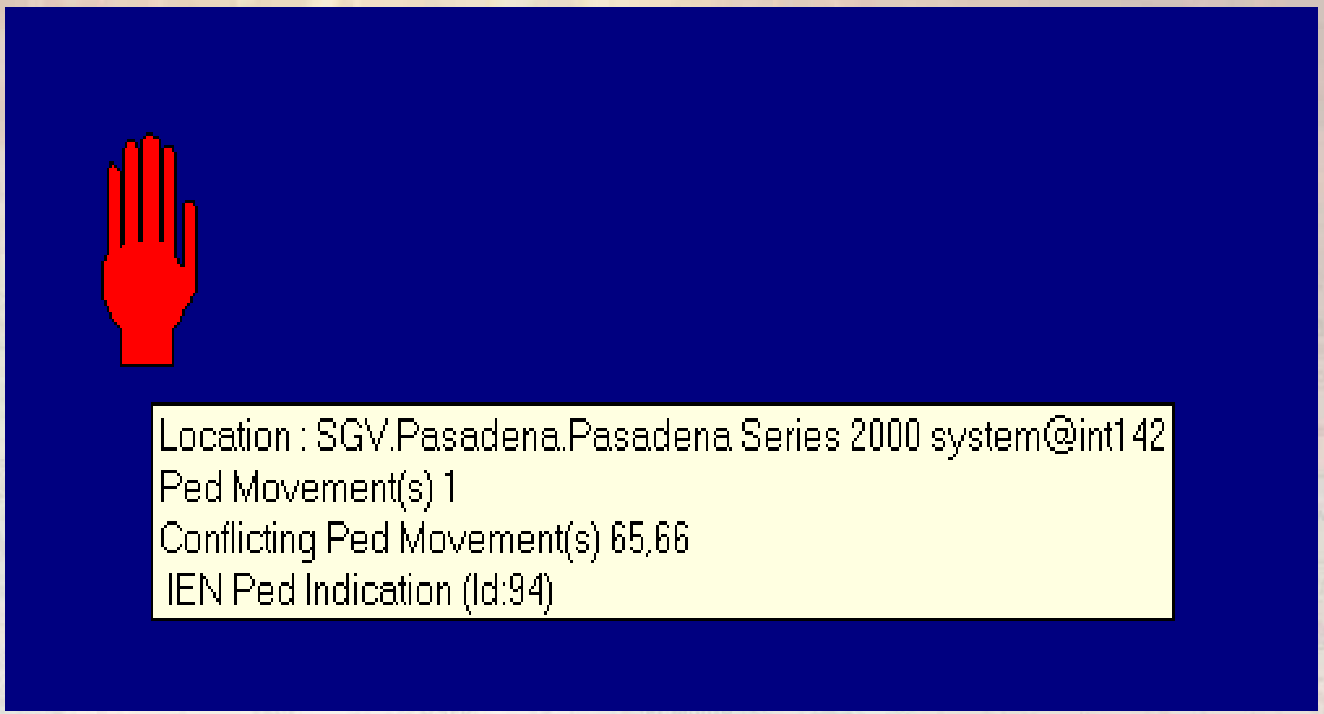


Green Indication Control Properties (cont.)

Option	Description
Arrow Shape	Specifies the shape of the green arrow
Rotation Angle	Specifies the rotation angle of the green arrow
Max Yellow	Specifies the number of seconds to indicate a yellow signal after the green phase has ended (Max yellow values must be approximated since they are not directly collected from remote TCS systems)
Show Stop Bar	Toggles on and off stop bar indications
LT/S/RT Greens	Specifies the phase(s) for which the control will indicate a green signal
LT/S/RT Conflicts	Specifies the phase(s) for which the control cannot indicate a green or yellow signal

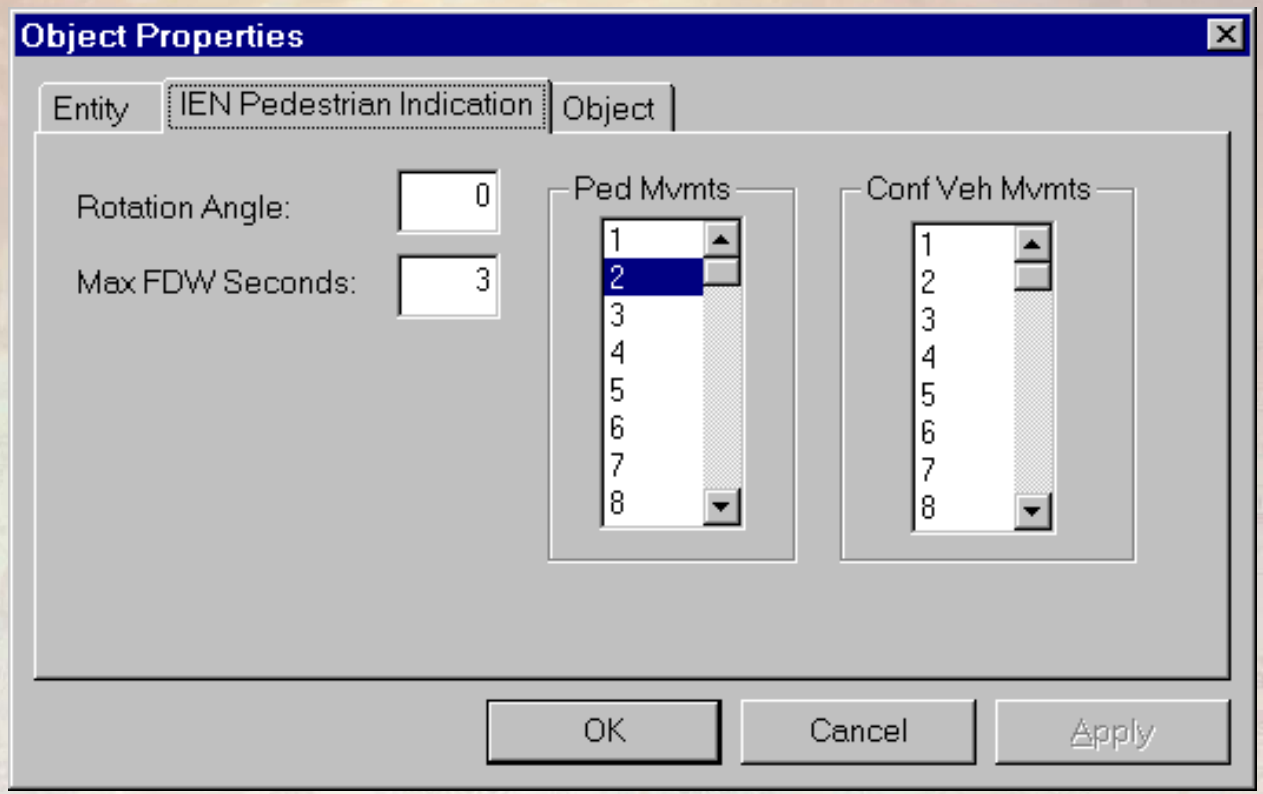
Pedestrian Indication Controls

- Pedestrian Indication Controls are used to represent the pedestrian signal being shown on a particular side of an intersection



Pedestrian Indication Control Properties

The Icons page is used to configure the appearance and behavior of the Ped. Control

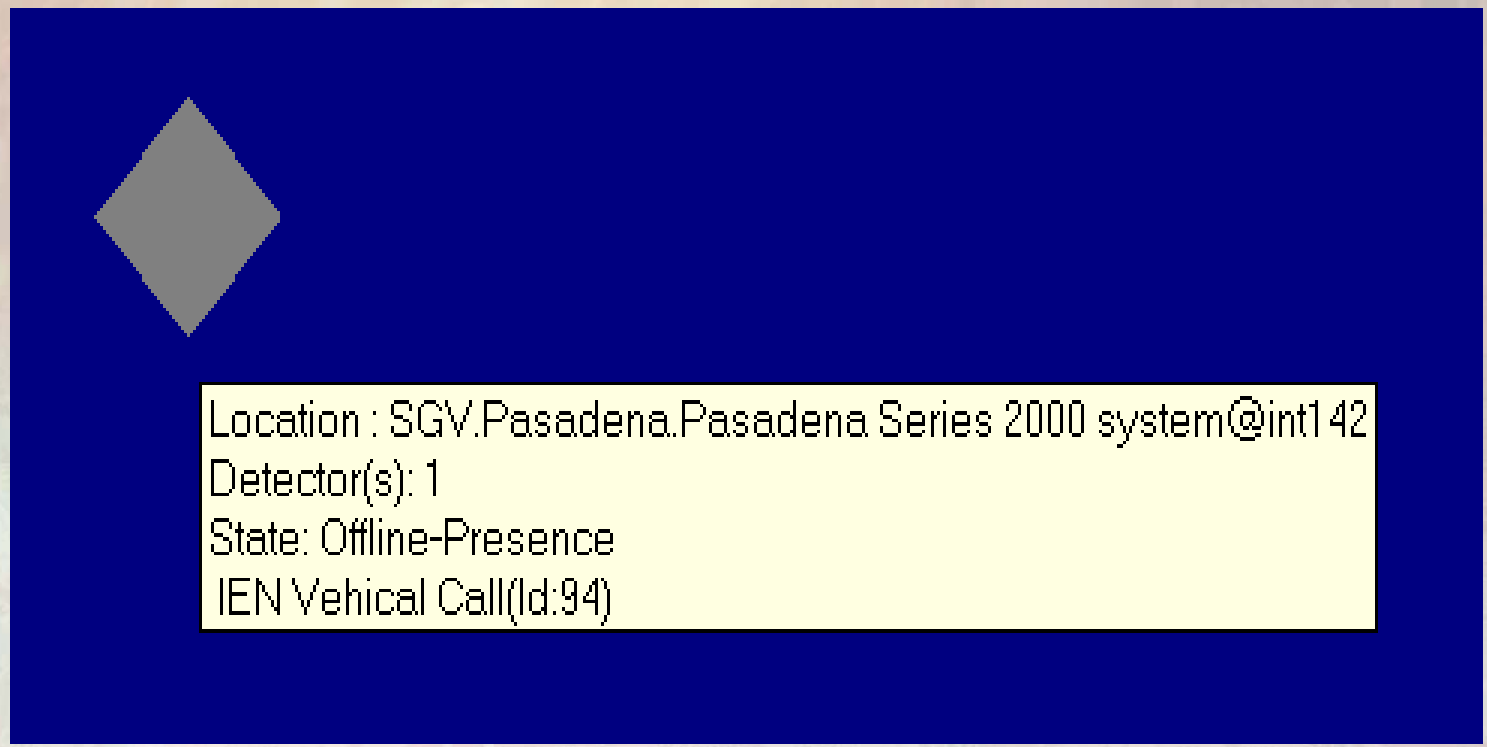


Ped. Indication Control Properties (cont.)

Option	Description
Rotation Angle	Specifies the rotation angle of the pedestrian control
Max FDW Seconds	Specifies the number of seconds to indicate a flashing-don't-walk signal after the ped phase has ended (Max FDW seconds values must be approximated since they are not directly collected from remote TCS systems)
Ped Movements	Specifies the pedestrian phase(s) for which the control will indicate a walk signal
Conflicting Vehicle Movements	Specifies the vehicle phase(s) for which the control cannot indicate a walk or flashing-don't-walk signal

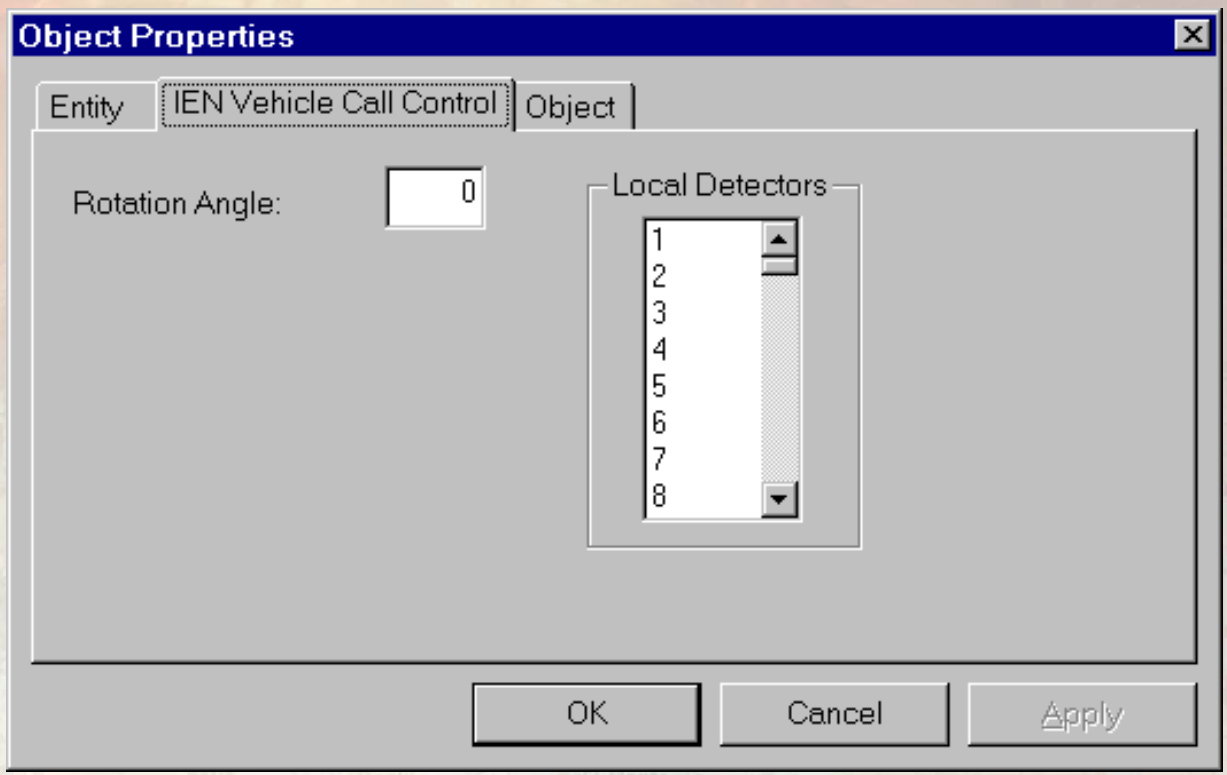
Vehicle Call Controls

- Vehicle Call Controls indicate the vehicle presence-state of actuation detectors



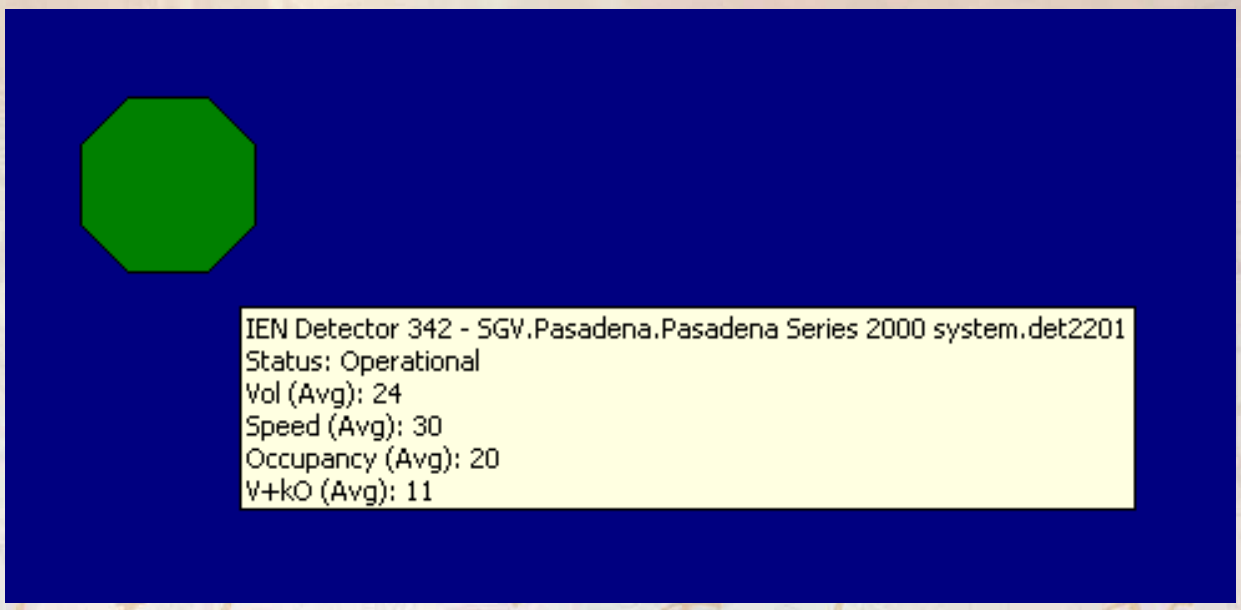
Vehicle Call Control Properties

The Icon page is used to configure the rotation angle and the actuation detector number for the control



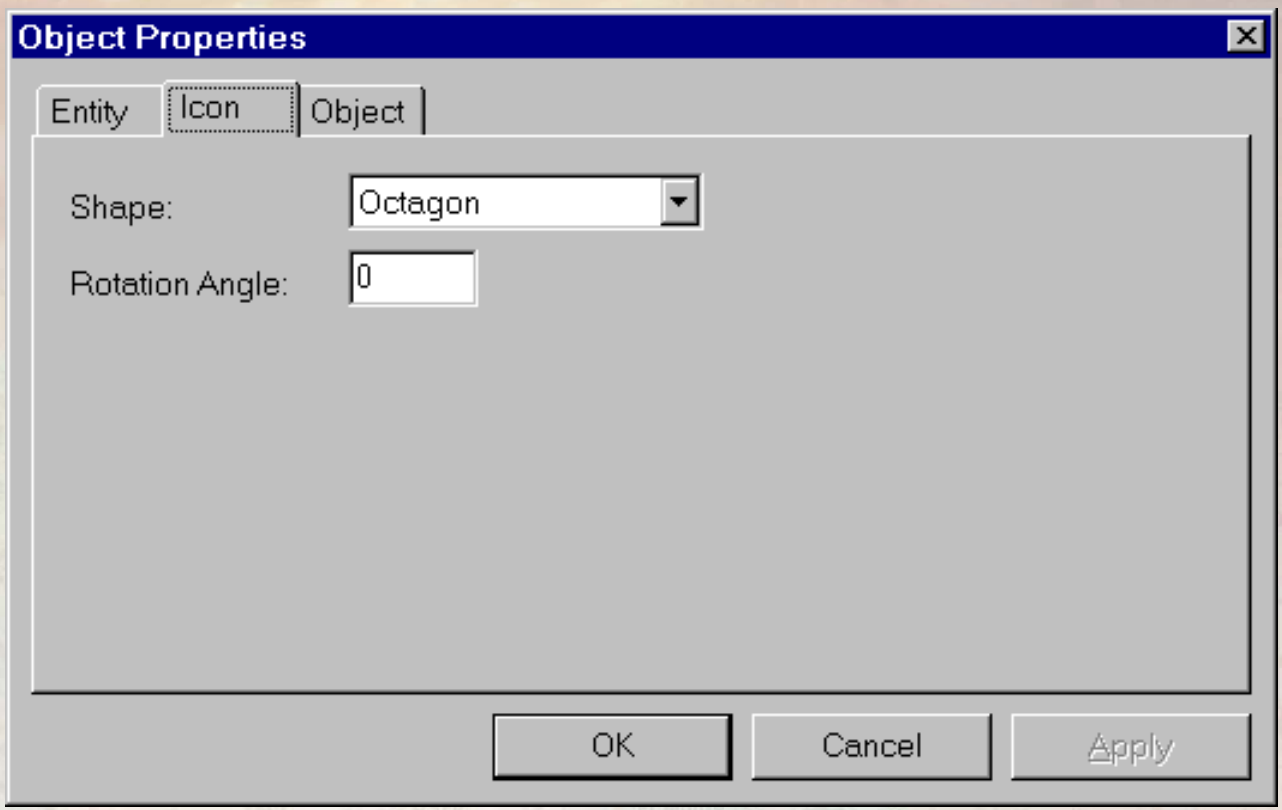
Detector Controls

- Detector Controls displays status, volume, speed, occupancy, or V+*k*O data from their associated VOS detectors
- The controls can be drawn as rectangles or octagons

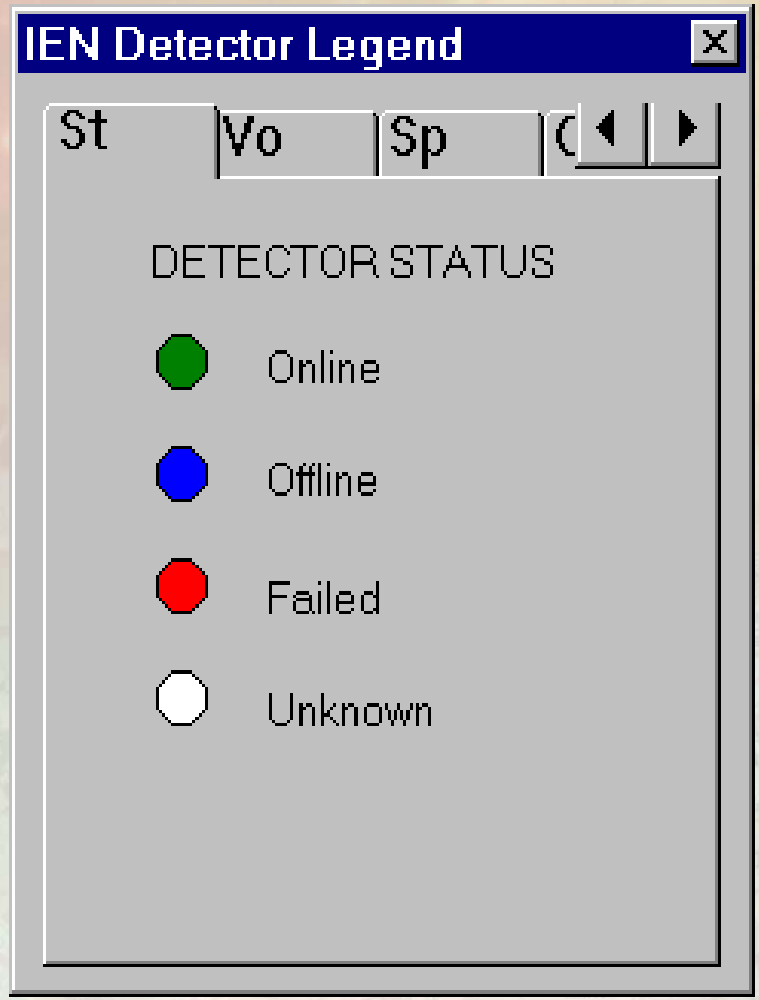


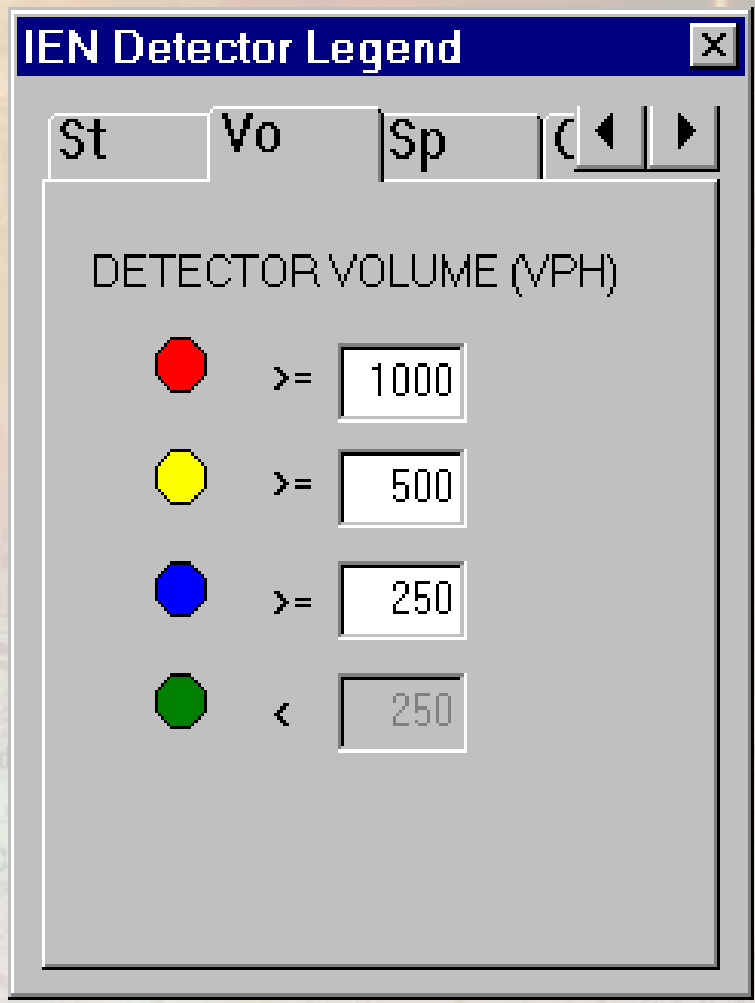
Detector Control Properties

The icons page is used to configure the shape and rotation angle of the control

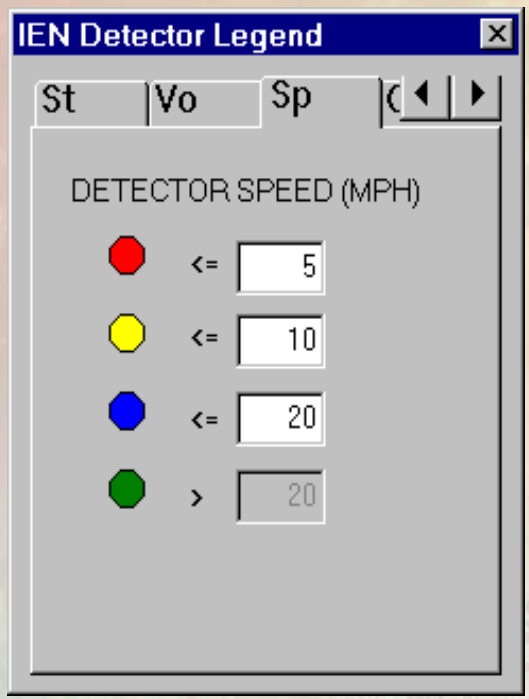


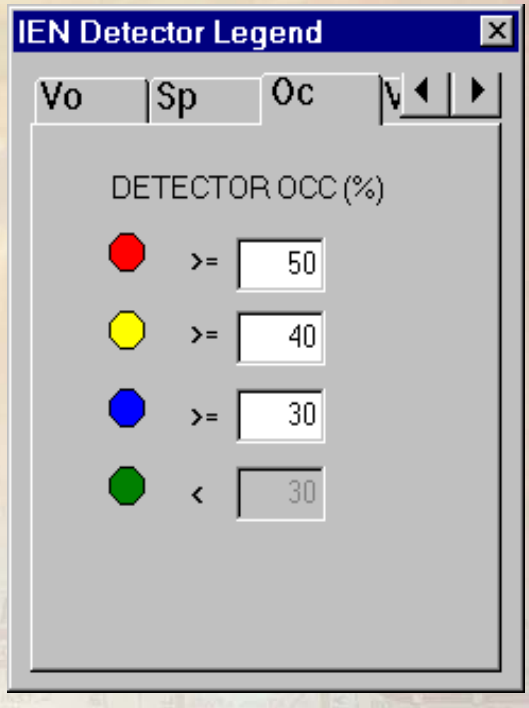
Detector Legend

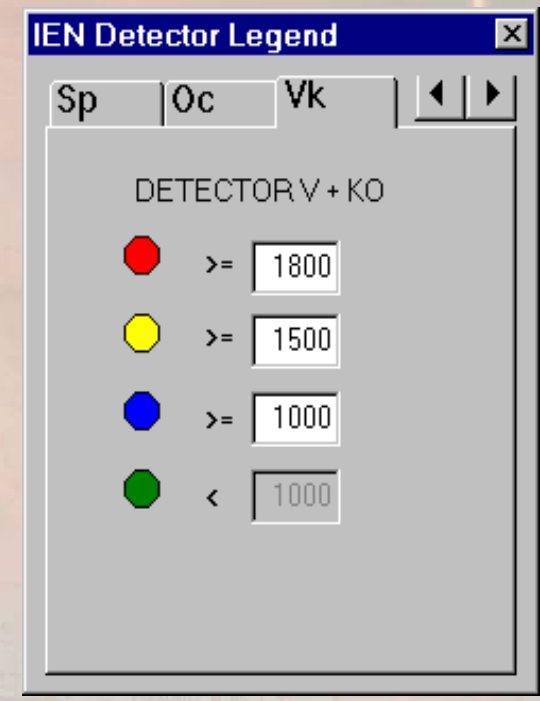




Detector Legend (cont.)



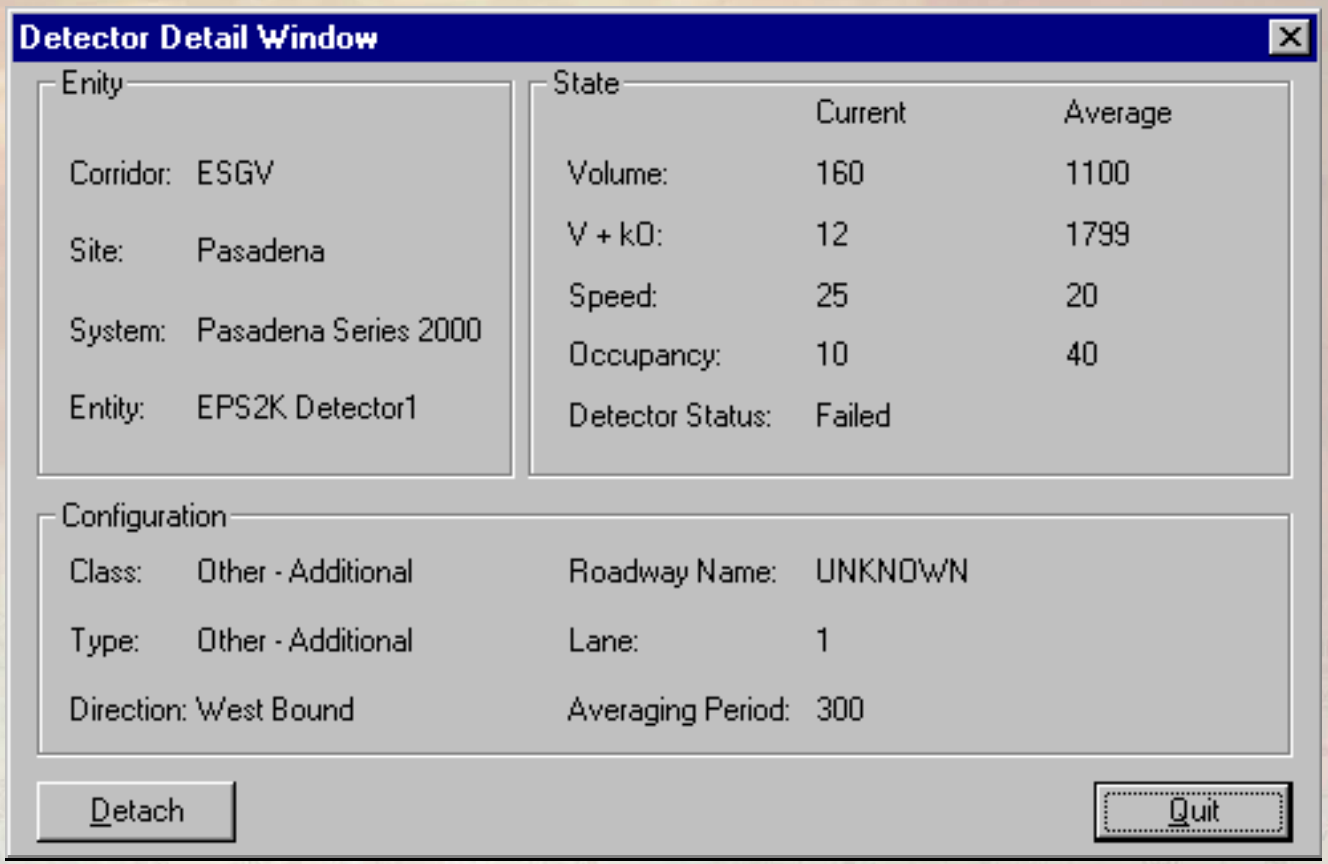




Detector Detail View

- Detector Detail Views are accessible through Detector Controls
- The View allows operators to monitor detailed status and VOS data for a single detector
- To open the view, double-click the control or select “Monitor” from the control’s pop-up menu
- The Detach button is used to disassociate a View from the current diagram, allowing operators to open additional Detector Detail Views

Detector Detail View (cont)

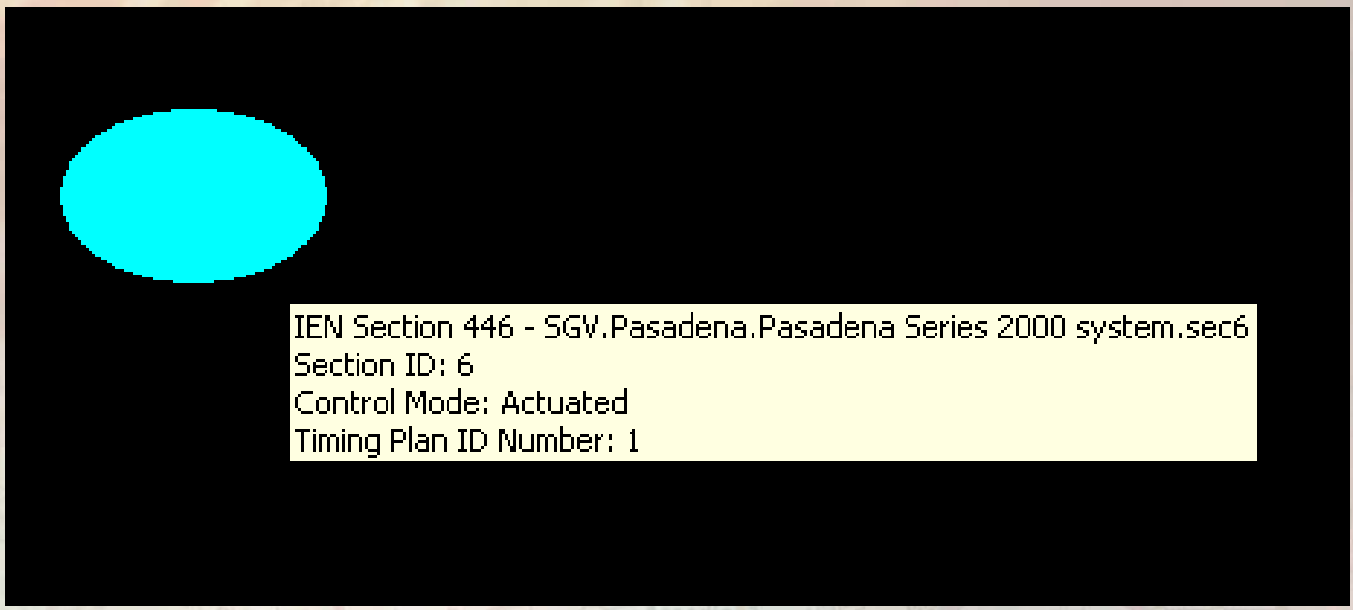


Section Controls

- Section Controls display the operational mode and timing plan of an associated section
- A section is a grouping of intersections
- Sections allow TCS operators to collectively monitor and manage related intersections
- Authorized IEN operators have the ability to change the control mode or timing plan of a section
- Series 2000 intersections that are set to “normal” control mode (labeled as “other” within the IEN) will implement the control mode of their section

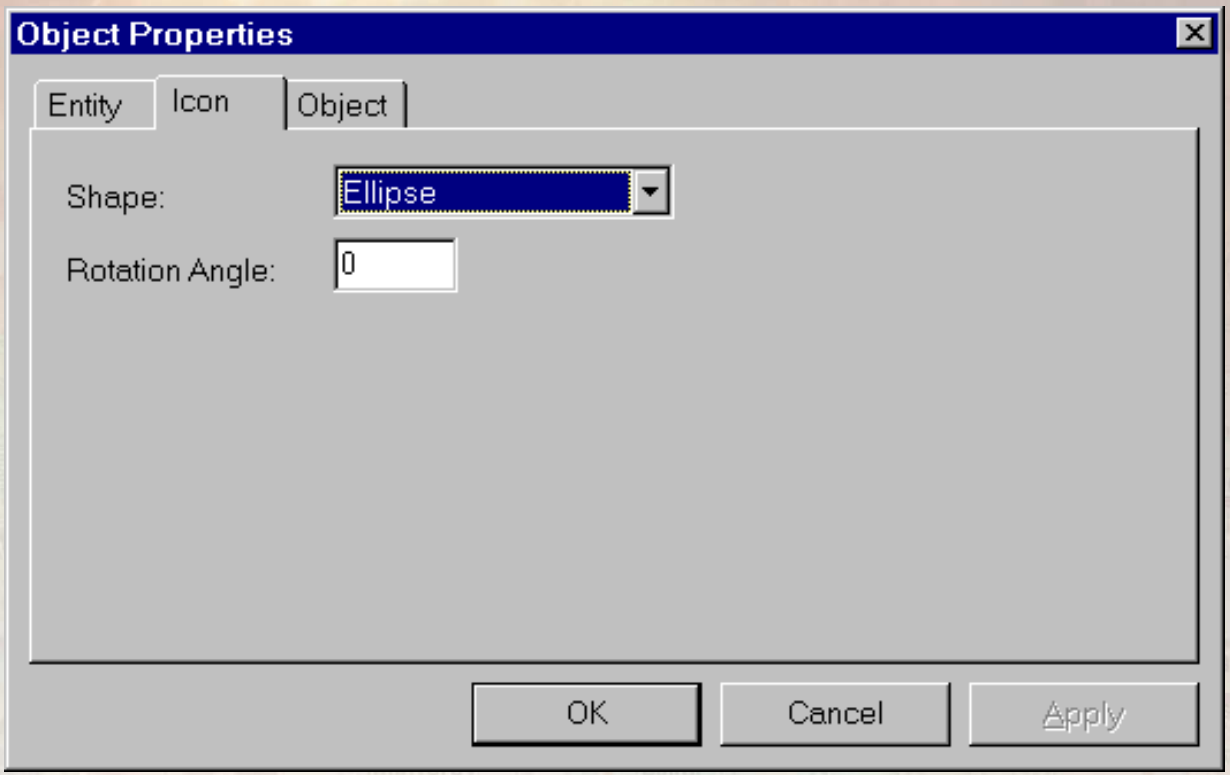
Section Controls (cont.)

- The controls can be drawn as ellipses or rectangles

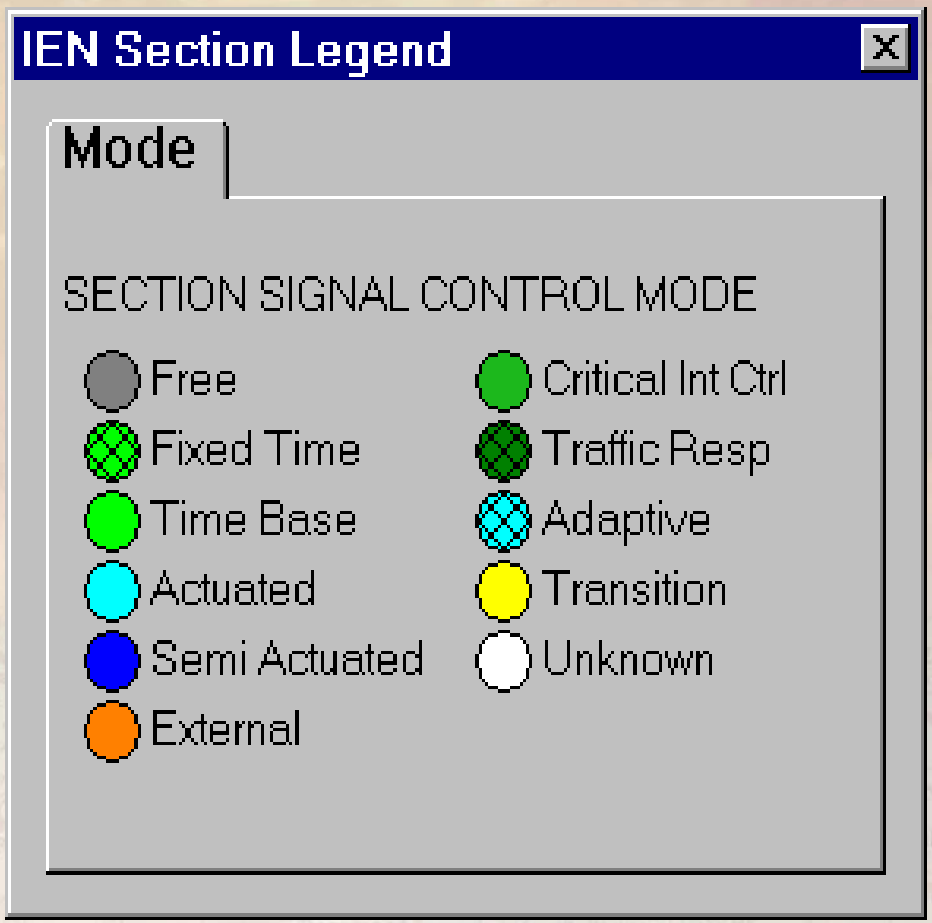


Section Control Properties

The icons page is used to configure the shape and rotation angle of the control



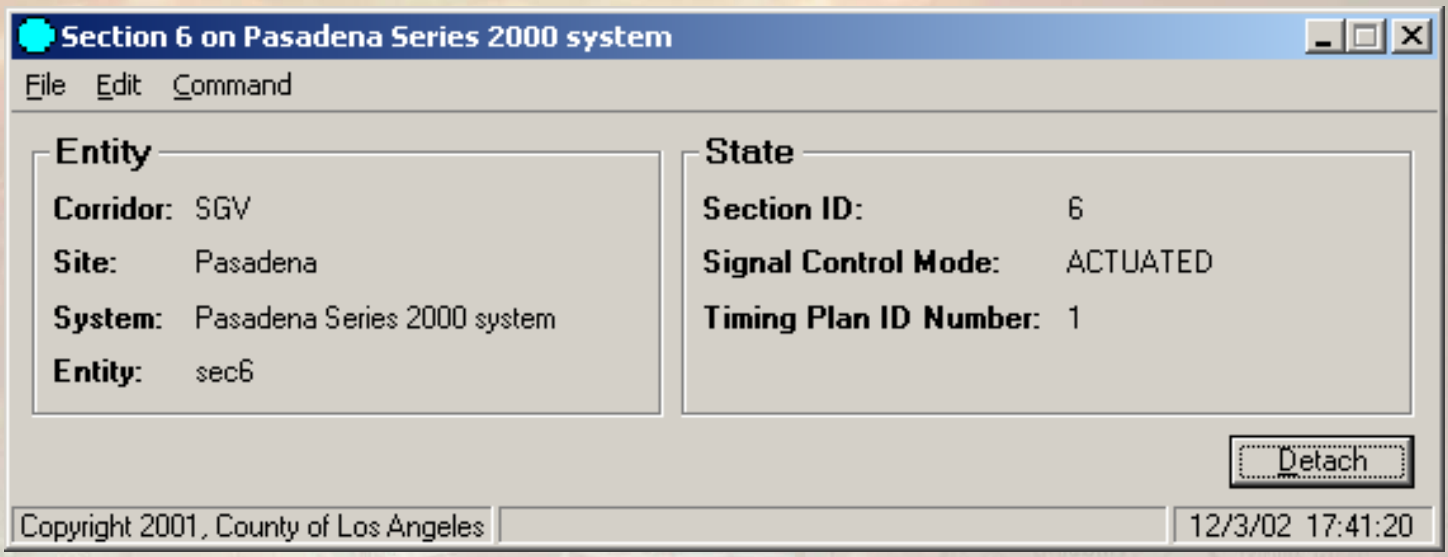
Section Legend



Section Detail View

- Displays current operational parameters (control mode and timing plan) for a single section
- Provides section control options:
  - Change timing plan
  - Change operational mode
  - Release IEN Control
- The View is launched by double-clicking a Section Control or selecting the **Monitor** option from the control's pop-up menu

Section Detail View (cont.)



Section Detail View Menus

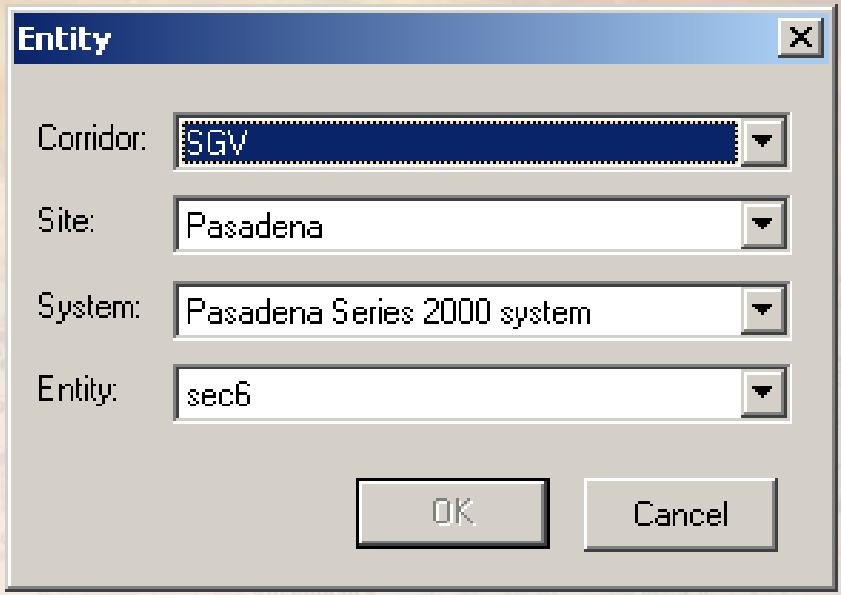
- The Section Detail View provides three menus:
  - File Menu
  - Edit Menu
  - Command Menu

Section Detail View File Menu Options

Option	Description
Print	Sends a screen shot of the Section Detail View to the system's default printer
Detach	Disassociates the current instance of the Section Detail View allowing multiple Views to be opened
Exit	Closes the View

Section Detail View Edit Menu Options

Option	Description
Entity	Launches the Entity dialog, which is used to select the section being monitored in the detail view



Section Detail View Command Menu Options

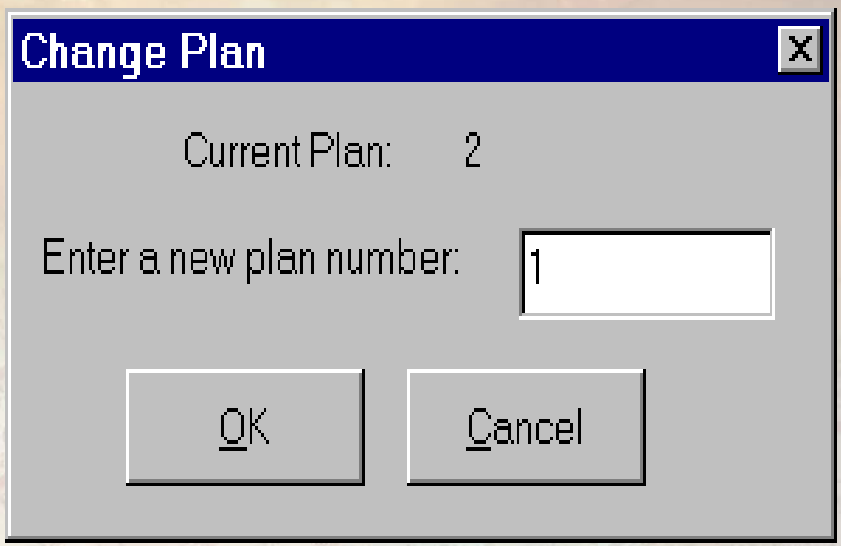
Option	Description
Change Plan	Opens the Change Plan dialog
Change Mode	Opens the Change Mode dialog
Release IEN Control	Releases the selected section from IEN control

Section Command Privileges

- Operators are only able to send commands to sections for which they hold the EXECUTE privilege
- Resource privileges are configured through the *IEN System Configuration Manager*

Change Plan Dialog

- The Change Plan Dialog is used to change the timing plan of the selected Section

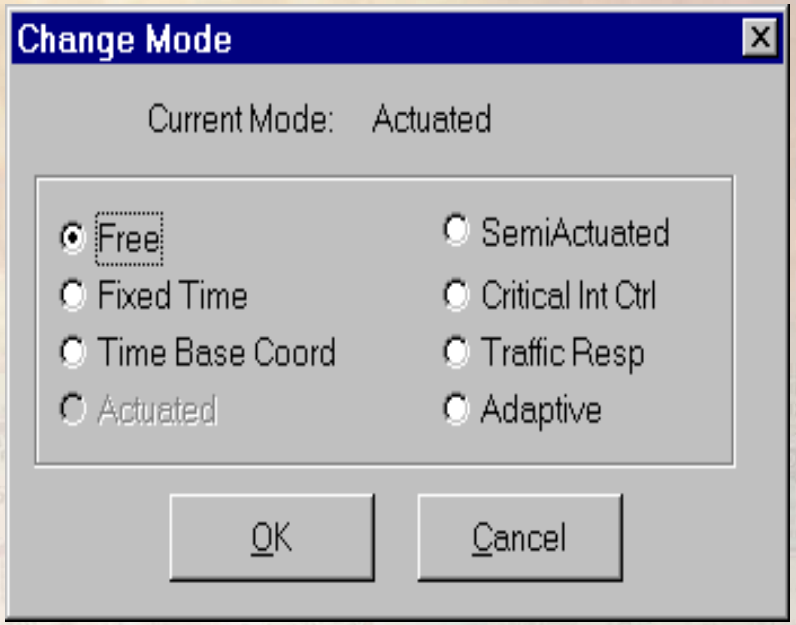


Change Plan Dialog (cont.)

- The dialog identifies the timing plan currently running at the section
- To change the plan, enter the desired plan number in the field provided and click the OK button
- A confirmation dialog is displayed prior to issuing the command
- Clicking Cancel closes the window, dropping the plan change request

Change Mode Dialog

- The Change Mode Dialog is used to change the operational mode of the selected Section

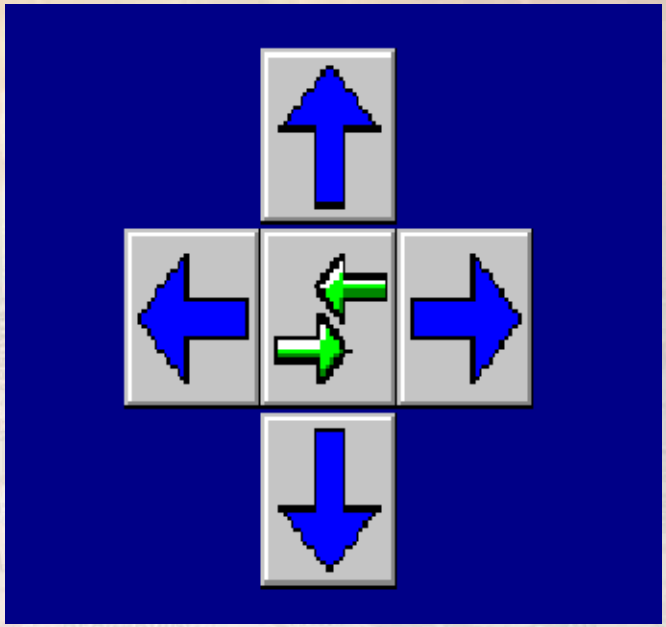


Change Mode Dialog (cont.)

- The current mode is identified at the top of the window
- To change the mode, select the radio button next to the desired mode and click **OK**
- A confirmation dialog is displayed prior to sending the command
- Clicking **Cancel** closes the window, dropping the mode change request

ATMS Hyperlink Control Overview

- The ATMS Hyperlink Control is used to provide links to other Explorer documents or documents from another application

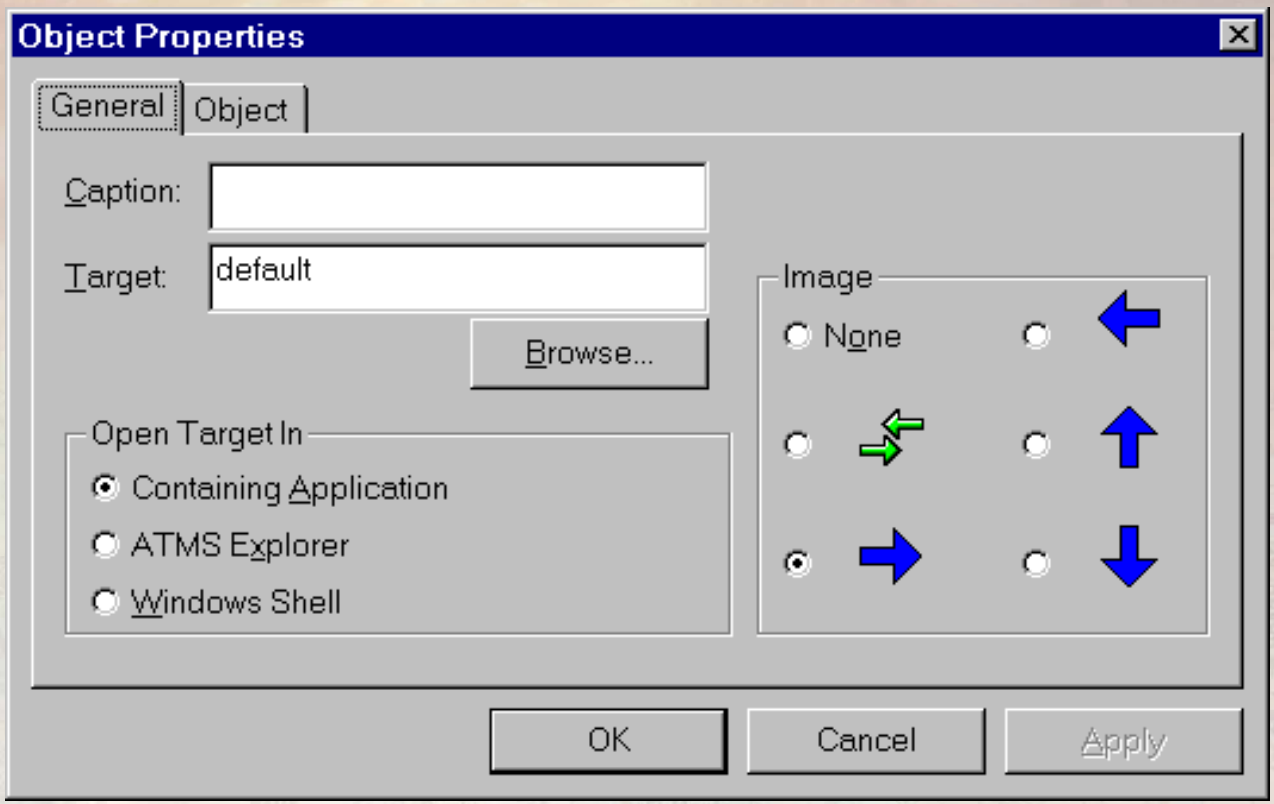


ATMS Hyperlink Controls (cont.)

- Within intersection diagrams hyperlinks could be used to provide to links to diagrams for adjacent intersections or section/regional views
- Operators would then be able to work their way down a street from one intersection diagram to the next

ATMS Hyperlink Control Properties

The General page is used to configure the target document and shape of the hyperlink



ATMS Explorer Menu Bar

- ATMS Explorer provides six (6) pulldown menus with various options for manipulating diagrams and diagram components
  - File Menu
  - Edit Menu
  - View Menu
  - Layout Menu
  - Script Menu
  - Help Menu

ATMS Explorer File Menu Options

Option	Description
New	Opens a new diagram in design mode
Open	Opens the standard Windows File Open dialog, which allows the user to open an existing diagram
Save	Opens the standard Windows File Save dialog, which allows the user to save the current diagram to a file
Save As	Opens the standard Windows File Save As dialog, which allows the user to rename and then save the current diagram to a file
Import Background	Opens the standard Windows Browse dialog, which allows the user to select a background to import into the current diagram
Properties	Opens the Document Properties Window

ATMS Explorer File Menu Options (cont.)

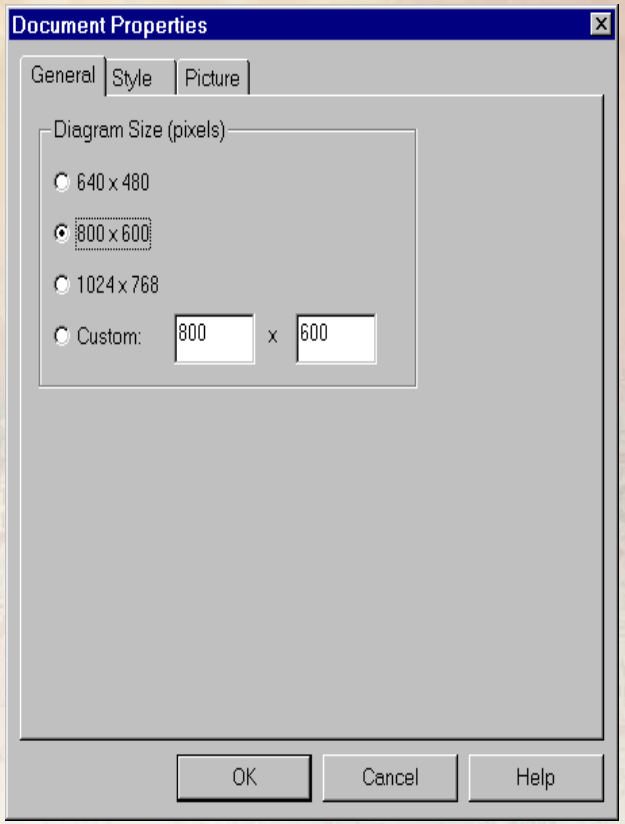
Option	Description
Print	Opens the standard Windows Print dialog
Print Preview	Opens a print preview window
Print Setup	Opens the standard Window Print setup dialog
Send	Allows operators to send the current diagram to other operators via e-mail
Recent File	Lists the most recent diagrams opened by the operator
Exit	Closes the application

Document Properties Window

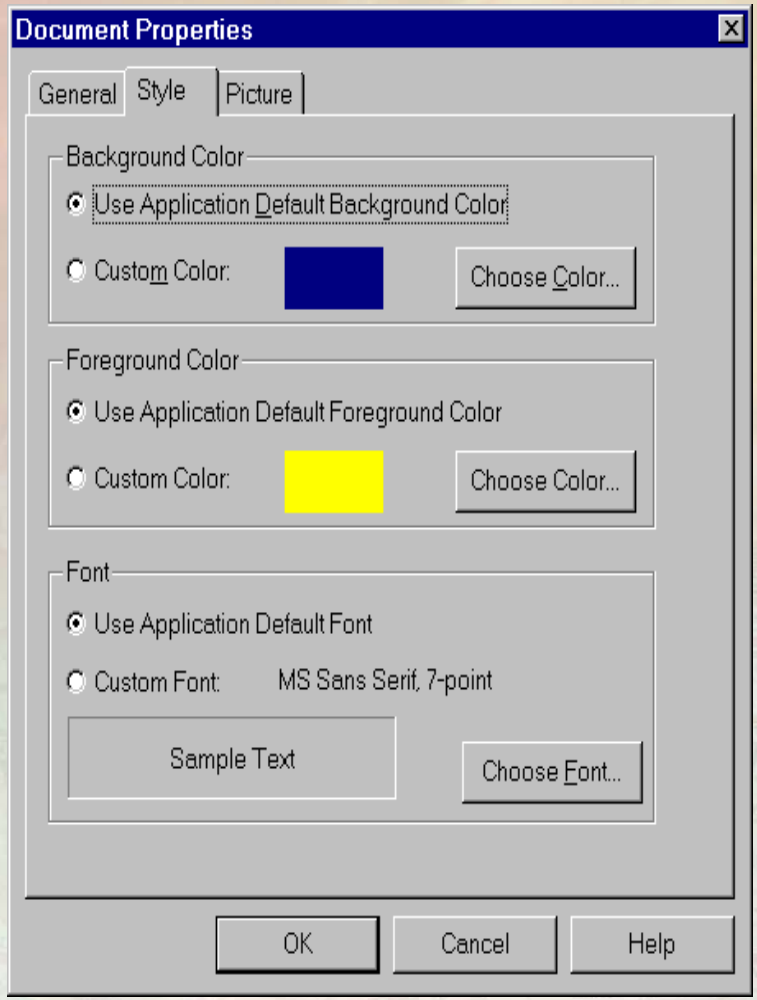
- Document Properties Window is open by clicking on the File Menu and selecting **Properties**
- The Document Properties window contains several diagram configuration options
- The window consists of three (3) tabbed pages
  - General
  - Style
  - Picture

Document Properties Window (cont.)

- The General page is used to set the dimensions of the document in pixels

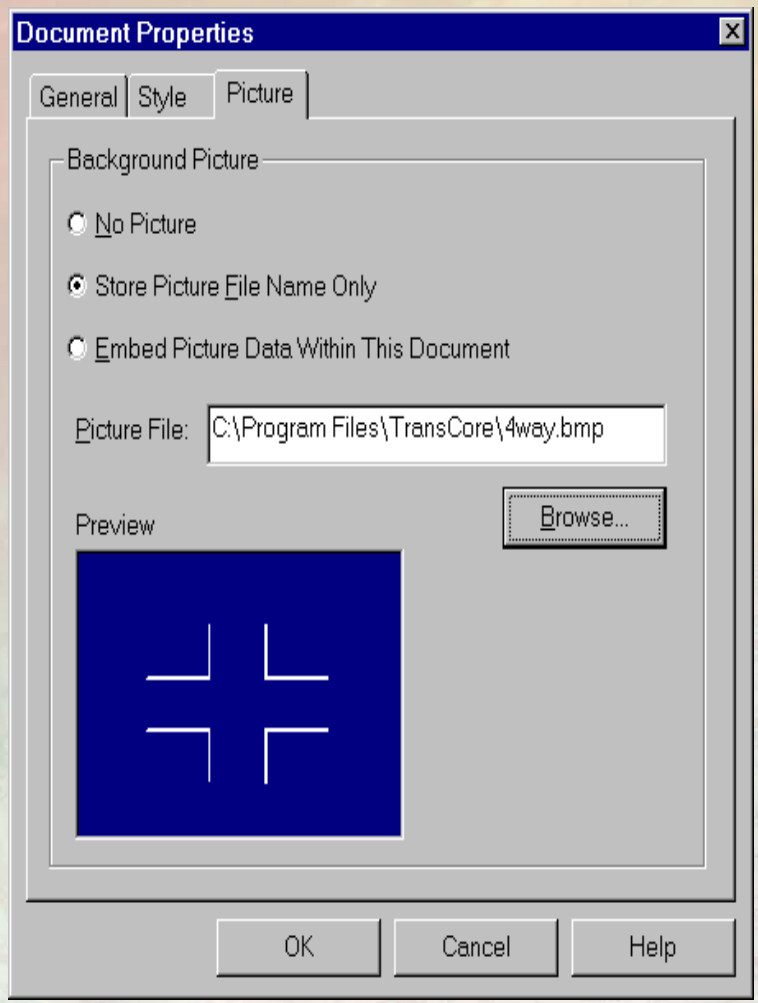


Document Properties Window (cont.)



- The Style page is used to define background color, foreground color, and font defaults for the current diagram
- Document defaults can be set to the application defaults or operator-specified custom values

Document Properties Window (cont.)



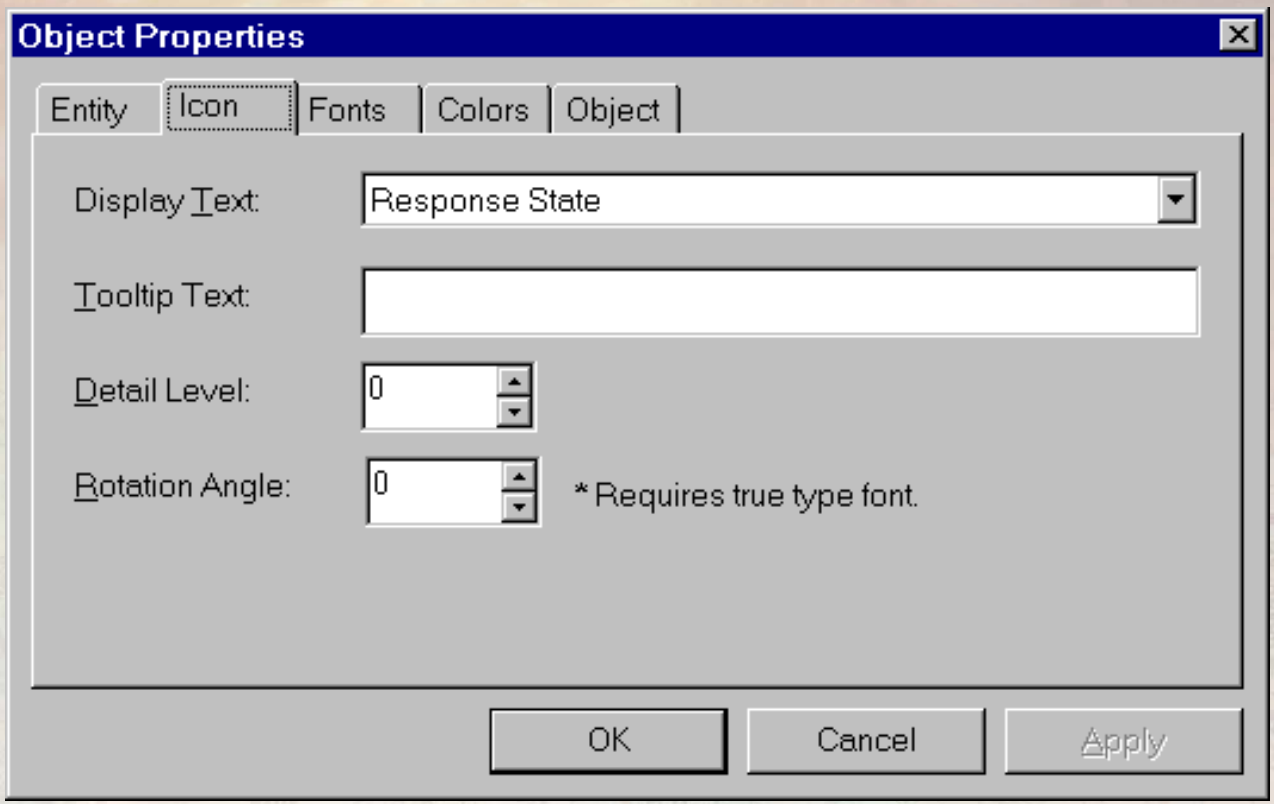
- The Picture page is used to specify the document's background graphic
- Backgrounds can either be embedded directly within the document or loaded from a file whenever the diagram is opened

ATMS Explorer Edit Menu Options

Option	Description
Undo	Rolls back the most recent edit action
Redo	Reapplies the most recently rolled back edit action
Cut	Moves the selected object to the clipboard
Copy	Sends a copy of the selected object to the clipboard
Paste	Copies the contents of the clipboard to the current diagram
Paste Special	Allows the operator to format the contents of the clipboard and then copy it to the current diagram
Delete	Removes the selected object
Select All	Selects all embedded objects in the current diagram

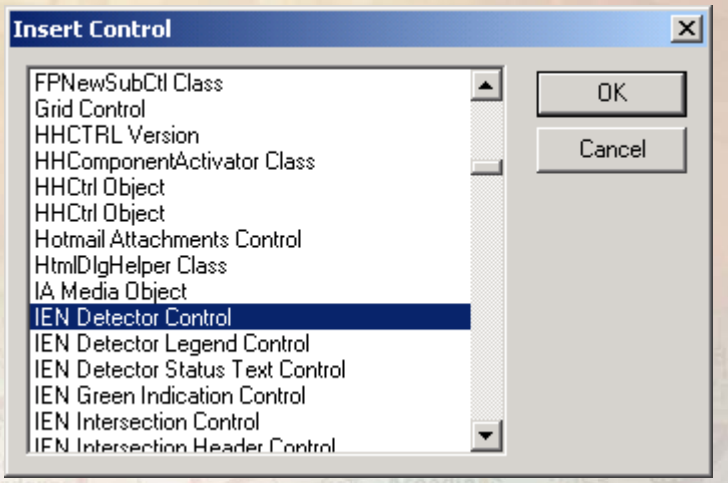
ATMS Explorer Edit Menu Options (cont.)

Option	Description
Properties	Opens the Object Properties window



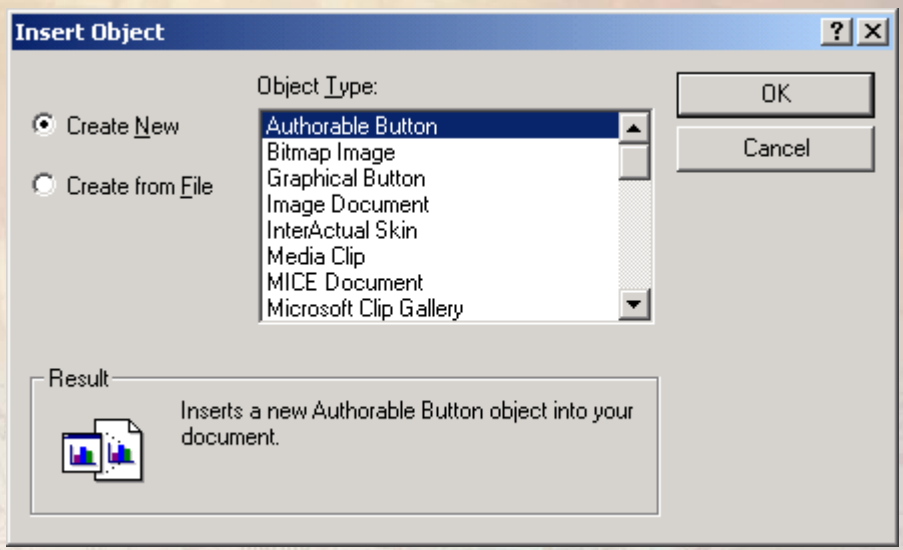
ATMS Explorer Edit Menu Options (cont.)

Option	Description
Insert OLE Control	Allows operators to add an OLE (ActiveX) control to the current diagram



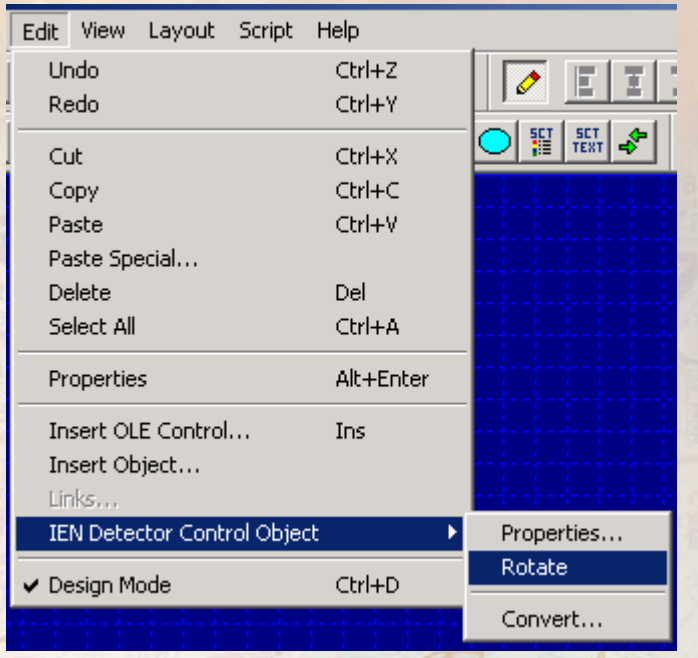
ATMS Explorer Edit Menu Options (cont.)

Option	Description
Insert Object	Allows operators to add an Object to the current diagram



ATMS Explorer Edit Menu Options (cont.)

Option	Description
Links	The links option is not longer supported in ATMS Explorer
Object	An object-specific submenu, which contains options related to the selected object
Design Mode	Toggles the current diagram between run and design modes



ATMS Explorer View Menu Options

Option	Description
Match Window Size to Document Size	Resizes the Explorer window to match the size of the selected document
Stretch Document to Fit Window	Resizes a document to fit the current size of the ATMS Explorer window
Show Object Outlines	Shows/Hides a bounding box around the objects embedded in the diagram
Show Grid	Shows/Hides the background grid displayed while in design mode
Message Window	Shows/Hides the TransCore Message Window component for the application
Main Toolbar	Shows/Hides the Main toolbar

ATMS Explorer View Menu Options (cont.)

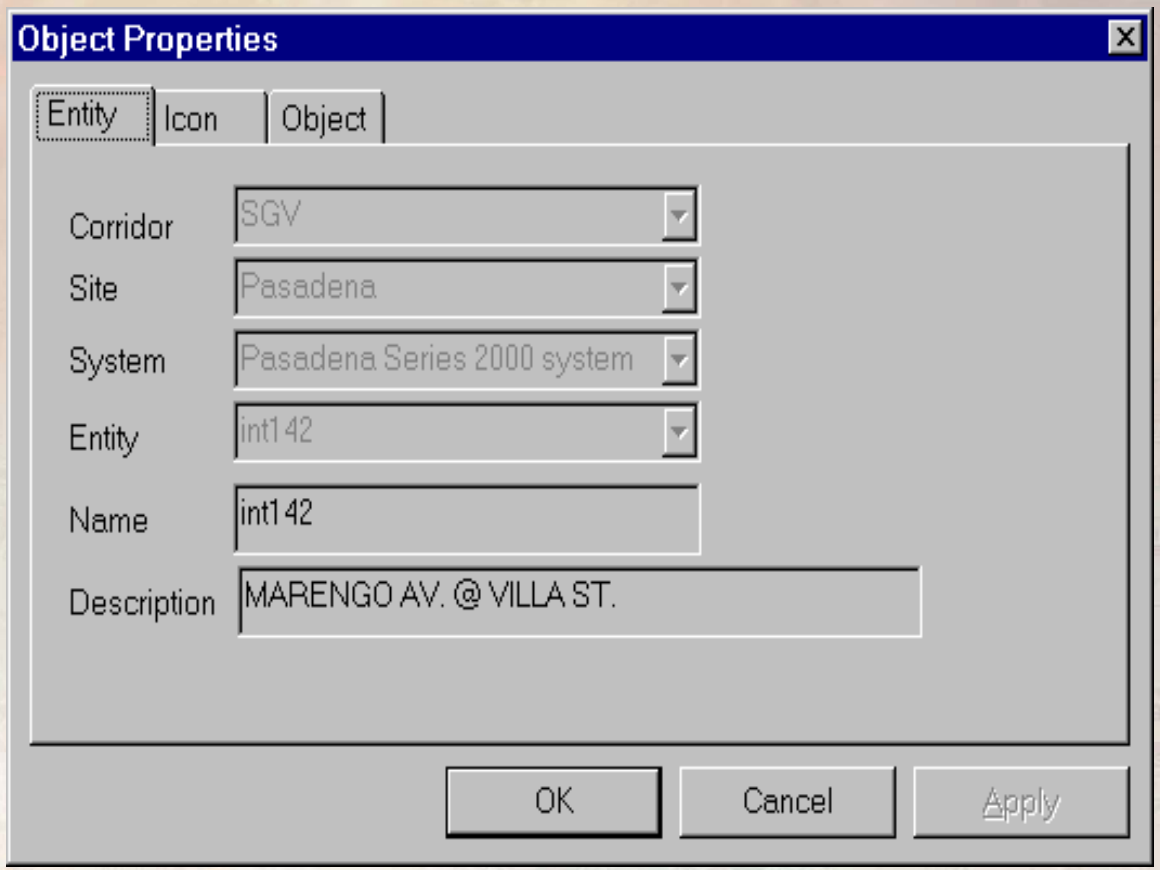
Option	Description
Design Toolbar	Shows/Hides the Design toolbar
Insert Control Toolbar	Shows/Hides the Insert Control toolbar
Status Bar	Shows/Hides the Status Bar
Options	Opens the Options window in which the operator can change several application settings
Refresh View	Allows the operator to manually refresh the components of the current diagram

Object Properties Window

- The Object Properties window is used to configure the selected object or ActiveX control
- The window consists of a series of tabbed pages
  - Entity
  - Object
  - Control-specific page(s)
- The window can be opened in the following ways:
  - Selecting **Properties** from a control's right-click pop-up menu
  - Clicking on a control and selecting Edit Menu → **Properties**
  - Double-clicking a control while in design mode

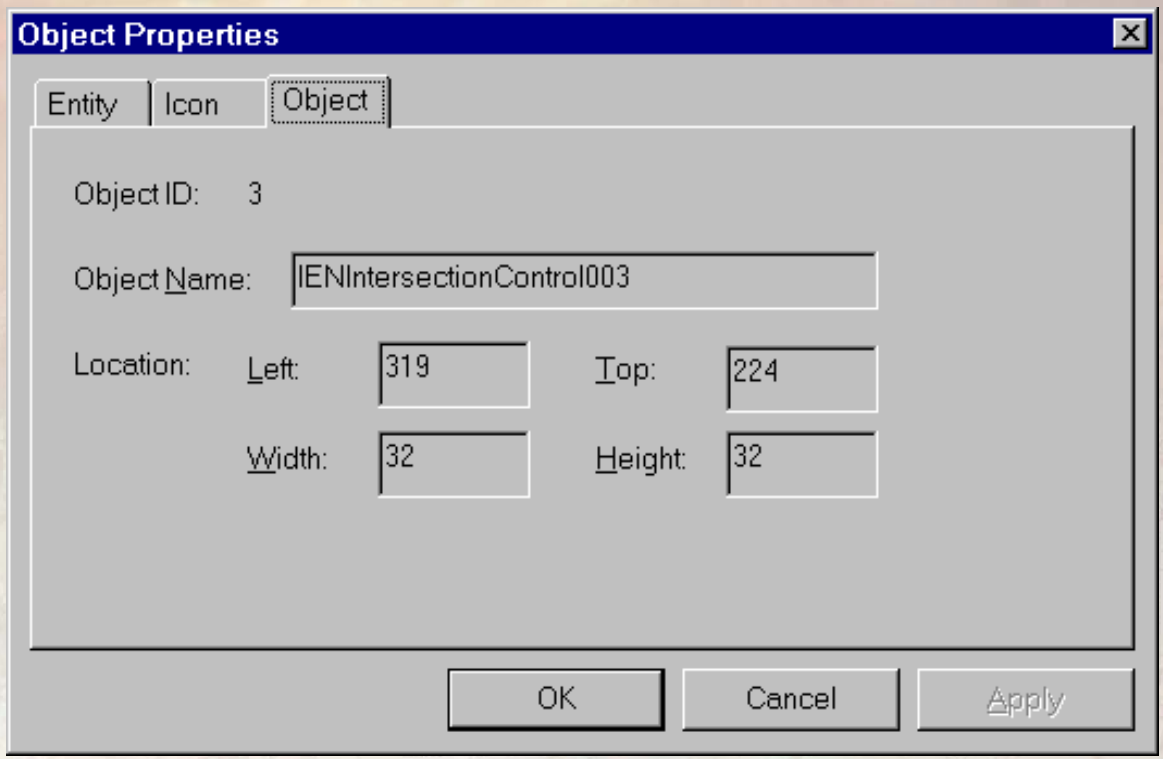
Object Properties Window

The Entity page is used to associate the control with a particular TCS device



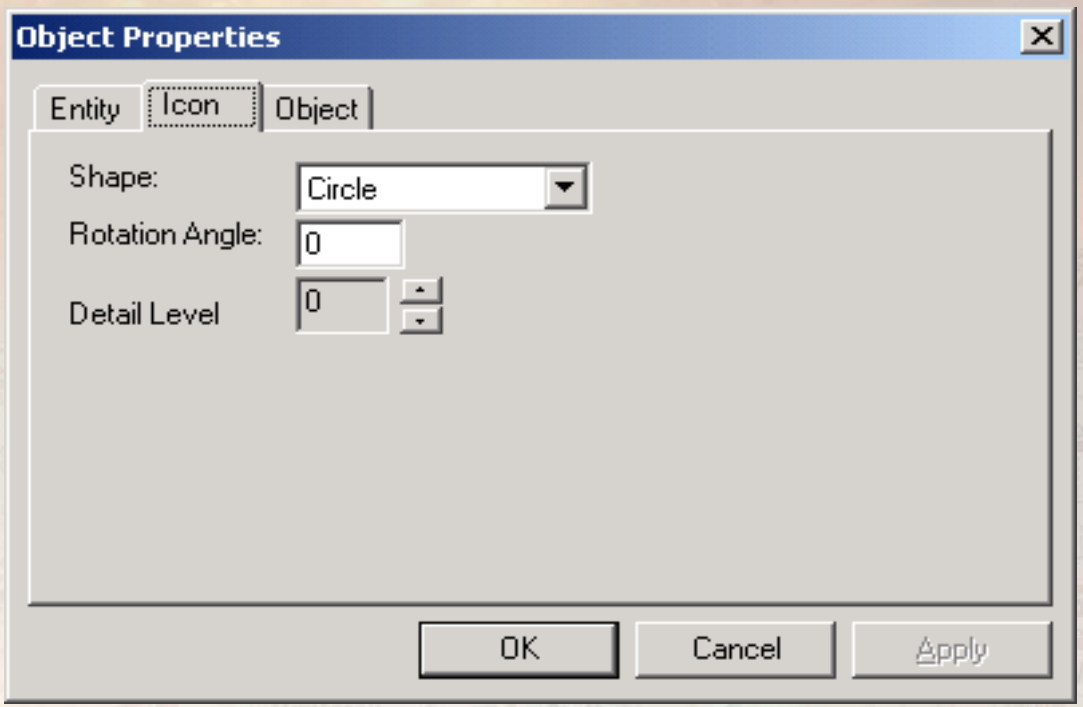
Object Properties Window (cont.)

The Object page is used to specify the size and position of the control within the current diagram



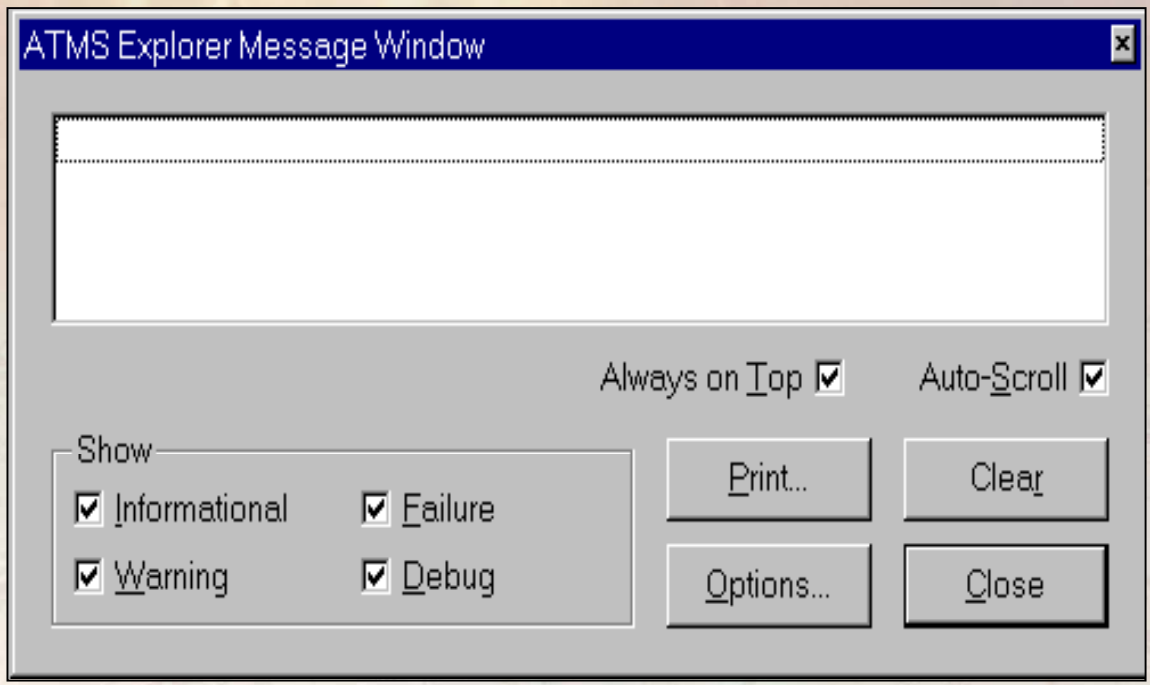
Object Properties Window (cont.)

The properties window will also contain one or more control-specific configuration pages (such as the intersection control's "Icon" page shown below)



Message Window

The Message window is used to display informational, warning, failure, and debug messages generated by the ATMS Explorer application

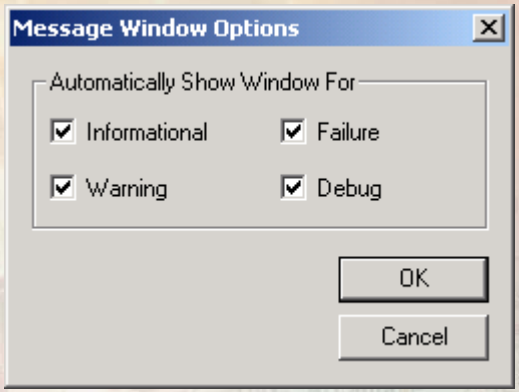


TC Message Window Options

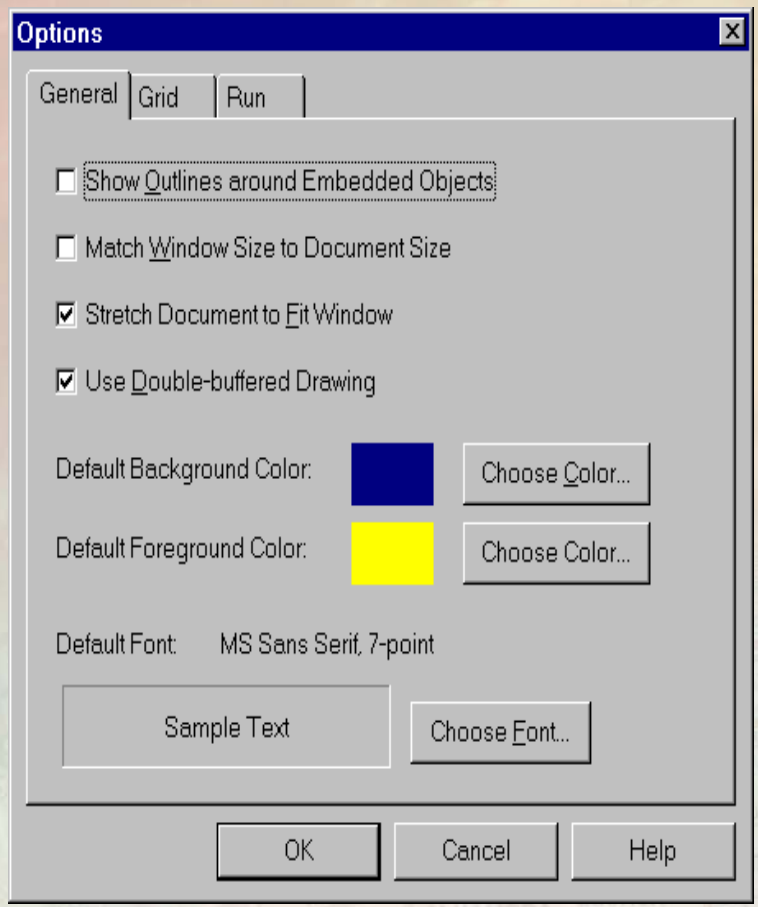
Option	Description
Always on Top	Displays the message window at the front of the screen
Auto-Scroll	Causes the list box to automatically scroll to the bottom of the list whenever a new message is added
Print	Opens a typical Windows Print dialog through which the messages can be printed
Clear	Clears the message list
Close	Closes the window

TC Message Window Options (cont.)

Option	Description
Options	Allows operators to select the types of messages that will cause the message window to automatically pop-up on the screen



Options Window



- The Options window is used to configure the ATMS Explorer window
- The window consists of three (3) tabbed pages:
  - General
  - Grid
  - Run

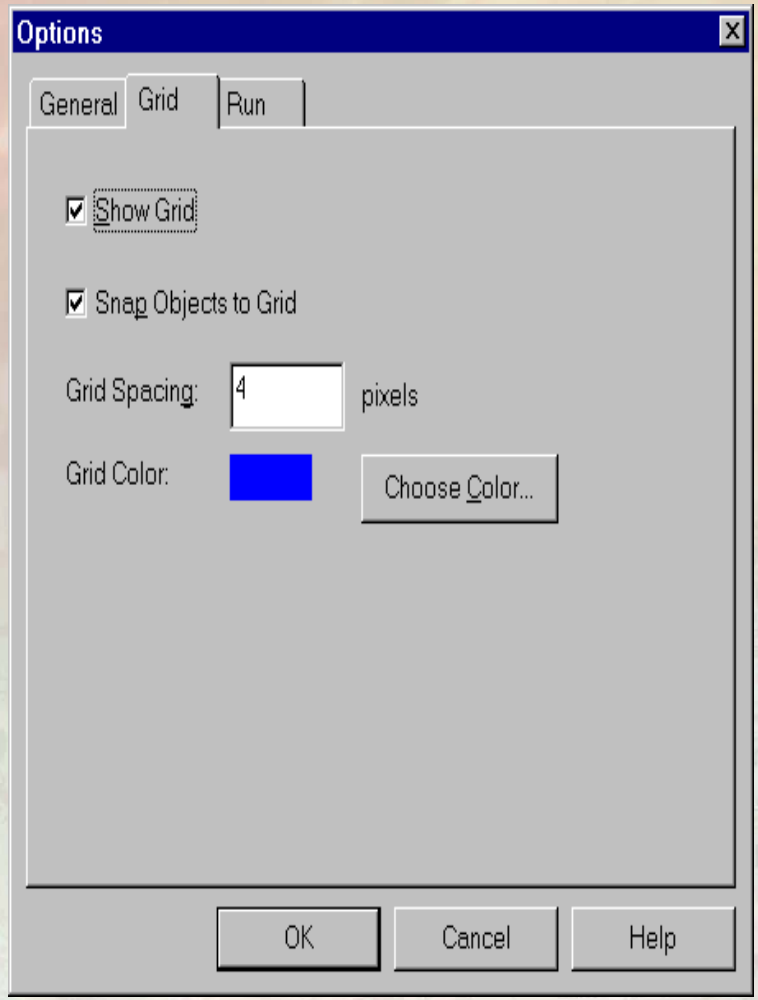
Options Window General Page Options

Option	Description
Show Outlines …	Shows/Hides a bounding box around the objects embedded in the diagram
Match Window Size to Document Size	Resizes the Explorer window to match the size of the selected document
Stretch Document to Fit Window	Resizes a document to fit the current size of the ATMS Explorer window
Use Double-buffered Display	Turns on and off a special drawing function, which prevents the objects from flickering within diagrams As a rule of thumb, the option should be enabled.
Choose Color	Opens a color selection window in which the default application background and foreground colors can be selected

Options Window General Page Options (cont.)

Option	Description
Choose Font	Opens a font selection window in which the application default font type, style, and size can be selected

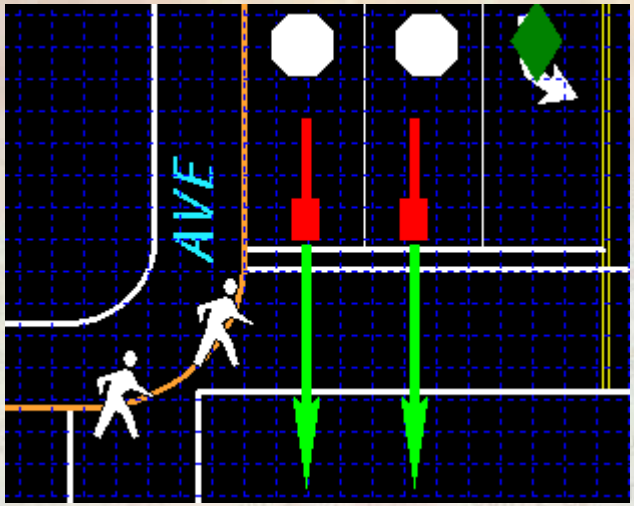
Options Windows Grid Page

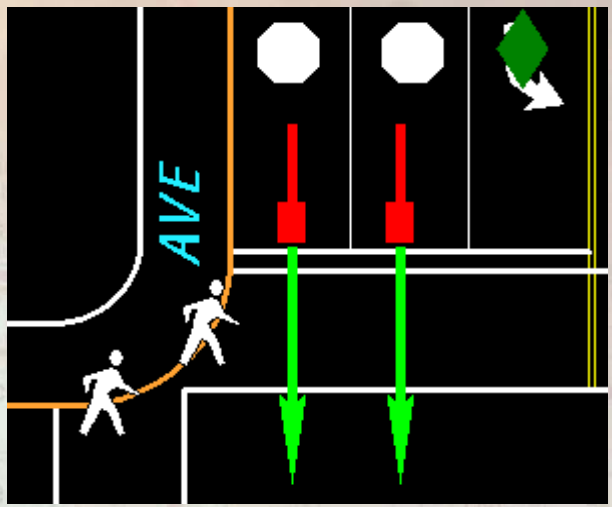


- The Grid page is used to configure the design mode grid tool

Options Windows Grid Page Options

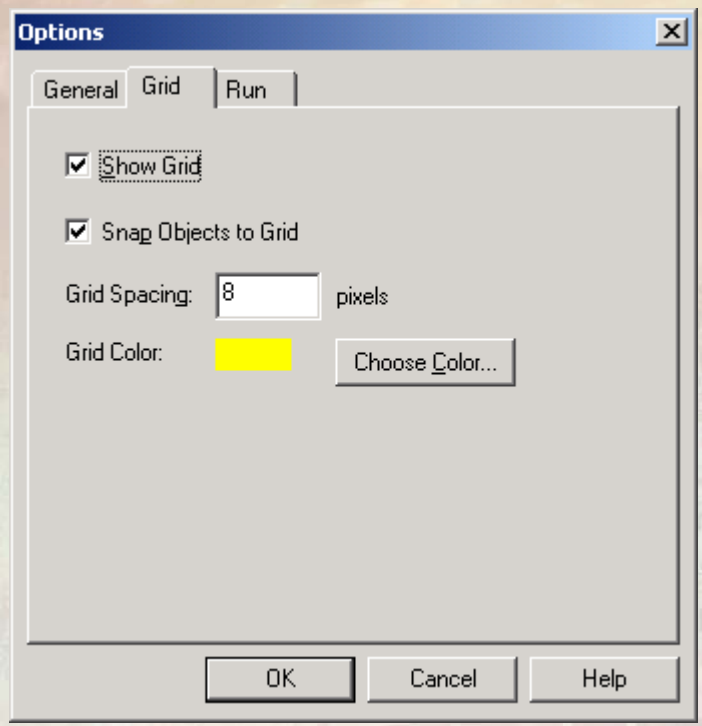
Option	Description
Show Grid	Toggles the grid on or off
Snap Objects to Grid	Option allows Explorer to automatically align embedded controls to grid points

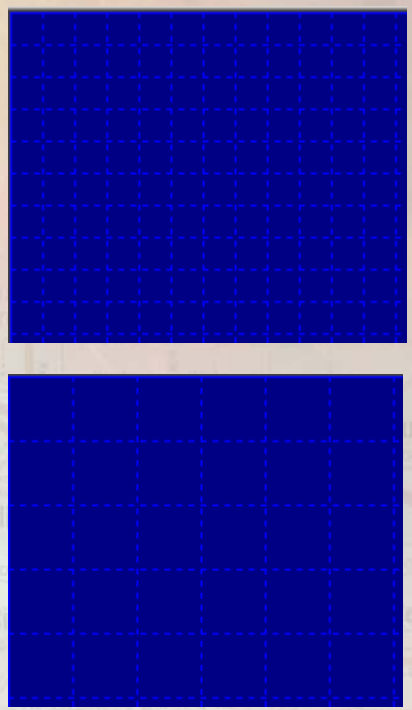




Options Windows Grid Page Options (cont.)

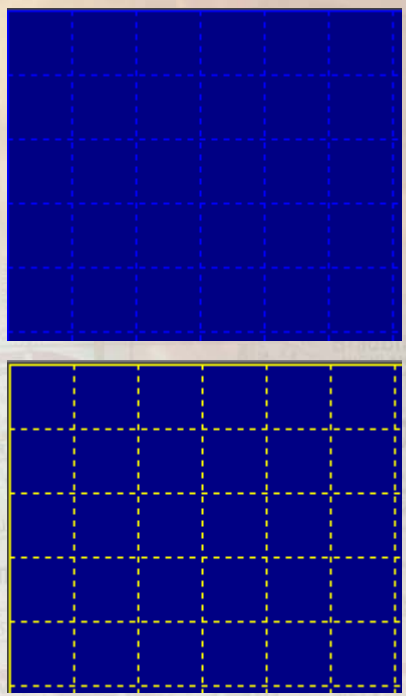
Option	Description
Grid Spacing	Specifies the spacing of the grid in pixels



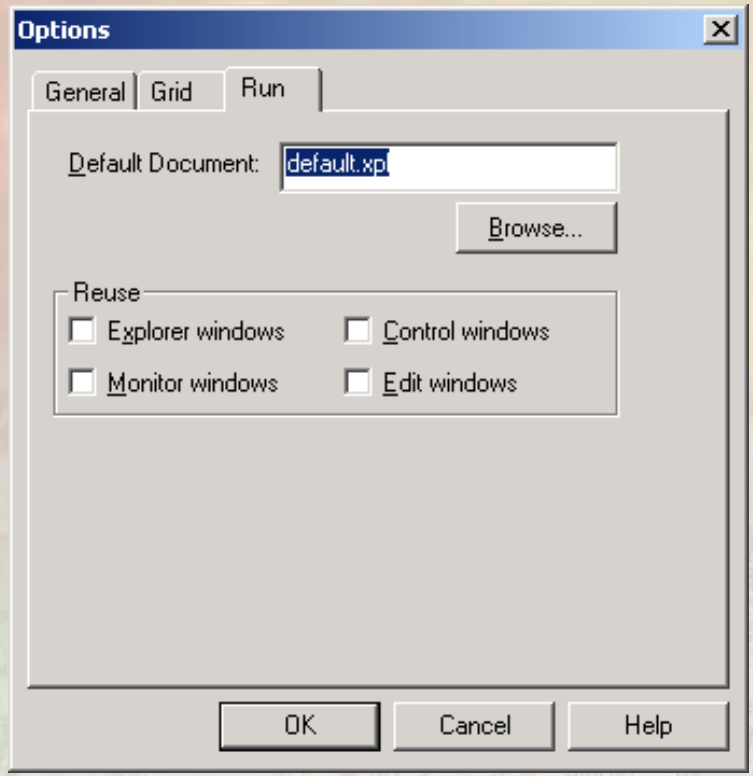


Options Windows Grid Page Options (cont.)

Option	Description
Choose Color	Opens a color selection dialog to allow operators to select the color of the grid lines



Options Window Run Page Options



Option	Description
Run Page	Specifies the default diagram shown when ATMS Explorer first opens
Reuse Panel	Specifies which windows will be opened once and then refilled as new objects are selected

ATMS Explorer Layout Menu Options

Option	Description
Align Left	Aligns the selected objects along the vertical axis by their left edge
Align Vertical	Aligns the selected objects along the vertical axis by their center
Align Right	Aligns the selected objects along the vertical axis by their right edge
Align Top	Aligns the selected objects along the horizontal axis by their top edge
Align Horizontal	Aligns the selected objects along the horizontal axis by their center
Align Bottom	Aligns the selected objects along the horizontal axis by their bottom edge

ATMS Explorer Layout Menu Options (cont.)

Option	Description
Space Evenly Across	If three or more objects are selected, the selected objects are moved so that they are evenly spaced from left to right. The leftmost and rightmost object(s) do not move; only the objects in between move.
Space Evenly Down	If three or more objects are selected, the selected objects are moved so that they are evenly spaced from top to bottom. The top and bottom objects do not move; only the object(s) in between move.
Same Height	Makes all selected objects the same height
Same Width	Makes all selected objects the same width
Same Size	Makes all selected objects the same height and width

ATMS Explorer Layout Menu Options (cont.)

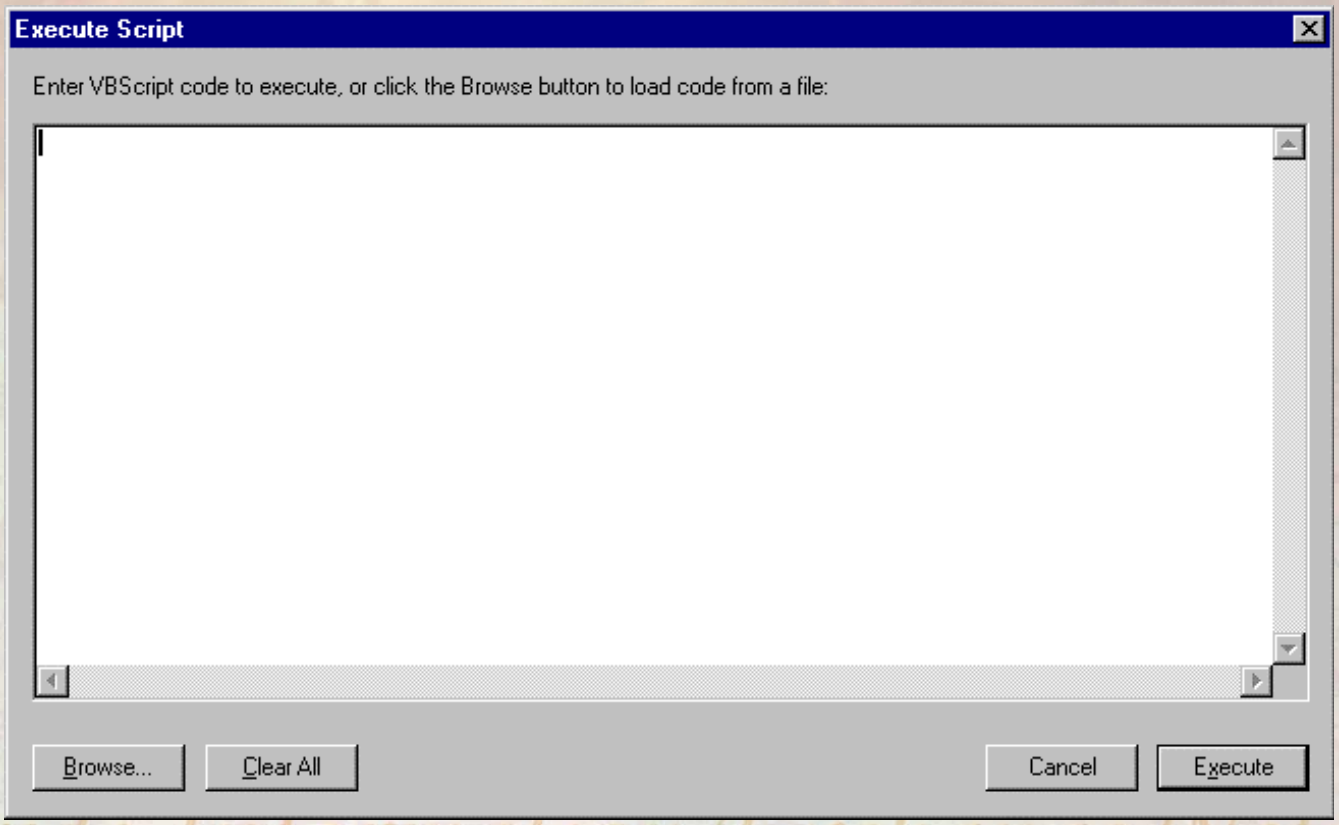
Option	Description
Bring To Front	Moves the selected object to the front of the document
Bring Forward	Moves the selected object forward one layer
Send Backward	Moves the selected object backward one layer
Send to Back	Moves the selected object to the back of the document
Expand to Fill Document	Increases the size of the selected object so that it fills the entire document
Snap to Grid	Turns on and off the object snap-to-grid function of the grid view options

ATMS Explorer Script Menu Option

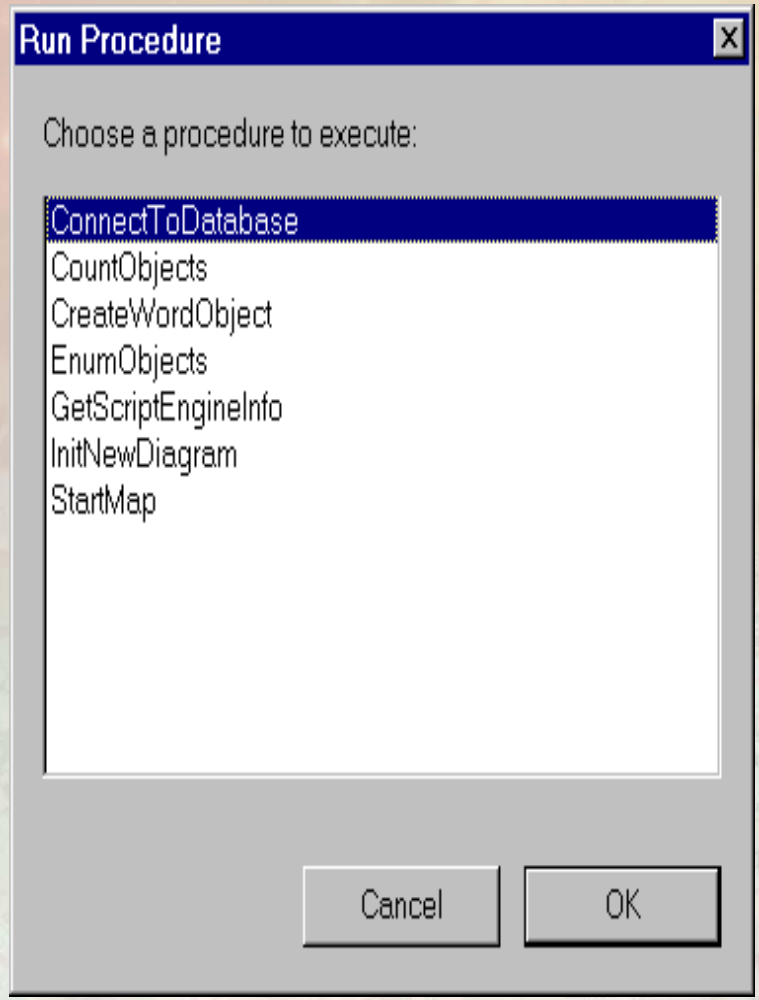
Option	Description
Execute Script	Opens the Execute Script dialog, in which the operator can enter VB Script code to execute
Run Procedure	Opens the Run Procedure dialog, in which the operator can select a procedure to run

Execute Script Window

The Execute Script window allows operators to load, edit, and execute Visual Basic scripts within ATMS Explorer



Run Procedure Window

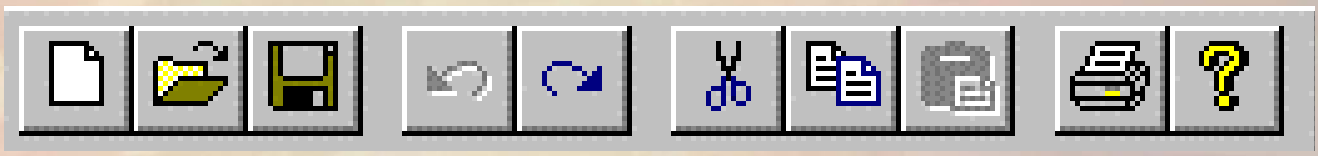


- The Run Procedure window is used to run pre-defined VBScript procedures

ATMS Explorer Help Menu Options

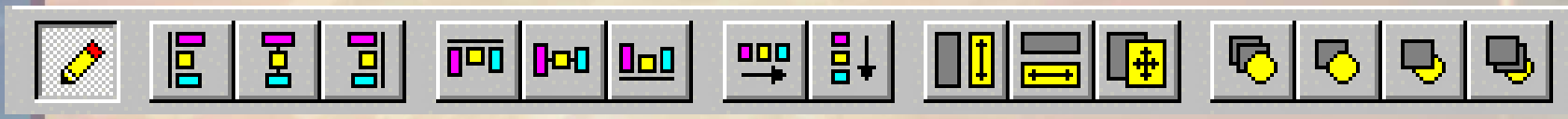
Option	Description
Help Topics	Opens the online help screens for the application
About ATMS Explorer	Invokes the application version/copyright information dialog

ATMS Explorer Main Toolbar



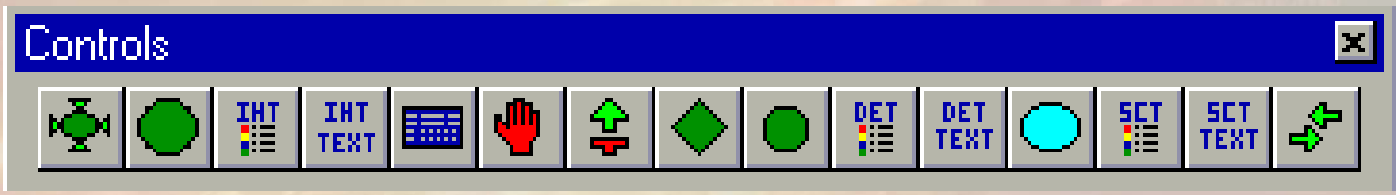
- New
- Open
- Save
- Undo
- Redo
- Cut
- Copy
- Paste
- Print
- About

ATMS Explorer Design Toolbar



- Design Mode
- Align Left
- Align Vertical
- Align Right
- Align Top
- Align Horizontal
- Align Bottom
- Space Evenly Across
- Space Evenly Down
- Same Height
- Same Width
- Same Size
- Bring to Front
- Bring Forward
- Send Backward
- Send to Back

ATMS Explorer Insert Control Toolbar



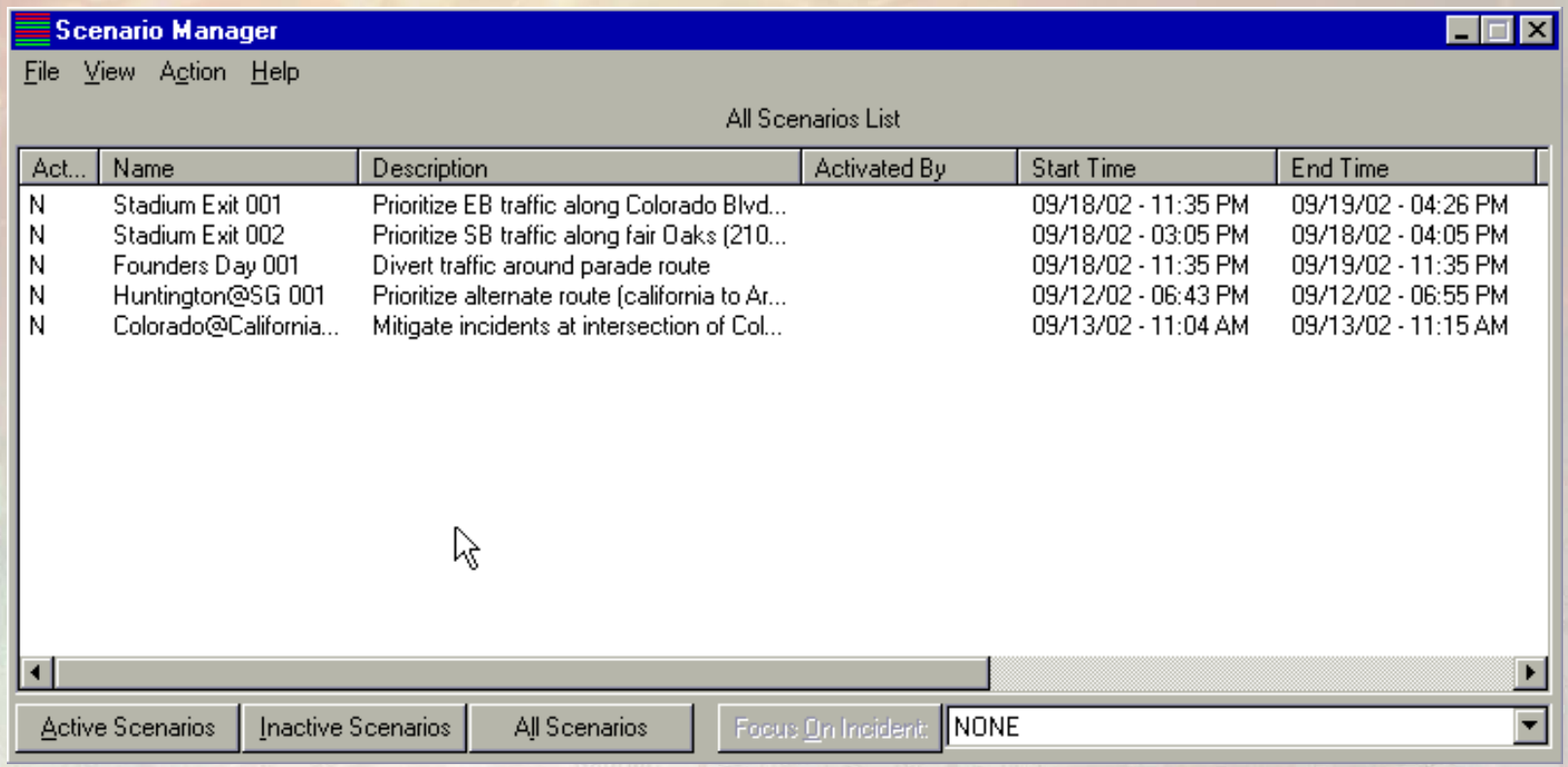
- Intersection w/ Greens
- Intersection
- Intersection Legend
- Intersection Status Text
- Intersection Header
- Pedestrian Indication
- Green Arrow
- Vehicle Call
- Detector
- Detector Legend
- Detector Status Text
- Section
- Section Legend
- Section Text
- ATMS Hyperlink

IEN Scenario Manager

Scenario Manager Overview

- The Scenario Manager application is used to monitor and manage IEN Scenario Plans
- IEN operators are able to respond to traffic congestion conditions using scenario plans designed to facilitate traffic flow through the affected areas of the roadway system

Scenario Manager Screen



PUBLIC WORKS

METRO

TRANSCORE

Scenario Plans

- A scenario plan is a pre-configured set of TCS device actions intended to facilitate traffic flow within a particular area of the roadway network.
- Scenario plans can be used to deal with
  - Chronic congestion at accident-prone intersections.
  - Reoccurring or preplanned "traffic impacting" events.
  - Coordination of cross-jurisdictional incident response.

Scenario Plans (cont.)

- A scenario plan consists of the following elements:
  - A set of TCS device actions
  - An area-of-affect
  - Associated documentation
  - Access privileges

TCS Device Actions

- Each TCS device action includes a TCS device, an action to be performed by the device, and a priority level.
- For the Pilot Project, device actions are limited to intersection and section level control mode and timing plan changes.
- The number of supported devices and commands is expected to grow, as additional types of TCS devices are joined to the IEN.

TCS Device Action Priorities

- Device action priorities determine an order-of-precedence for reconciling multiple, concurrent IEN commands on the same TCS device.
- When a scenario plan is activated, the system will check whether any other actions are currently being performed on the devices involved with the plan. If a conflict is detected, the system will compare the priority levels of the two actions.
- A new action will only be implemented if its priority is the same or higher than the currently implemented action.

Scenario Area-of-Affect

- The scenario area-of-affect is the area of the roadway system that the scenario is intended to affect.
- The area-of-affect is established during scenario configuration by defining a set of boundary geo-coordinates
- The area-of-affect is used to match incidents with scenarios that affect the location of the incident

Associated Documentation

- Scenario plans can be associated with additional documentation, providing detailed configuration, operation, and concept-of-operation information.
- For example, the linked document may consist of a Word file or an ATMS Explorer diagram with icons representing the TCS devices involved in the plan.
- To open the associated documentation, right-click a scenario plan in the list view area and select View Diagram from the scenario popup menu.

Scenario Privileges

- All IEN users have access to the Scenario Manager application and may monitor all scenarios within the corridor.
- Users must hold the EXECUTE privilege for a plan in order to be able to activate or deactivate it.

Scenario Plan Configuration

- Scenario plans are configured by administrators through the IEN System Configuration Manager application
- Detailed scenario configuration information can be found in the following locations:
  - IEN System Administrators Guide
  - IEN System Configuration Manager online help screens.

Scenario List Views

- The Scenario Manager includes the following views of the scenario plan database:

View	Description
Active Scenarios	Displays currently active scenarios
Inactive Scenarios	Displays currently inactive scenarios
All Scenarios	Displays all scenarios
Focus On	Displays inactive scenarios with an area-of-effect that contains the selected incident. Scenarios are sorted based on the distance between the center point of the area-of-affect and the location of the incident.

Scenario List Views (cont.)

- The selected view is indicated above the list area.
- Operators can switch views by clicking the appropriate button along the bottom of browser area or by selecting the desired option from the View Menu.
- By default, the list views are sorted alphabetically by plan name. To resort the list by another field, click the column header of the appropriate field.

Scenario List View Fields

View	Description
Active	Indicates whether or not a scenario is currently active ("Y" = scenario is active, "N" = scenario is inactive).
Name	Scenario Name.
Description	Identifies the purpose or location of the scenario.
Activated By	Identifies the operator who started an active plan.
Start Time	The time and date the scenario was last started.
End Time	The time and date the scenario was last ended.
Incident Id	Identifies the MICE incident with which a scenario plan has been associated or is empty when no association has been made.

Scenario List View Fields (cont.)

View	Description
keyword	A quick-reference label indicating the purpose and/or scope of each scenario.
Duration	The number of minutes the plan will run before being automatically deactivated by the system.
Linked Doc	Identifies the document with which a scenario is associated
Corridor	Identifies the IEN corridor in which the scenario plan or TCS device resides. A corridor (or region) is a geographical or logical grouping of TMCs.
Site	Identifies the IEN site in which the scenario plan or TCS device resides. A site is a particular local city or Traffic Management Agency within the IEN. A site may or may not have one or more Traffic Control Systems (TCSs).

Scenario List View Fields (cont.)

View	Description
System	Identifies the TCS system in which the scenario plan or device resides. Each system manages a set of TCS devices connected to the IEN.
ID	Together with the Corridor, Site, and System fields, the ID field forms the unique identifier for the scenario plan or TCS device within the IEN.

Scenario Manager Menus

- The Scenario Manager provides the following four (4) menus
  - File Menu
  - View Menu
  - Action Menu
  - Help Menu

Scenario Manager File Menu Options

Option	Description
Exit	Closes the application

Scenario Manager View Menu Options

Option	Description
Active Scenarios	Switches to the active scenario list view
Inactive Scenarios	Switches to the inactive scenario list view
All Scenarios	Switches to the all scenario list view
View Incident	Opens the MICE application to display the details of an incident linked to the selected scenario plan
View Diagram	Opens the document that has been linked to the selected scenario
Show Details	Opens a Scenario Detail View for the selected scenario plan

Scenario Manager Action Menu Options

Option	Description
Reactivate All Actions	Causes the system to reissue enabled device action commands for currently active scenario plans.

Scenario Manager Help Menu Options

Option	Description
Help Topics	Opens the online help screens for the application
About Scenario Manager	Displays application copyright and version information

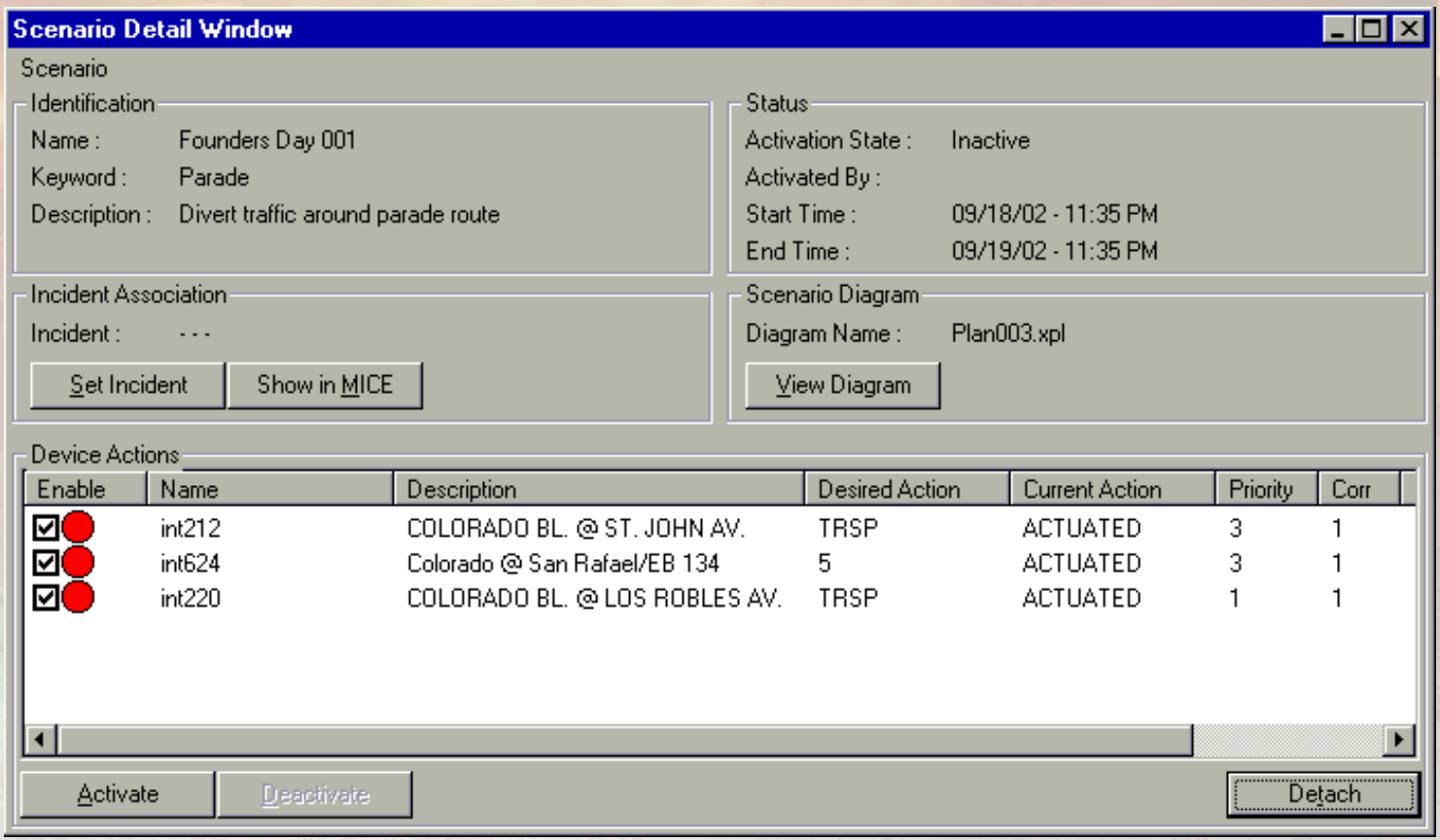
Scenario Manager Pop-up Menu Options

Option	Description
Activate	Starts the selected scenario plan
Deactivate	Ends the selected scenario plan
View Incident	Opens the MICE application to display the details of an incident linked to the selected scenario plan
Set Incident	Launches the Select Incident dialog to allow operators to associate the selected scenario with an active incident
View Diagram	Opens the document that has been linked to the selected scenario
Show Details	Opens a Scenario Detail View for the selected scenario plan

Scenario Detail View

- The scenario detail view allows operators to monitor configuration and status information for a single plan.
- The view identifies the devices involved in the plan, the actions they will perform, and the priority level of those actions.
- To open the view, double-click a scenario within any of the list views or select **View Details** from either the scenario pop-up or view menus.

Scenario Detail View Screen



Scenario Detail View Identification Fields

Field	Description
Name	The name of the scenario plan
Keyword	A quick-reference label indicating the purpose and/or scope of the scenario
Description	Identifies the purpose or location of the scenario

Scenario Detail View Status Fields

Field	Description
Activation State	Indicates whether the scenario is currently active or inactive.
Activated By	The name of the last user who activated the scenario.
Start Time	The date and time that the scenario was last started.
End Time	Displays either the date and time that an inactive scenario was last stopped or the estimated end time for an active scenario. The estimated end time is calculated from the duration specified during scenario activation.

Scenario Detail View Incident and Diagram Fields

Field	Description
Incident	Identifies the MICE incident with which the scenario plan has been associated or is empty when no association has been made.
Diagram Name	Identifies the document with which the scenario is associated or is empty when no association has been made.

Scenario Detail View Device Action Fields

Field	Description
Enable Checkbox	Used to enable/disable individual device actions prior to activating the plan. Once the plan is active the field is locked and may not be modified.
Status Indication	A red circle indicates that the TCS device is not performing the desired action. A green circle indicates that the TCS device is performing the desired action.
Name	Name of the TCS device involved in the action
Description	Description of the TCS device
Desired Action	Identifies the action to be performed by a TCS device as part of the scenario plan.

Scenario Detail View Device Action Fields (cont.)

Field	Description
Current Action	Displays the current action being performed by a TCS device. Depending on which type of action is specified in the Desired Action field, this field will show the operational mode or timing plan of the corresponding TCS device. Operators can compare the *Desired Action* and *Current Action fields* to determine the status of a device action.
Priority	Identifies the priority associated with each device action.
Corridor, Site, System, ID	Identifies the TCS device within the IEN.

Scenario Detail View Options

Option	Description
Set Incident	Launches the Select Incident dialog to allow operators to associate the selected scenario with an active incident

Scenario Detail View Options (cont.)

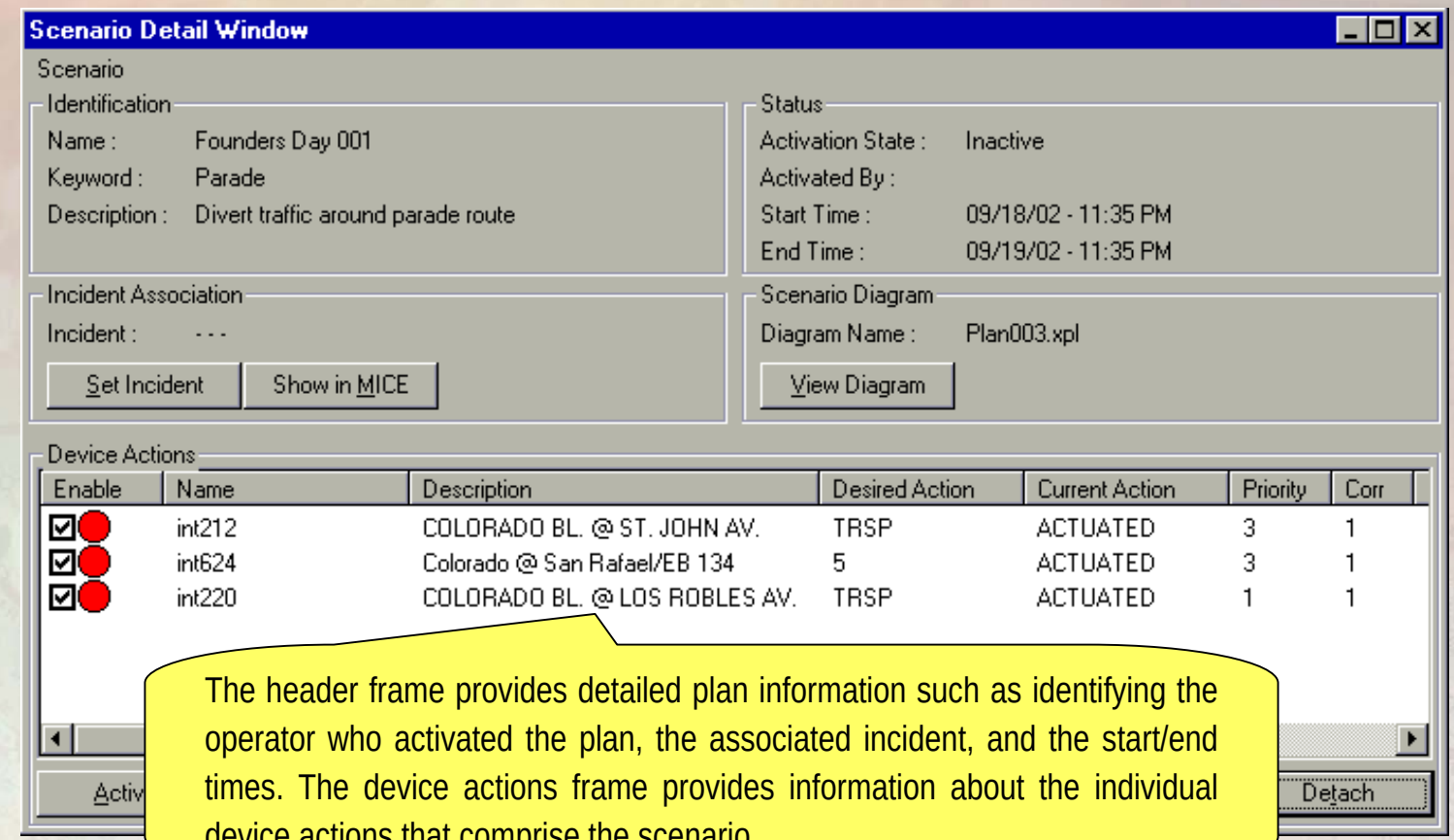
Option	Description
Set Incident	Launches the Select Incident dialog to allow operators to associate the selected scenario with an active incident
Show in MICE	Displays incident information for the incident associated with the selected scenario.
View Diagram	Opens the document that has been linked to the selected scenario
Activate	Starts the selected scenario plan
Deactivate	Ends the selected scenario plan
Detach	Disassociates the current detail view from the scenario manager application allowing operators to open another detail view and simultaneously monitor multiple scenario plans.

Scenario Manager Operations

- Through the Scenario Manager, operators can perform the following tasks:
  - Monitor scenario plan status
  - Activate available scenario plans
  - Manually deactivate running scenario plans
  - Associate scenarios with MICE incidents

Monitoring Active Scenarios

- Scenario plan status information is available in the scenario detail view.



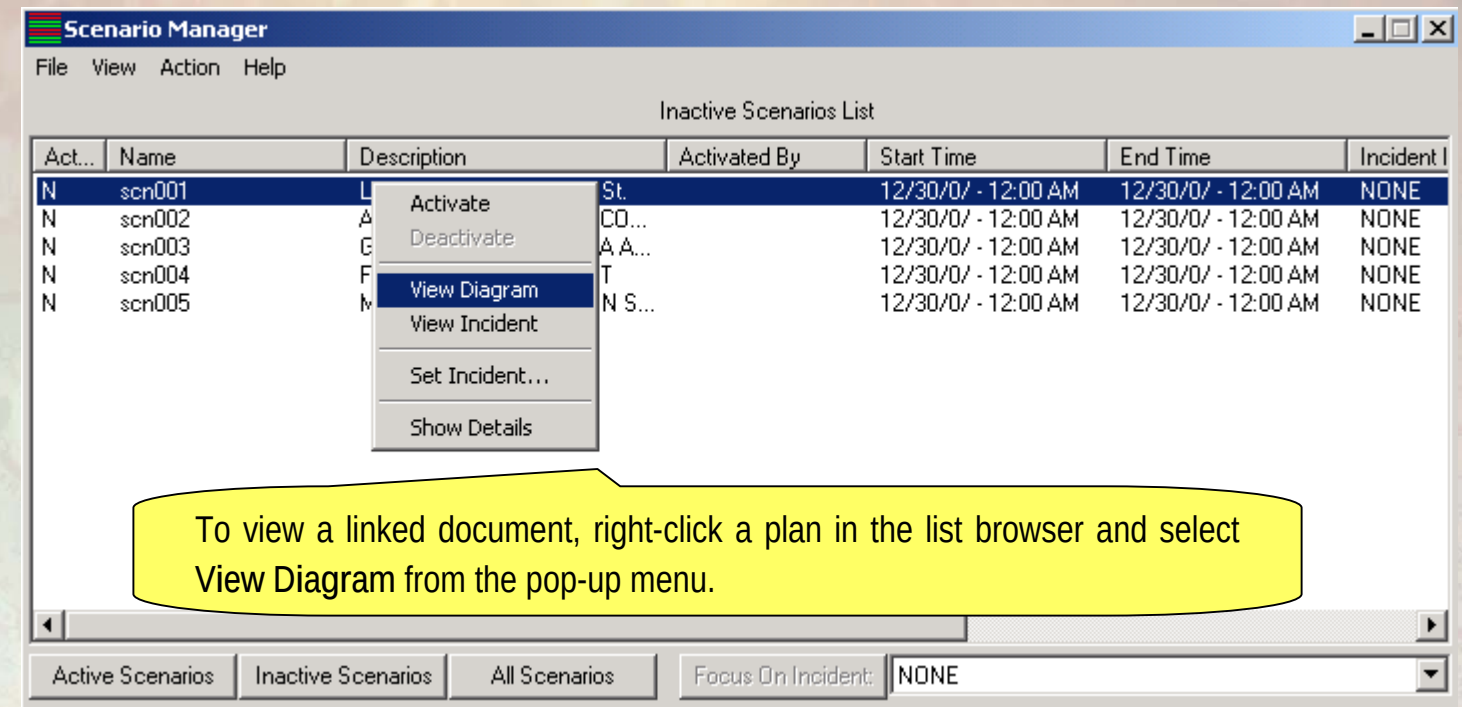
The header frame provides detailed plan information such as identifying the operator who activated the plan, the associated incident, and the start/end times. The device actions frame provides information about the individual device actions that comprise the scenario.

Monitoring Active Scenarios (cont.)

- A status indicator is displayed in the *Enable column* of each listed device action.
  -  A *Green* icon indicates that the current operational state of the TCS device matches the desired state as specified by the device action command.
  -  A *Red* icon indicates that the current operational state of the TCS device does not match the intended state as specified by the device action command.

Monitoring Active Scenarios (cont.)

- Additional status information may be provided through the document linked to the scenario (if one has been made available).

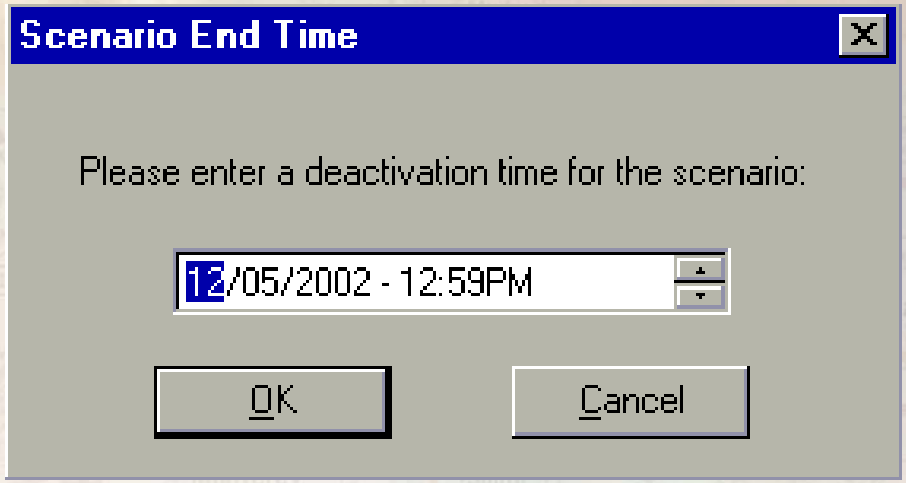


Activating Scenarios

- Scenario plan activation may be initiated from either a list view or scenario detail view
- From a list view, right-click the desired plan and select **Activate** from the scenario pop-up menu.
- From a scenario detail view, enable/disable device actions as appropriate and click the **Activate** button.
- A confirmation dialog will be displayed to verify the operator request. Select **Yes** to proceed with plan activation or **No** to cancel the request.

Activating Scenarios (cont.)

- The operator will then be required to specify a deactivation date/time for the scenario.
- Once the desired deactivation date/time has been entered, select **OK** to activate the plan or **Cancel** to drop the activation request.



Activating Scenarios (cont.)

- Upon selecting OK, the system will attempt to verify that the requesting operator has the authority to activate the scenario.
- If the operator does not hold the requisite privileges, the system will display a message to the operator and drop the request. Otherwise the system will proceed and activate the scenario plan, performing the enabled device actions.

Enabling/Disabling Device Actions

- Prior to activation, operators may customize a scenario plan by enabling or disabling any of the individual device actions that make up the plan.
- In this way preplanned scenarios may be fine-tuned at run time to better meet actual roadway conditions.
- Device actions may not be enabled or disabled while the scenario plan is active.

Enabling/Disabling Device Actions (cont.)

- Device actions are enabled/disabled within the Scenario Detail View.
- To change the enabled/disabled state of a device action, left-click the corresponding enable checkbox:
  - A selected checkbox indicates that the device action is enabled and will be performed upon activation of the scenario.
  - An empty checkbox indicates that the device action is disabled and will not be performed upon activation of the scenario.

Deactivating Scenarios

- Scenario plans can be automatically or manually deactivated.
  - The system will automatically deactivate a scenario plan upon reaching the deactivation date/time specified by the activating operator.
  - Scenario plans can be manually deactivated at any time at the request of an authorized operator.

Deactivating Scenarios (cont.)

- A manual deactivation may be initiated from either a list view or scenario detail view.
  - From a list view, right-click the desired plan and select **Deactivate** from the scenario pop-up menu.
  - From the scenario detail view, click the **Deactivate** button.
- A confirmation dialog will be displayed to verify the operator request. Select **Yes** to deactivate the plan or **No** to cancel the request.

Deactivating Scenarios (cont.)

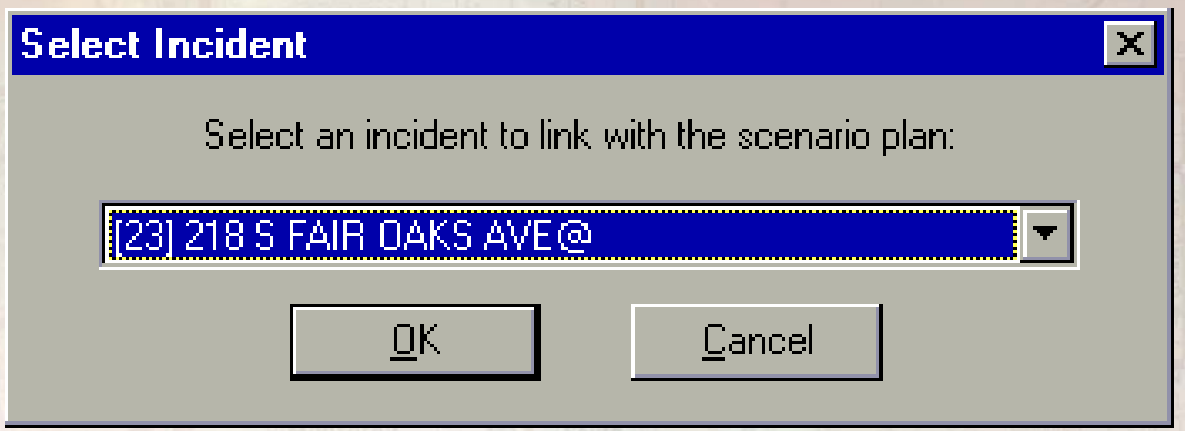
- Upon selecting Yes, the system will attempt to verify that the requesting operator has the authority to deactivate the scenario.
- If the operator does not hold the requisite privileges, the system will display a message to the operator and drop the request. Otherwise the system will proceed and deactivate the scenario plan, releasing control of the devices that make up the plan.
- Released devices return to operating under local TCS control.

Associating Scenarios with Incidents

- The Scenario Manager allows operators to link an incident with the scenario plan(s) activated to mitigate the effects of the incident.
- Once the association is established operators are able to easily navigate back and forth between MICE and Scenario Manager views in order to track the incident response status.
- To associate an active scenario with an incident, select **Set Incident** from the scenario detail view or the scenario pop-up menu.

Associating Scenarios with Incidents (cont.)

- Select the incident to be associated with the selected scenario.
- Click **OK** to commit association to the database or choose **Cancel** to quit the dialog.
- Selecting the value "None" will drop an existing incident association



Associating Scenarios with Incidents (cont.)

- Multiple scenario plans may be associated with the same incident, however each scenario can only be associated with a single incident.
- The associated incident is identified in the list views.
- The scenario/incident association will be maintained until one of the following occurs:
  - An operator manually drops or changes the association.
  - The incident is closed.
  - The scenario is deactivated.

IEN Operators Training Day 2 Wrap Up

Questions &
Answers