

CUBIC™

 **Trafficware**

*Operations Manual*

*For*

**ATMS™**

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## Advanced Traffic Management System (ATMS)

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## 2 ATMS Overview

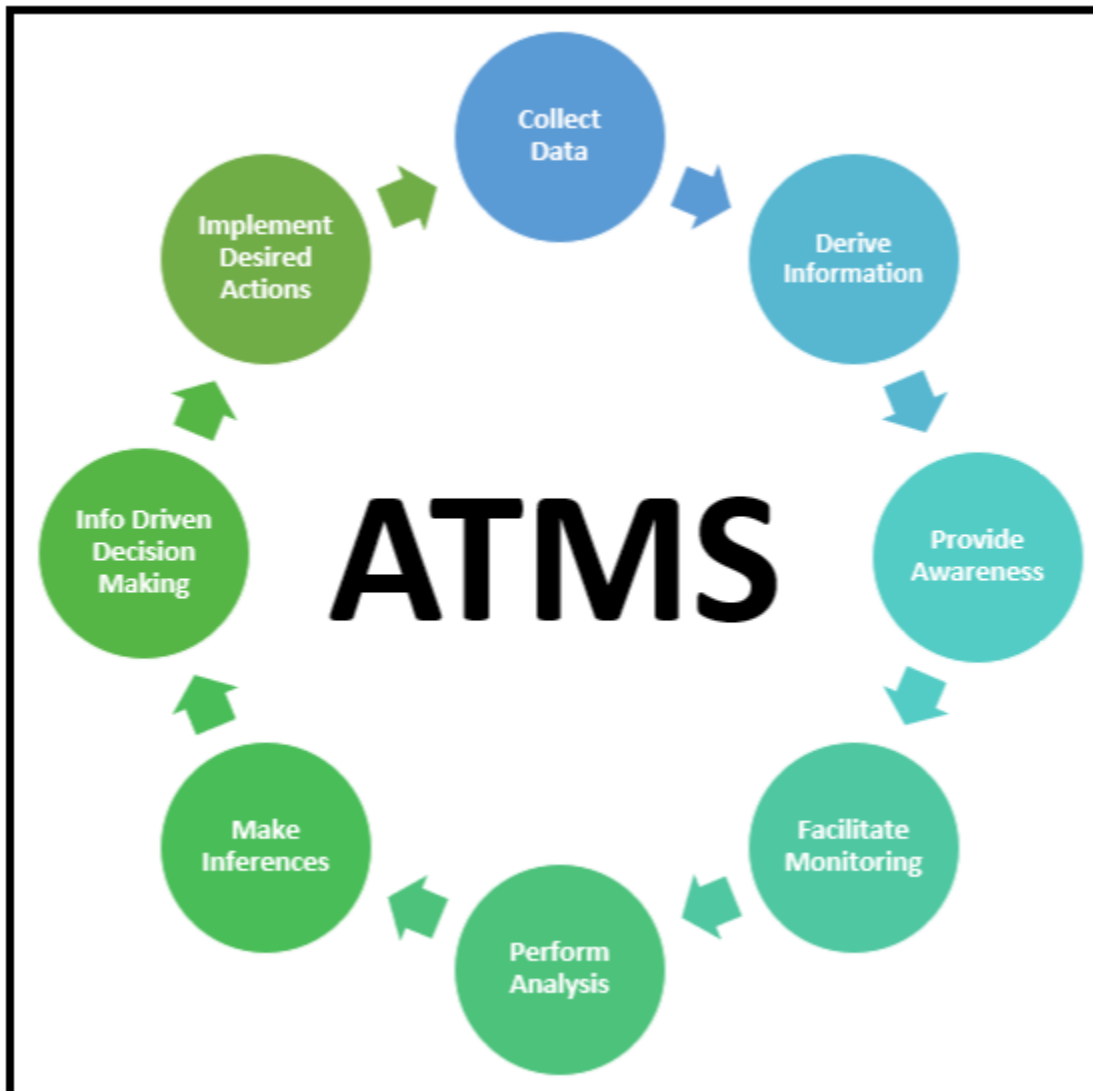
**ATMS** is an Advanced Traffic Management System capable of monitoring and controlling thousands of intersection controllers using state-of-the-art architectures like TCP/IP and NTCIP.

**ATMS** provides a scalable hardware and software solution for agencies charged with managing complex transportation systems and traffic signals. Using simple to follow screens and an intuitive functionality, **ATMS** offers complete traffic and data management including real-time field reporting, integration with Microsoft .NET Framework 4.x, Dev Express™, Crystal Reports™, XML data exchange, GIS interface and hundreds of other features.

**ATMS** brings together all of your traffic network data into a single repository for a completely integrated, real-time 360-degree view of your traffic operations. Featuring high-performance parallel database technology, a full suite of data access and management tools, and robust data mining capabilities, **ATMS** delivers powerful performance.

**ATMS** supports multiple users distributed over local and wide area networks and remote access users over dial-up, VPN and thin-client connections to the LAN.

The diagram below summarizes the ATMS processes and implementation philosophy.



## ATMS Components and Optional Modules

**ATMS** is a scalable software solution that supports a range of user needs including:

- School Zone Flasher Control
- Road Temperature Sensor Monitoring
- UPS / BBS Integration (Optional Module)
- Real-Time Split Monitor and Time-Space Reporting
- Incident Detection and Triggers
- Integrated Traficon Video Detection Operation
- Cubic / GRIDSMART Video Detection Integration
- Real-Time Opticom Model 752/754 Log Retrieval
- Cubic / Trafficware POD Detection Integration
- Cubic | Trafficware Synchro 7/8/9/10/11/12 Suite Integration
- Transport Layer Security (TLS 1.2) support
- SCP Protocol support for ATC controllers with 6.27 Engine boards or later
- Purdue Report Interface (Optional Module)
- Cubic | Trafficware Parking Interface (Optional Module)
- VIMOC Parking Interface (Optional Module)
- Connected Vehicle Interface (Optional Module)
- TidalWave (Optional Module)
- Wavetronix Radar Counter Integration (Optional Module)
- Light Rail Control Systems (Optional Module)
- Transit Priority Systems (Optional Module)
- CMS, VMS Signs (Optional Module)
- CCTV Surveillance (Optional Module)

- Trafficast Bluetoad Interface (Optional Module)
- HOV Lane Control (Optional Module)
- Center to Center (C2C) integration (Optional Module)
- Reversible Lane Control Signals (Optional Module)
- Centralized Traffic Responsive Operation (Optional Module)
- 2.0 Generation Traffic Responsive and Local Adaptive Control (Optional Module)
- Synchro Green Adaptive Control (Optional Module)
- High Resolution Signal Performance Measures (High-Res) (Optional Module) via :
  - Web interface (Optional Module) or
  - Cloud-based technology hosted by Cubic | Trafficware
- Center to Center (C2C) Traffic Management Data Dictionary (TMDD) (Optional Module)

**ATMS is constantly be enhanced and upgraded. All screens displayed in this manual's screen may not reflect the latest screen views but will accurately display the purpose described.**

**To keep up with the various enhancements and upgrades, software maintenance agreements are available. Contact your Trafficware representative for further details.**

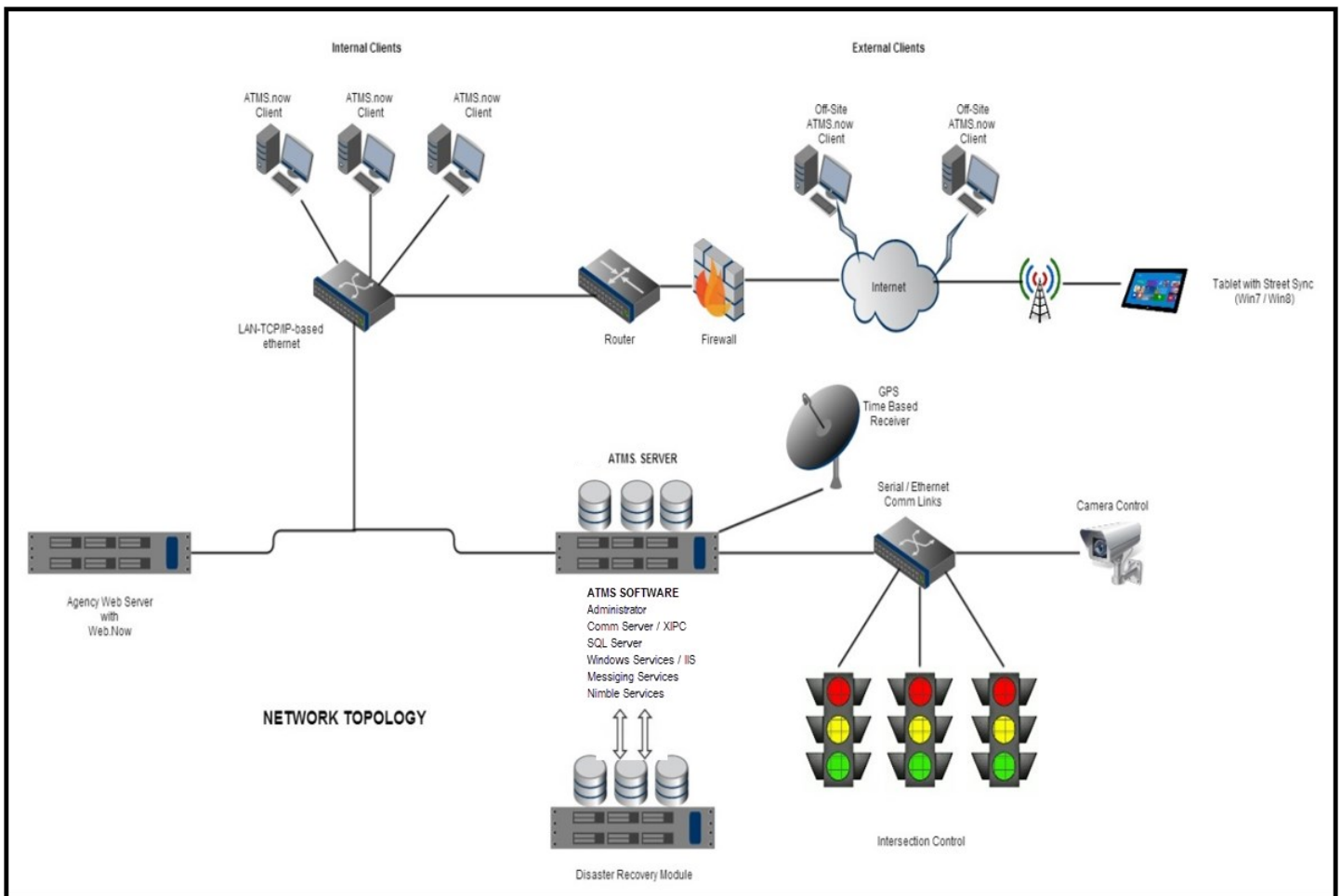
## 2.1 System Architecture

**ATMS** is built using standard off-the shelf products instead of propriety software and products. In this way, agencies can utilize and leverage existing, familiar and easy to use interfaces. In particular, Microsoft SQL database, Microsoft .NET Framework, Microsoft IIS, XIPC inter-process Communications, ESRI GIS, Bing Maps, Google Maps and Crystal Reports.

**ATMS** is a distributed multi-user client-server application built on TCP/IP, the foundation of the Internet. **ATMS** communicates with field devices using RS-232 (serial) or TCP/IP (Ethernet) protocols.

System communication may be point-to-point from the central server or distributed using on-street masters embedded in TS2 and 2070-based controllers. In addition, central based masters can support dynamic group assignment by time-of-day over multiple communication channels.

The **ATMS** system communication can simultaneously utilize a hybrid of communication channels including fiber, Cellular, wireless radio, twisted pair, Ethernet, dial-up, etc. **ATMS** supports an unlimited number of users (clients) interfaced with the system across a LAN (Local Area Network) or across the Internet as shown below.



**ATMS** consists of the following software components on the server that should be run in the numbered order shown below:



or



The ATMS service icon will run software as a service and run the components below in the proper order.

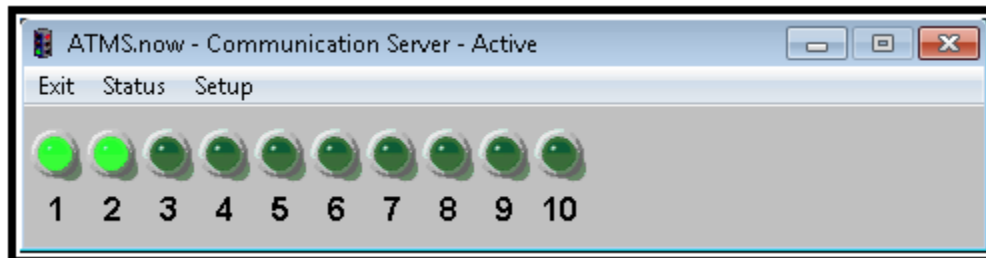
**NOTE: The ATMS Signal Service and the ATMS Proxy will be run depending on the agency installation needs. See the sections below for more information.**

### 2.1.1 IIS Reset

Microsoft’s Internet Information Services (IIS) for Windows Server is a flexible, secure and manageable Web server for hosting anything on the Web. ATMS uses IIS for its web interface. Prior to starting ATMS the user should reset the services via the IIS icon as shown above.

### 2.1.2 Communications Server

The *Communications Server*, or “*Comm Server*”, provides access to all field controllers. The *Comm Server* receives communication requests from the *Administrator* and *Client* and retrieves the requested data from the field. The *Comm Server* is capable of taking mixed communication methods and speeds (forms of serial and IP), and sorting them by “Drops”. The different types of data flow seamlessly into the user interface (Client) without being obvious to the user. **ATMS** offers up to 200 definable “Drops” for your system (up to 800 with *Advance Communication Module*). By planning out the Communications Server to have each drop service the **fewest** number of controllers, the agency can optimize your system operations and status returns of the field controllers.



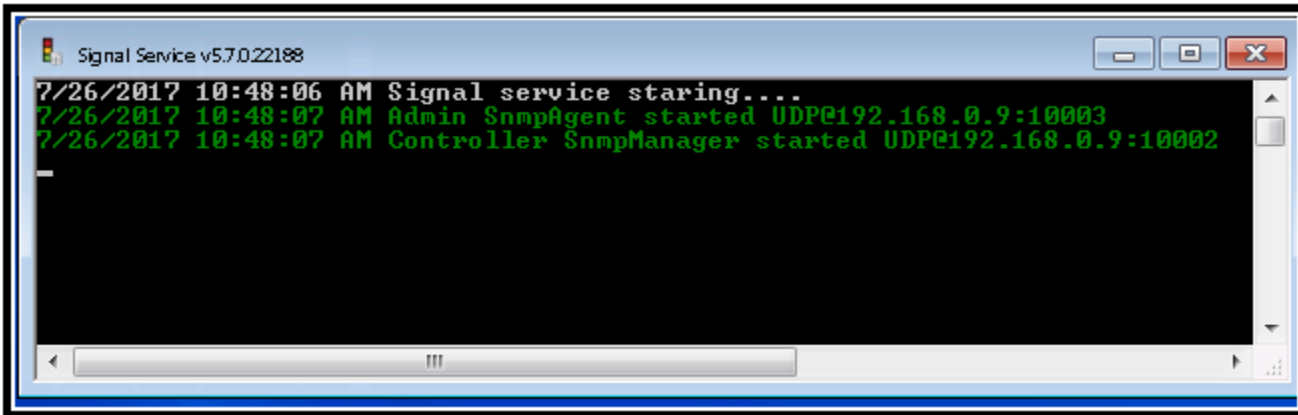
### 2.1.3 Administrator

The *Administrator* is the system component that replies to requests from multiple (multi-user) *Clients* as well as handle programmed system tasks from the “Scheduler” (described in Chapter 6). If the data necessary to respond to the request is already available, then a report is immediately generated and returned to the client. If the requested data is not available, then the *Administrator* forwards the request to the *Communications Server*, which gathers the requested data from the field and returns it to the *Client*.

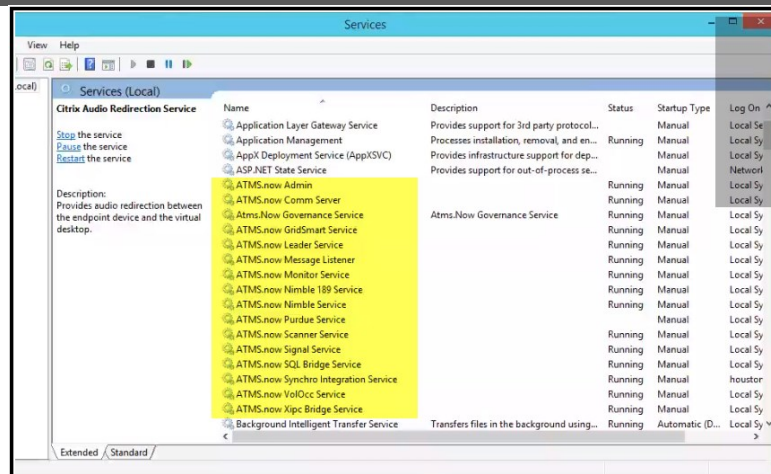


## 2.1.4 Signal Service

The *Signal Service* has been added for use with V80.x controllers to efficiently transfer databases to and from the controllers in the field. V80.x controllers have much more data parameters than traditional controllers (approximately four times larger) that use a caching technique within the controller and because of this ATMS utilizes this service to handle the data transfers.



## 2.1.5 Other Services



Below is a partial list of other services that are started and used by ATMS. These services will run in the background to ensure that all facets of ATMS are working and to monitor and resolve issues with the operation of ATMS as needed.

### ➤ ATMS VOL/OCC Service

- This service is tasked with retrieving the volume and occupancy data from controllers where data is stored on a SD card. The service uses FTP or SCP protocol depending on the controller hardware platform.

### ➤ ATMS Health Monitor Service

- The role of the Health Monitor Service is multifaceted. The service is used to:
  - Monitor if the components of ATMS are operating correctly or experiencing malfunctions.
  - Update the component status indication in 4 icons (bulbs) located on the lower right corner of the ATMS client application.



- It can be set up to automatically restart the component that experiences a malfunction.
- It can send an email to users about ATMS component status changes (“Sick” - malfunction or “Healthy” -working properly)
- Supports SNMP Traps for use with external tools. These tools can be used to monitor the status of ATMS components.

### ➤ SYNCHRO Integration Service

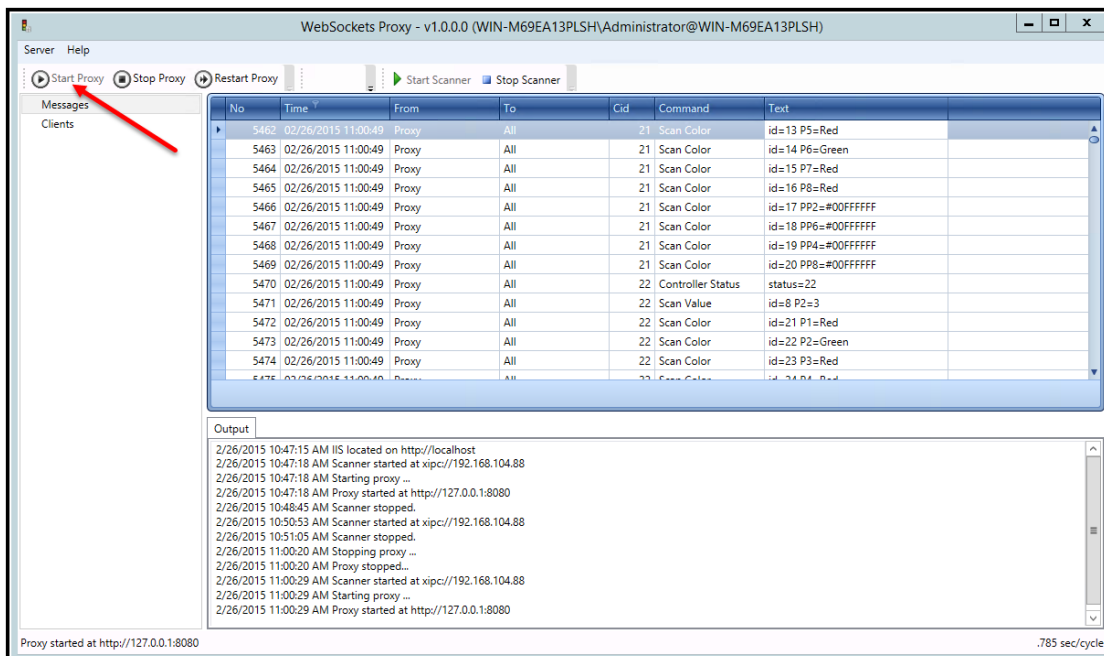
- Used to exchange data between ATMS and Synchro users when enhanced ATMS-Synchro integration is used. This service is responsible for creating the Exchange Folders, transferring data, handling notifications and other actions needed for the enhanced ATMS-Synchro integration to operate successfully.

### ➤ ATMS Scanner Service

- This service is used to collect controller data for agencies using the Connected Vehicle module, TidalWave and the C2C TMDD module. In addition, for large ATMS deployments with many intersections, the scanner service can be used to communicate to each intersection to get status information.

## 2.1.6 Proxy Server

The *Proxy Server* is required for any browser-based application that interfaces with ATMS, such as Google Maps. This program acts as an intermediary between ATMS communications platform and a browser-based application. Its main purpose is to retrieve Real-time data from field devices and report it to the browser application. As browser applications become available, the Proxy Server will funnel data between ATMS and the browser application. Once the Proxy Server is run, the user must hit the **Start Proxy** Icon to begin the communications between the browsers-based application and ATMS.



## 2.1.7 ATMS Configurator

Cubic | Trafficware has provided a user interface with the SQL server's configuration Database (dbo.config). The configurator only resides on the server and is used by the ATMS administrator to configure certain aspects of ATMS like the list of defined controllers that the agency uses or the one-time conversion of the GIS maps to Bing Maps. Caution should be used when running the configurator, which is typically done on installation. Future Versions of ATMS will allow other configuration parameters to be updated/modified.

ATMS Now Configuration Manager @localhost

File Action View Help

Save Calibrate Convert

General  
SQL Server  
Activation  
Comm Server  
Admin Server  
Proxy Server  
Mail  
Map  
  Calibrate BingMaps  
  Convert GIS Coordinates  
  Convert Scan Elements  
  BingMap  
  GoogleMaps  
ATMS  
  Virtual Priority  
  Controller  
  Master  
  Sound  
Web  
Xipc  
Purdue Logs  
Parking  
Synchro Green  
Controller Types Enable

City Name: Sugar Land

State Plane Zone: [Dropdown]

Integration #marks: 4

Default Location:

Latitude: [Text Box]

Longitude: [Text Box]

Altitude: [Text Box]

Ready

EnableCtrlType

ID	Name	Enabled
148	10.x CB 170 RS232	<input checked="" type="checkbox"/>
183	2070 LCS Ethernet New	<input checked="" type="checkbox"/>
146	50.x TS2 RS232	<input checked="" type="checkbox"/>
155	61.x TS2 RS232	<input checked="" type="checkbox"/>
115	900 Houston Secondary RS 232	<input checked="" type="checkbox"/>
166	980 TS2 Sec. 50.x Ethernet	<input checked="" type="checkbox"/>
160	980 TS2 Sec. 61.x Ethernet	<input checked="" type="checkbox"/>
144	980 TS2 Secondary 41.x	<input checked="" type="checkbox"/>
142	981 TS2 Master 41.x	<input checked="" type="checkbox"/>
163	Adaptive Master 61.x	<input checked="" type="checkbox"/>
181	ATMS Central TR	<input checked="" type="checkbox"/>
162	ATMS TR Master 61.x-2070	<input checked="" type="checkbox"/>
130	Chronomax	<input checked="" type="checkbox"/>
173	Chronomax Ethernet	<input checked="" type="checkbox"/>
150	NTCIP 50.x TS2 RS232	<input checked="" type="checkbox"/>
159	NTCIP 61.x TS2 Ethernet	<input checked="" type="checkbox"/>
157	NTCIP 61.x TS2 RS232	<input checked="" type="checkbox"/>
169	NTCIP 65.x 2070 Ethernet	<input checked="" type="checkbox"/>
164	NTCIP 65.x 2070 Master Ethernet	<input checked="" type="checkbox"/>
167	NTCIP 65.x 2070 Master RS-232	<input checked="" type="checkbox"/>
168	NTCIP 65.x 2070 RS232	<input checked="" type="checkbox"/>
171	NTCIP 70.x 2070 Ethernet	<input checked="" type="checkbox"/>

## 2.1.8 Client

The *Client* provides a graphical user interface (GUI) for multiple workstations distributed across a TCP/IP network. The *Client* allows the user(s) to view the current status of the system, exercise system control, and generate reports from historical data.

**NOTE: ATMS Clients cannot coexist on PCs, laptops or tablets with Streetwise Clients.**

## 2.1.9 Installing the ATMS Client

To install an **ATMS** client, first make sure that the desired client workstation can “Ping” the ATMS server IP address or Hostname. Next launch your Microsoft Explorer browser. Type <http://server-hostname/Streetwise2WS/default.aspx> into your address bar. A web page for “**ATMS**” tools will then appear.

ATMS Version 2.x requires that the user utilizes the Microsoft .NET Framework version 4.8. To ensure that Microsoft .NET Framework is on your computer, you must select and install the Prerequisite programs as shown in the Prerequisite section. When completed, then select the “**ATMS** Client Setup”.



ATMS Central Software - Online Resources	
Build	5.19.44.0
Prerequisites Installation	<a href="#">Microsoft .NET 4.8</a> (v4.8 or above required) <a href="#">Or Download from Microsoft</a> <a href="#">ATMS Workstation Prerequisites</a> (required) <a href="#">Microsoft Visual C++ 2013 Redistributable (x86)</a> (required) <a href="#">Or Download from Microsoft</a> <a href="#">Microsoft Visual C++ 2015-2019 Redistributable (x86)</a> (required) <a href="#">Or Download from Microsoft</a> <a href="#">AXIS Media Control 7.20</a> (when Axis camera used) <a href="#">AXIS Media Control 7.3.10.1</a> <a href="#">TLS 1.2</a> <a href="#">ReadMe</a> <a href="#">Microsoft® OLE DB Driver 18</a> (required) <a href="#">Or Download from Microsoft</a> <a href="#">IISCrypto Tool</a>
Workstation Installation	<a href="#">ATMS Start Setup</a> (ATMS Start installs ATMS Client if new version is available, and then launches ATMS Client. It also supports multiple agencies switching) <a href="#">ATMS Client Setup</a> (install ATMS Client when ATMS Start doesn't work for some reasons)
Utilities	<a href="#">ATMS Diagnostics</a> <a href="#">Mail Diagnostics</a> <a href="#">Refresh ATMSWS Configuration</a> (when dbo.config changes) <a href="#">Reset ATMSWS Log System</a> Nimble connection state: <b>127.0.0.1:88 connected</b> (it must be connected before any applications starting)
External Device Configurations	<a href="#">BlueTOAD Devices Initialization</a> (click the link above when first time to use BlueTOAD module or new BlueTOAD devices installed)

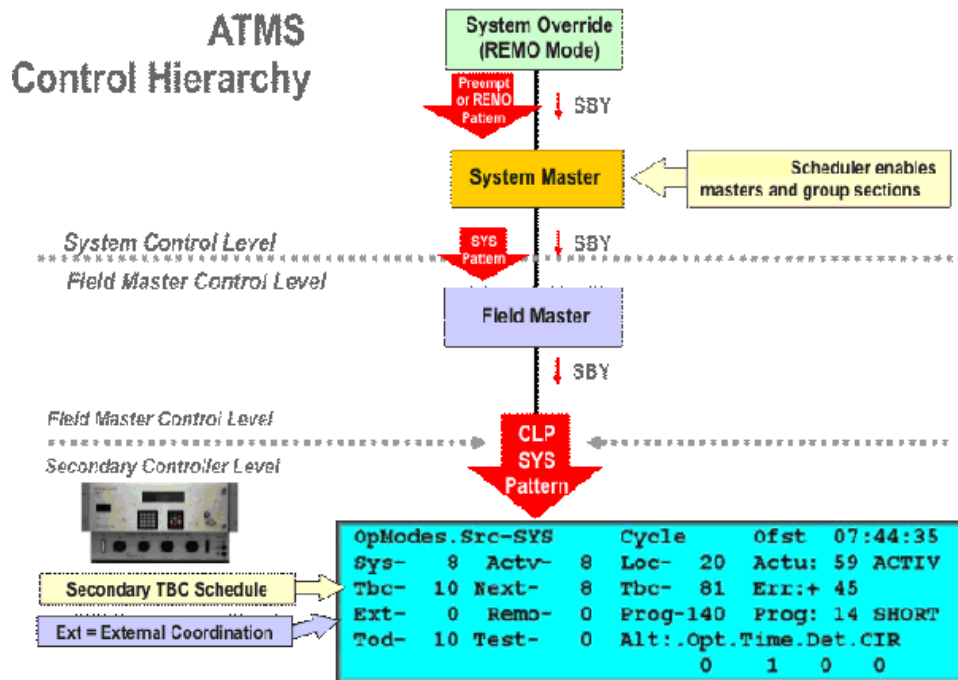
Please refer to chapter 9 ATMS Client setup for typical Client installation steps.

## 2.2 ATMS Control Hierarchy

The Active Pattern drives the operation of the local signal controller in both Coordinated and Free operation. NTCIP defines **OpModes**, **Src** as the source of the *Active Pattern*. The source of the Active Pattern may be *Remo*, *Sys* or *Tbc* as explained below:

The highest level of control in **ATMS** is the Remote (*Remo*) mode. A “*Remo*” pattern overrides the local pattern at the system level. A *Remo* pattern can be issued manually from the **ATMS Instant Pattern** or from a system *Alarm Trigger* responding to a specified system alarm.

The following illustration depicts the “top-down” control hierarchy in an **ATMS** control system. The *Active Pattern* in the figure below is currently driven by *Sys* (value = 8) which overrides *Tbc* (value = 10). The highest level of control, “*Remo*”, is in standby (*REMO* = 0). A separate system mode, External (*Ext*) provides compatibility with external hardware interconnect systems, which are becoming obsolete.



## Central Manual Control (Remo)

The user may download a *Remo* pattern and countdown timer to a local controller or a *Group/Flex Group* from the central office.

## Central Alarm Trigger (Remo)

Controller alarms may be used to override the normal operation of the system. **ATMS** can be programmed to monitor a specified alarm and generate a “trigger” response to a *Control Group* (typically a *Flex Group*). When the alarm is detected, the system can download a specified *Remo* pattern (*Instant Pattern*) or preempt (*Instant Preempt*) with a countdown timer to local controller or specified group of controllers. The local controllers will then override normal operation and implement the trigger pattern or preempt command and revert back to the local “*Sys*” or “*Tbc*” operation after the timer has expired.

## Central Master Control Level (Sys)

A central master module within **ATMS** (optional Software Module) can be enabled in lieu of an On-Street Field Master, to perform all master functions. A master (field or central) controls up to 32 controllers assigned to the master subsystem (*Control Group*). The master selects a “*Sys*” pattern from either the master time-of-day schedule or from a traffic responsive or adaptive control algorithm running within the master. The central master downloads the “*Sys*” pattern to the local controllers in the subsystem to override the local time-of-day (*Tbc*) schedules.

Intersections may be re-assigned to a central master subsystem by time-of-day to support dynamic group assignment. In addition, intersections from different communication channels may be assigned to the same central master – i.e., a central master is not communication bound like the field masters which require that all members of the *Control Group* reside on the same communication link.

## Field Master Control Level (Sys)

A field master (Model 981 or 2070 Apogee “Master”) is embedded software within a local controller and communicates with **ATMS** as well as the local controllers. A field master *Control Group* is typically defined by the communication path interconnecting the field master with the intersections assigned to the master subsystem. Field masters download the *Sys* pattern to all intersections assigned to the master subsystem.

The master selects the “*Sys*” pattern from either the master time-of-day schedule or from a traffic responsive or adaptive control algorithm processed within the field master. A master “*Sys*” pattern other than zero overrides the local “*Tbc*” patterns as explained in the previous section. If a master is in standby, the “*Sys*” pattern will be set to zero and control passed to the local “*Tbc*” schedules.

## Local Intersection Control Level (Tbc)

If the system is in standby (*Remo*=0 and *Sys*=0), the active pattern in each local controller will be set by the time-of-day schedule in the local controller. This mode of operation is typically referred to as Time Base Coordination (*Tbc*). If the system (**ATMS** or On-Street Master) is in standby (*Sys*=0), then the Active Pattern is set to *Tbc* generated by the local time-of-day schedule and it will operate using its local programming.

Intersections assigned to central masters (**ATMS**) may reside on different communication channels. Central masters allow the *Control Groups* shown to the right to be redefined by time-of-day.

## 2.3 Getting Connected to the ATMS System

This manual assumes that your **ATMS** system is connected to a controller in one of two ways:

### Serial

Direct connect, such as using a laptop or PC workstation requires that the computer serial port be connected directly to a NEMA TS2 or 2070 controller through a null-modem cable. The *Comm Parameters* programmed in the controller must match the settings programmed in the *Comm Server* by your system administrator. This includes the “StationID” (Controller ID#, MM→6→1) and comm port baud rate settings (MM→6→2→1).

Port 1 *Comm Parameters* for the TS2 are programmed from the controller Main Menu→6. The Port 1 parameters should set DIAL to OFF, COMM to 1.0 and reflect the baud rate and duplex settings when your system administrator installed **ATMS** on your PC.

SP1 on the 2070-7A card is typically used to provide a direct connection to a PC or Tablet. The baud rate for SP1 is set under \*→6→2. SP1 is also typically tied to Async1 in the bindings under \*→6→6, which is bound to *SysUp*.

### Ethernet

A direct Ethernet connection is also possible between the server and controller. The controller can be connected directly from the server using a crossover patch cable, or via the preferred method of a hub switch using a standard patch cable. The controller IP address must be assigned to the controller as it is defined in controller definition. The “Host” IP address in the controller needs to be set to the IP address of the computer that the Comm Server resides.

#### 2.3.1 Installing an ATMS Client over a Network

If the client workstation is connected to a TCP/IP network, your **ATMS** system administrator or IT Department can install your **ATMS** Client software on your local computer. An **ATMS** client can be installed via a web browser installer. With **ATMS**, mapped drives, folder sharing, or file sharing are no longer required to install or operate a client. The embedded Microsoft web-based data exchange allows all file read/write and control without file sharing and mapped drives. Follow the instructions of the loader or contact your Cubic | Trafficware representative for assistance.

## 2.3.2 Remote Access Connection

Remote access to **ATMS** can be accomplished in several ways. Users will need to work with their IT departments to establish these types of connections because any remote connection to the network involves security issues. The following remote access connections have been used successfully with **ATMS**.

### Dial-up Connection

A TCP/IP telephone dial-up connection using RAS, PPP or SLIP allows the client to connect to the local area network (LAN) directly. Most IT managers will not allow these connections to be made if the LAN is connected to the agency LAN for security reasons.

### Remote Connections: PCAnywhere or GoToMyPC

Another method commonly used requires a third-party software application such as Symantec's "PCAnywhere" or Citrix's "GoToMyPC" to support a remote connection for both the host computer connected to the central system and the remote PC into the host using the internet.

With 56K dial-up connections, the limited bandwidth over telephone makes this connection only useful for brief status checks on the system.

### VPN/Thin Client

**ATMS** can also be accessed from thin clients such as Citrix and *Virtual Private Networks* (VPN). If these connections are available from the Internet, some type of firewall usually protects them. The network administrator must provide access through the firewall for the TCP/IP sockets (TCP/UDP) used to communicate between the **ATMS** client and server programs.

## 2.3.3 ATMS Status Monitor

On the client window there is an ATMS Status Monitor for easy viewing and verification that the main ATMS Processes are running correctly. The agency can monitor the Communications Server, Administrator, ATMS Web services (XIPC/IIS) or the Messaging Server. The user can easily ascertain if a server of main process is up or not running and contact their agency support personnel if needed.

The screenshot displays the ATMS Client v2.9.0.0-5.9.0.25796 interface. The main window title is "ATMS Client v2.9.0.0-5.9.0.25796 : ATMS.Now System / naztec@localhost (licensed to AIDemoLaptop)". The interface includes a menu bar (Home, Definitions, SynchroGreen, Reports, Connected Vehicle, High-Res, Help) and a toolbar with various icons for Real-Time, Utilities, Admin Event Status, Server Status, Admin Update, Configuration, Virtual Priority, Database, Synchro, and Analytics.







The "Controller List" section shows a table with 71 entries. The table columns are: Alarm, Status, Lock, ID, Name, Type, IP Address, Port, Drop, Docs, Notes, Revision, Master, and Flex Group. The table is sorted by ID, and the entry with ID 101 is selected.

Alarm	Status	Lock	ID	Name	Type	IP Address	Port	Drop	Docs	Notes	Revision	Master	Flex Group
1			1	London Ontario	NTCIP 76.x 2070 Ethernet	192.168.101.200	E-NET-5001	1					
2			2	copy from 199:Temple Test V76_ATC	NTCIP 76.x ATC Ethernet	172.028.002.199	E-NET-5199	199					
3			3	Test	NTCIP 76.x ATC Ethernet	192.168.102.200	E-NET-5003	3					
4			4	copy from 199:Temple Test V76_ATC	NTCIP 76.x ATC Ethernet	172.028.002.199	E-NET-5199	199					
5			5	unnamed controller 5	NTCIP 76.x 2070 Ethernet	192.168.101.200	E-NET-5013	13					
15			15	WYE.Garfield at 21st atreet	NTCIP 76.x 2070 Ethernet	192.168.111.015	E-NET-5015	15					
20			20	30th at Emerson - ID 20	NTCIP 76.x ATC Ethernet	192.168.240.020	E-NET-5012	12					30th street
30			30	30th at Arlington -ID 30	NTCIP 76.x ATC Ethernet	192.168.240.030	E-NET-5013	13					30th street
40			40	30th at Shadeland	NTCIP 76.x ATC Ethernet	192.168.240.040	E-NET-5014	14					30th street
50			50	30th at Franklin	NTCIP 76.x ATC Ethernet	192.168.240.050	E-NET-5015	15					30th street
65			65	V65.x Test Controller	NTCIP 65.x 2070 Ethernet	192.168.000.065	E-NET-5006	6					AI B
101			101	Test V76 2070-Enet Id 101	NTCIP 76.x 2070 Ethernet	192.168.000.240	E-NET-5015	15			76.15j		AI B
102			102	Test V76 2070 Enet Id 102	NTCIP 76.x 2070 Ethernet	192.168.000.241	E-NET-5016	16			76.15j		AI B
103			103	Test V76 2070 Enet ID 103	NTCIP 76.x 2070 Ethernet	192.168.100.103	E-NET-5103	103					Wichita Flex Group
165			165	V65.x Test E-net	NTCIP 65.x 2070 Ethernet	192.168.000.065	E-NET-5065	65					
180			180	V80 Ethernet test -2070 1C- 32 Phase	NTCIP 80.x Linux Ethernet	192.168.000.180	E-NET-5008	8					
199			199	Temple Test V76_ATC	NTCIP 76.x ATC Ethernet	172.028.002.199	E-NET-5199	199					
203			203	Lewisville Test V61 E-net-Id 203	980 TS2 Sec. 61.x Ethernet	192.168.106.204	E-NET-5003	3					
204			204	Test V61.x NTCIP Ethernet - ID 204	NTCIP 61.x TS2 Ethernet	192.168.000.204	E-NET-5025	25					
205			205	Test V76_e-net - 205	NTCIP 76.x ATC Ethernet	192.168.000.205	E-NET-5025	25					AI B
206			206	Test ATC V76 E-net-206	NTCIP 76.x ATC Ethernet	192.168.000.206	E-NET-5026	26					AI B
222			222	Test V76 Jeddah Controllwe	NTCIP 76.x ATC Ethernet	192.168.101.200	E-NET-5011	11					
292			292	Ada County Coord Diag test- V76 ATC E-net	NTCIP 76.x ATC Ethernet	192.168.106.200	E-NET-5092	92					

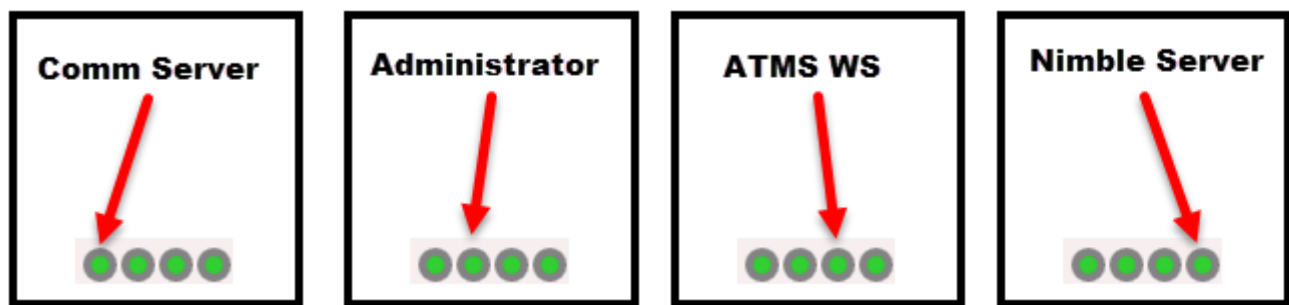
The "Recent Alarms" section is currently empty. The bottom status bar shows "controller id=[101] selected" and a row of status indicators, including four green circles.



The ATMS component status icons are listed below.

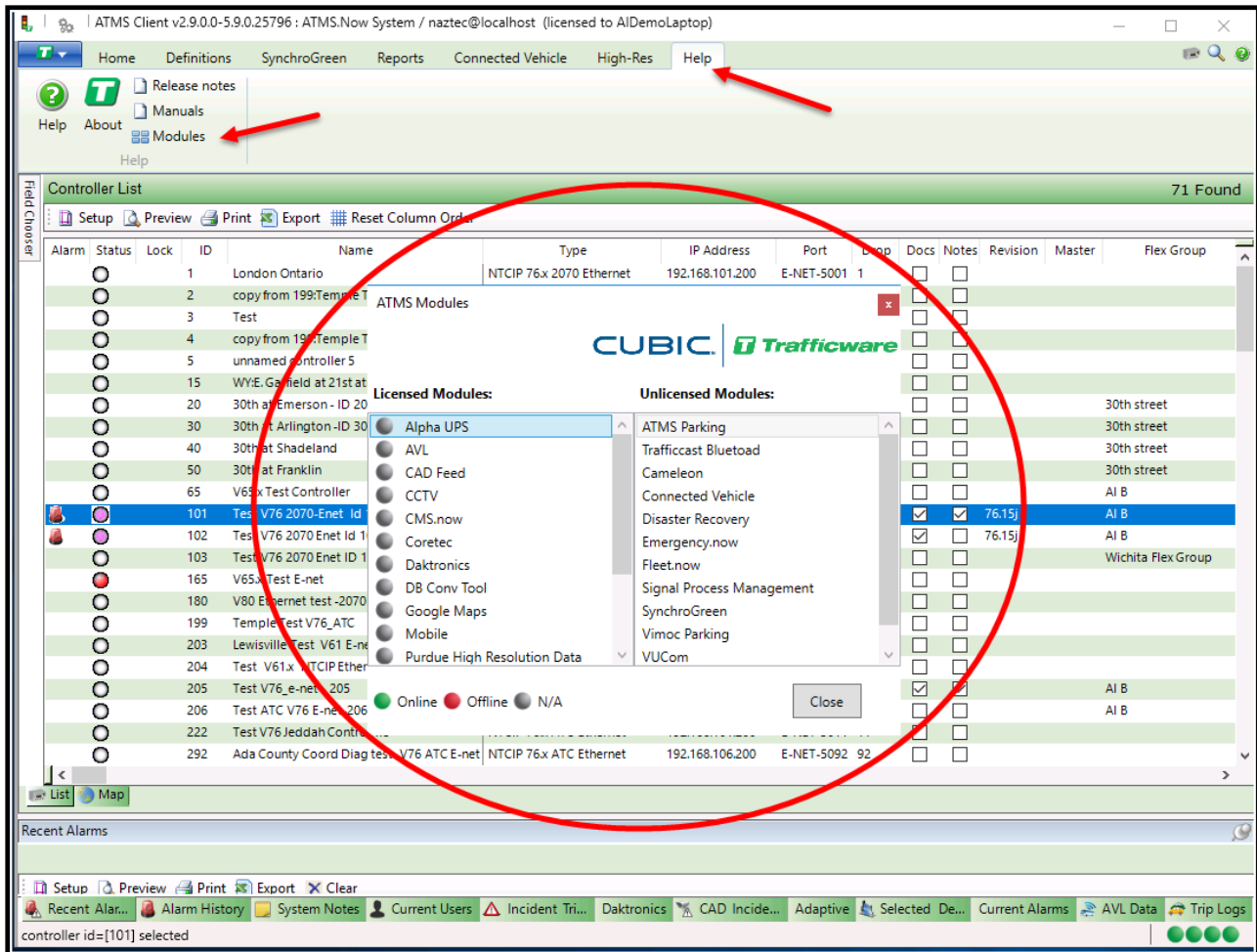
ICON	COLOR	DESCRIPTION
	GRAY	Indicates that the application/module is not enabled in your ATMS System
	GREEN	Indicates that application/module is running correctly
	RED	Indicates that application/module is <b>not</b> running correctly
	YELLOW INNER CIRCLE	The connection to the component is interrupted
	GRAY OUTER CIRCLE	Indicates that the ATMS Health Monitor is not enabled
	RED OUTER CIRCLE	Indicates that the application/module is in a malfunction state or is not running.

You can hover over the Icon to see which application/module it is associated with.



**Note: All four lights need to show a green status in order for ATMS to function properly.**

In addition any Licensed modules can be monitored via the Help Menu by selecting the Modules icon as shown below:



**This manual has been created to describe all features in the standard version of ATMS. There may be features described herein that are not available based upon the features that your particular agency has purchased. Please contact your Trafficware representative for further details on features that your agency would like to add to your version of ATMS.**

## 3 Getting Started

This section shows how to Log on to **ATMS** and become familiar with the user interface.

**ATMS** is a client/server application that allows multiple clients to share a single communications server dedicated to field communications.

### 3.1 Logging On to ATMS

Double click the *Client* icon on the Windows desktop.



A user login and password screen is displayed:



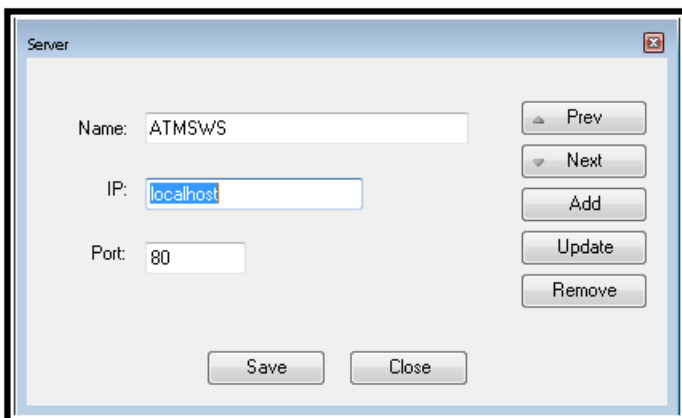
If the Client is not connected to the Communications Server over the network, then a message, “Communication Server Access Failure” will be displayed in a message box. You may select Continue to access database functions, but all communication features will be “grayed” out, as controller communications functions will not operate.

A server selection screen which will allow larger agencies (such as states, provinces and counties) to select a specific server if they house multiple instances of ATMS.

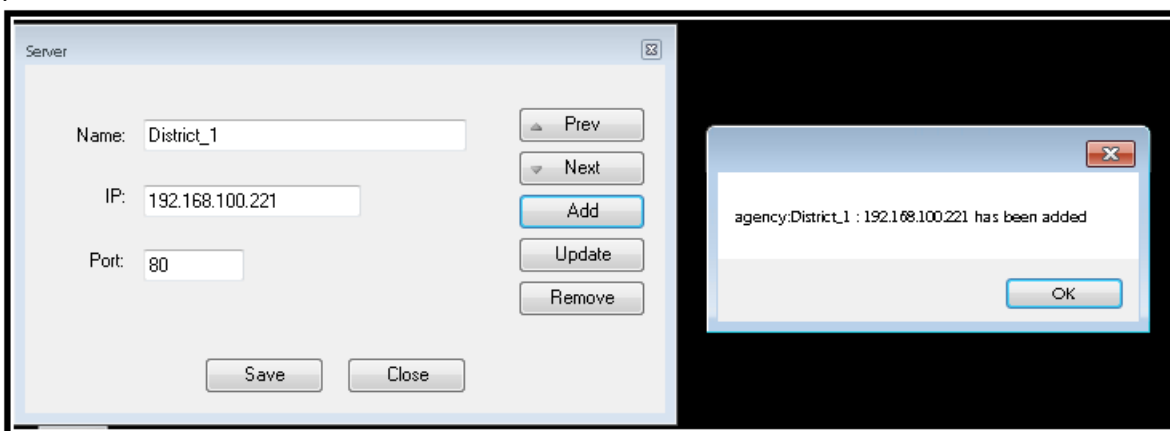
Using your mouse, left click on the server selection.



The following server configuration screen will come up.

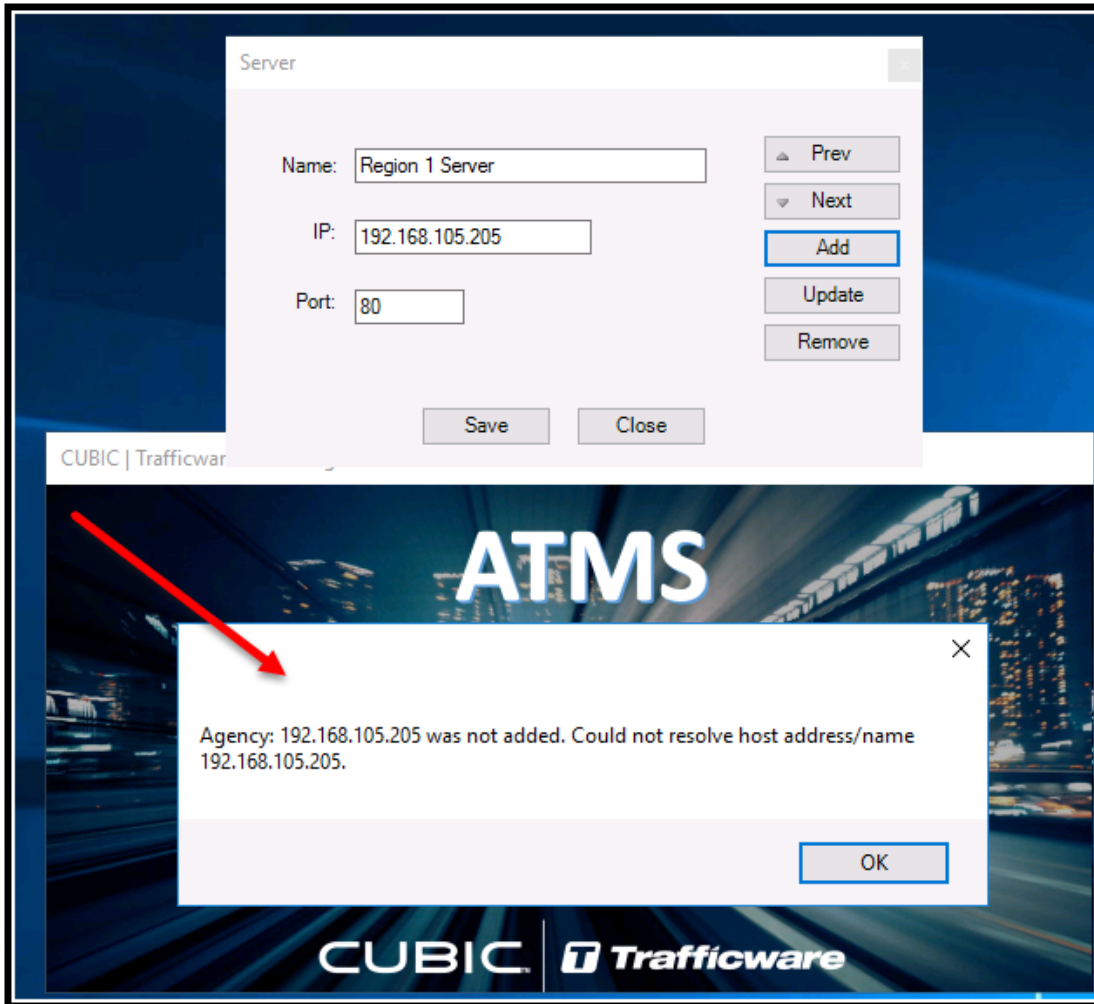


Type the name, the server IP address, and the server IP port number (typically Port 80) of the next server that you want to access. By selecting Add will allow the user to add a server IP to the list for later selection

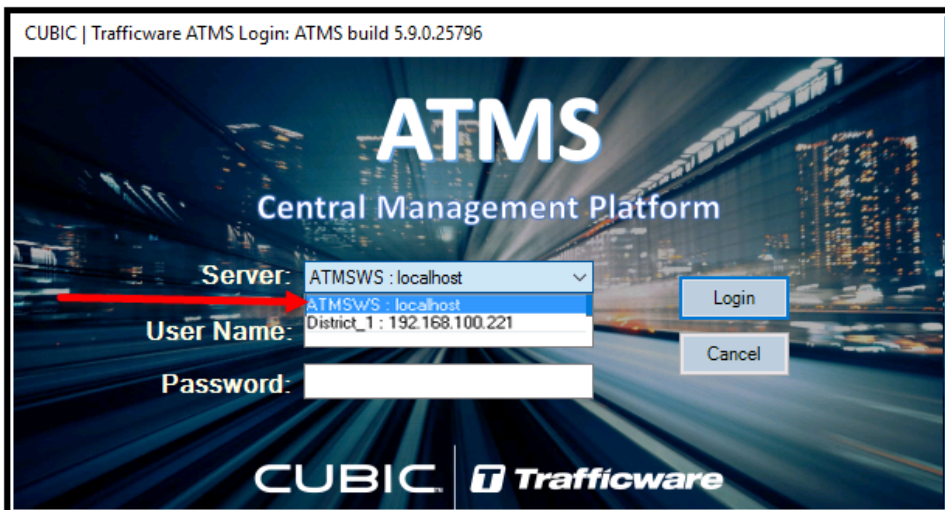


After setting up all your servers, hit the save button to save your server list.

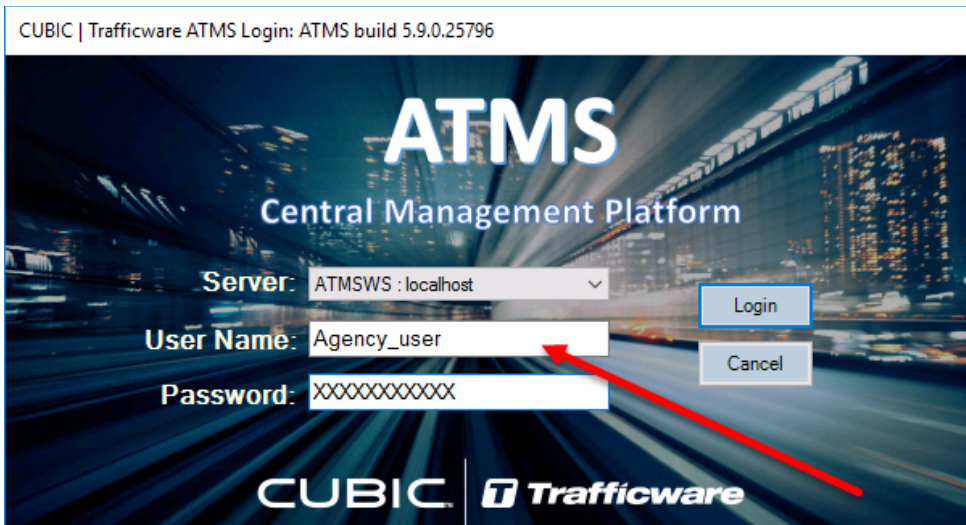
If the server is not able to be connected at the time of creation, an error screen will be displayed as shown below and the server will not be added to your ATMS selection list.



Once you start the client, you can select the server that you would like to login to.

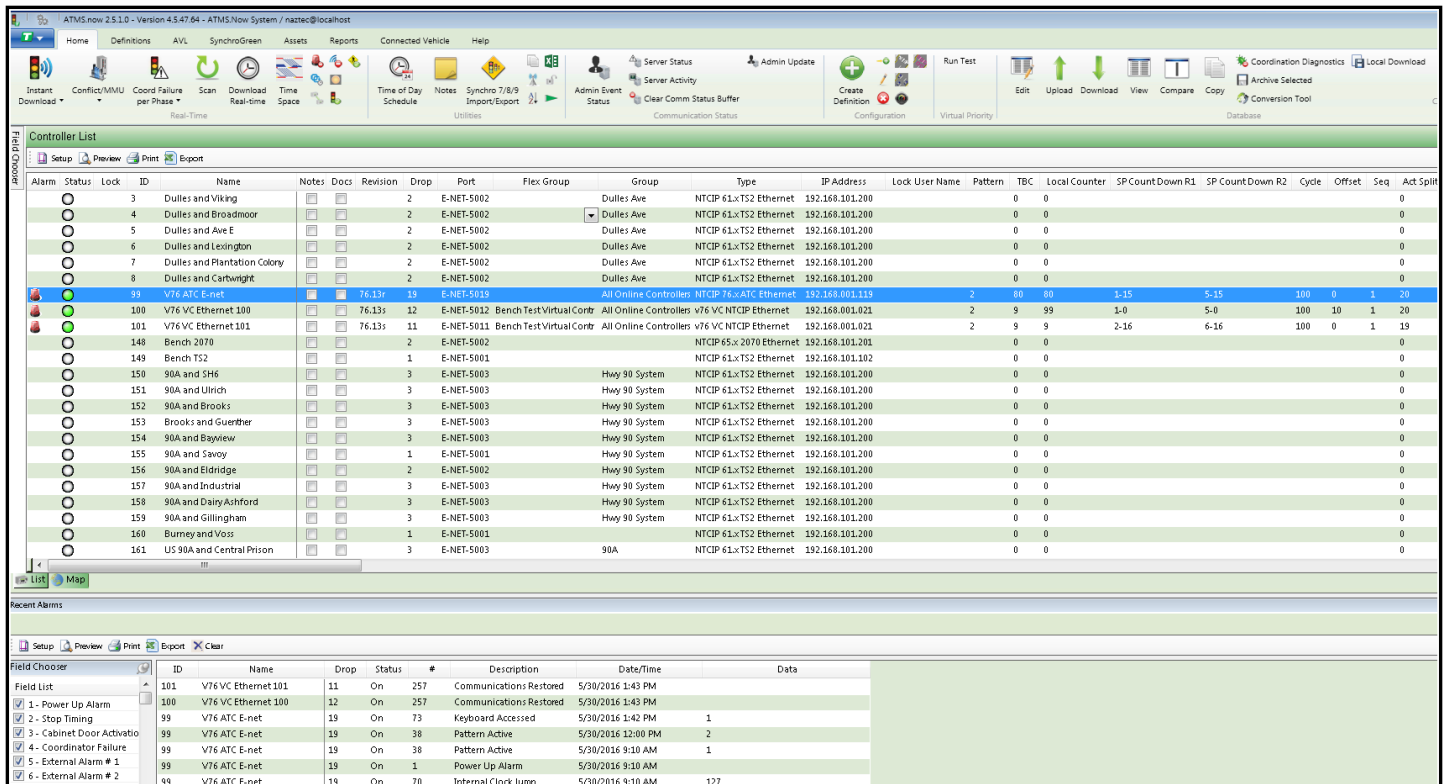


Next enter your Username and Password. Your system administrator should provide you with your user name and password.

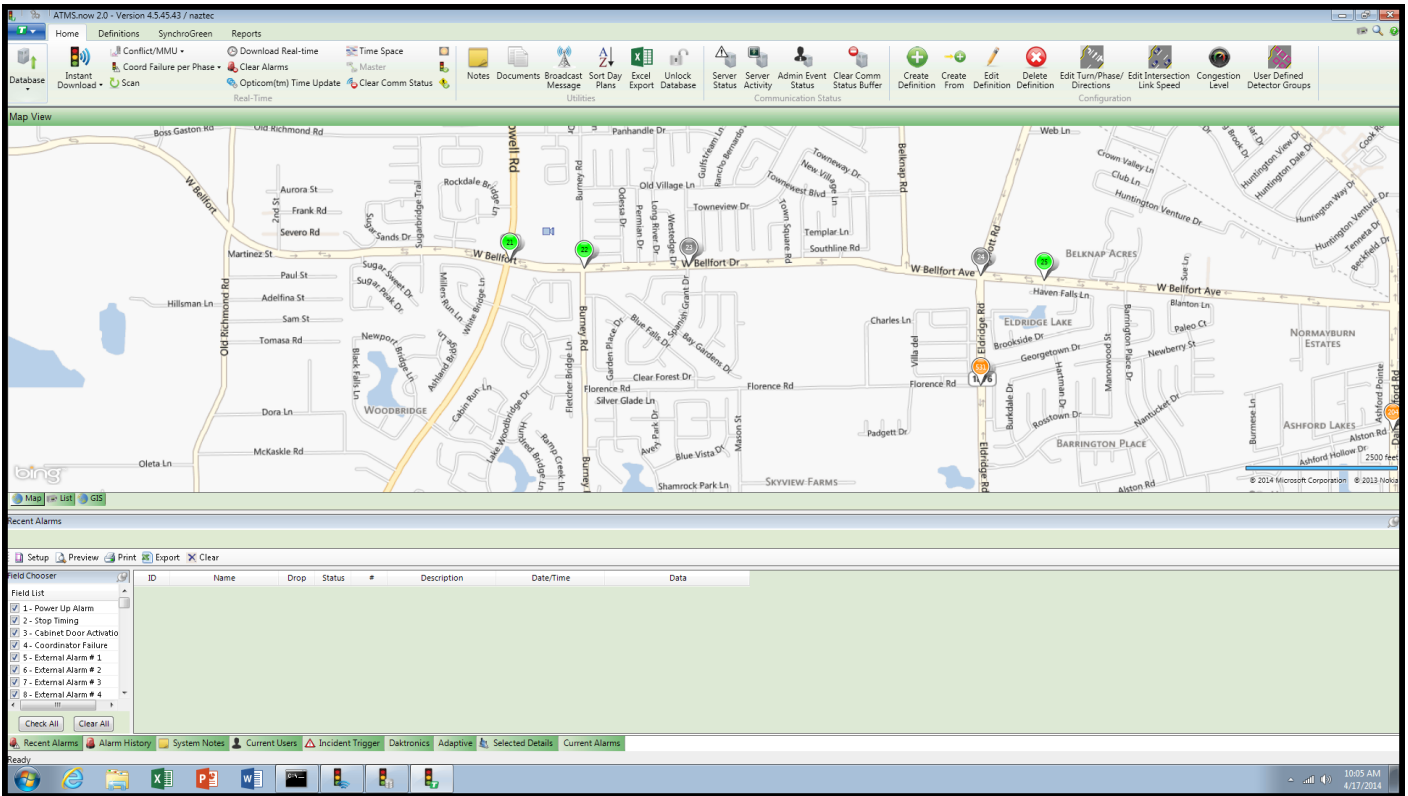


If the agency utilizes domain authentication, and the user is already logged in, the users to log into the client without a password. Please refer to the User section of Chapter 6 for setting up domain authentication.

After correctly logging in, the **ATMS** screen will display the List view overview screen as shown below:



Selecting the Map tab will display the Map Overview screen as shown below:

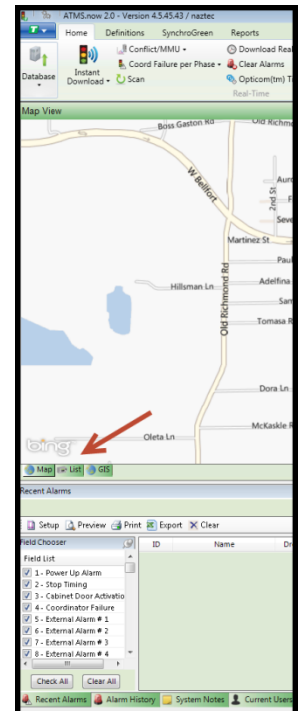


This Map view gives the user a quick overview of the status of the agency's intersections. At the bottom of the Map are two or three tabs labeled Map, List and GIS. The GIS Tab is available under the GIS Legacy mode.

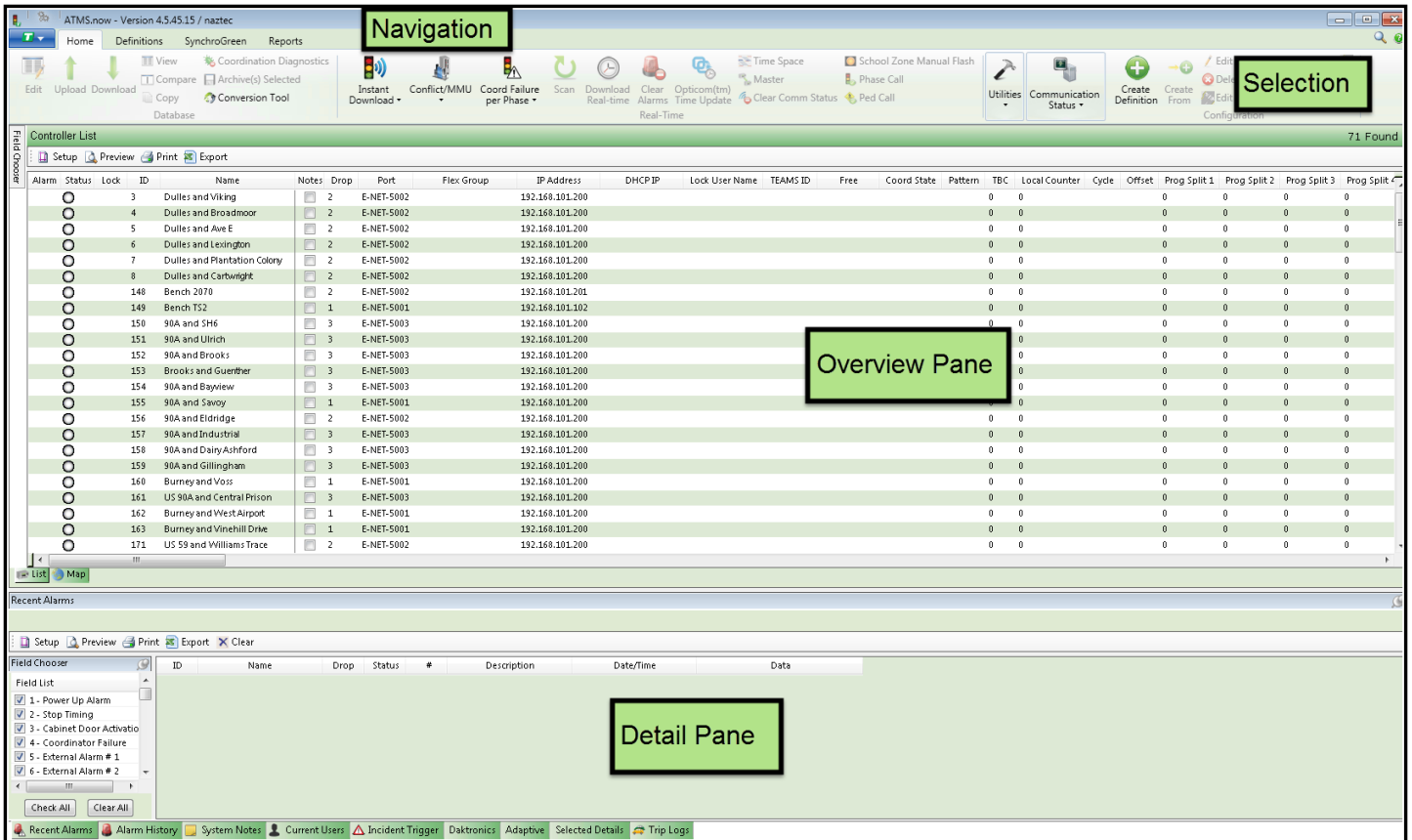


The initial Map view as shown above utilizes Bing Maps. The GIS view utilizes the agency's ESRI GIS backgrounds as an alternate way to view intersections. The List view presents a tabular list of intersections.

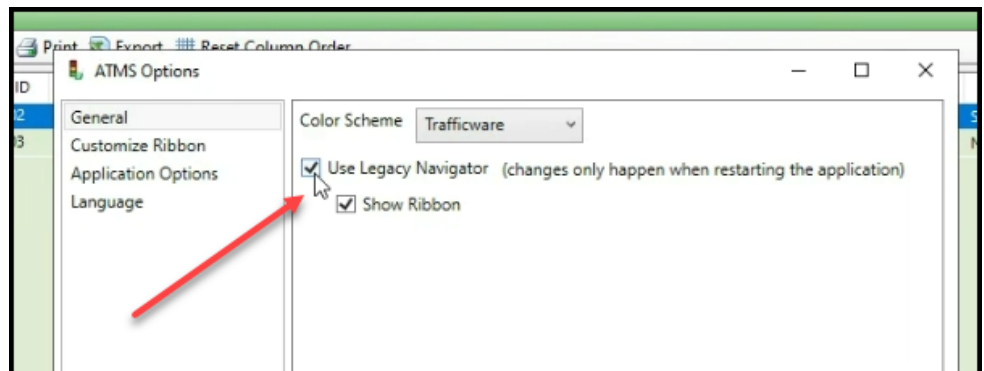
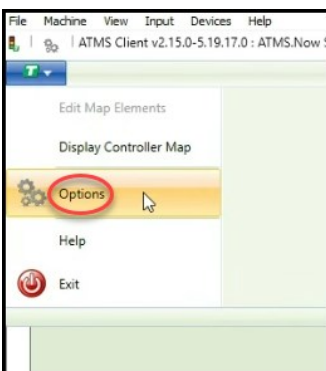
Each view will be detailed in this document.



The **ATMS** screen will be displayed providing the four main work areas: Navigation, Selection, Overview Pane and Details Pane. Below is the list view.



In addition, our existing users can continue using the Legacy Navigator by selecting it from the main tool bar. Under this view there are three main work area panes: Overview, Detail and Navigation:





The Legacy view is shown below:

The screenshot shows the 'STREETWISE - Palm Beach County' application. The interface is divided into several panes:

- Action Pane:** Located on the top left, containing 'Home', 'View', and 'Unload Database' options.
- Search Engine Pane:** Located on the left side, featuring search fields for ID, Name, Flex Group, and Drop, along with 'Reset All...' and 'Find Now...' buttons.
- Module Pane:** Located at the bottom left, with sections for 'Definitions', 'Reports', and 'Assets'.
- Overview Pane:** The central area displaying a 'Controller List' table with columns: Alarm, Conn, ID, Name, Drop, Flex Group, Fee, Coord, Pattern, and Cr.
- Detail Pane:** Located at the bottom right, showing a 'Recent Alarms' table with columns: ID, Name, Status, R, Description, Date/Time, and Date.

Additional UI elements include a top menu bar (File, Definitions, Utilities, Administration, Help), a status bar at the bottom showing '22 12:50:03', 'bryan - ID:7', and 'Login Duration: 00:01:14M'.

### 3.2 User Customization Interface and Options

The user can customize and select the interface via the Cubic | Trafficware Icon on the top left of the screen. This will bring down a drop down menu as shown below.

The diagram illustrates two ways to access customization options:

- Access options directly:** A red box with an arrow pointing to the 'Cubic | Trafficware' icon in the top left corner of the application window.
- Access options via drop down:** A red box with an arrow pointing to the dropdown arrow on the 'Cubic | Trafficware' icon.

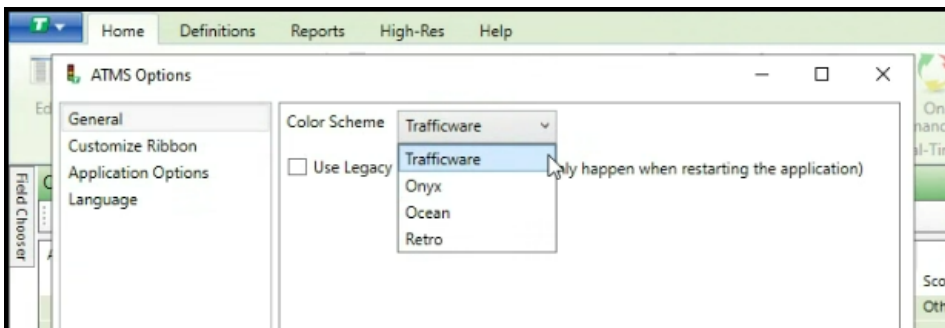
The resulting options menu is shown on the right, containing the following items:

- Edit Map Elements
- Display Controller Map
- Options (with a gear icon)
- Help
- Exit (with a power button icon)

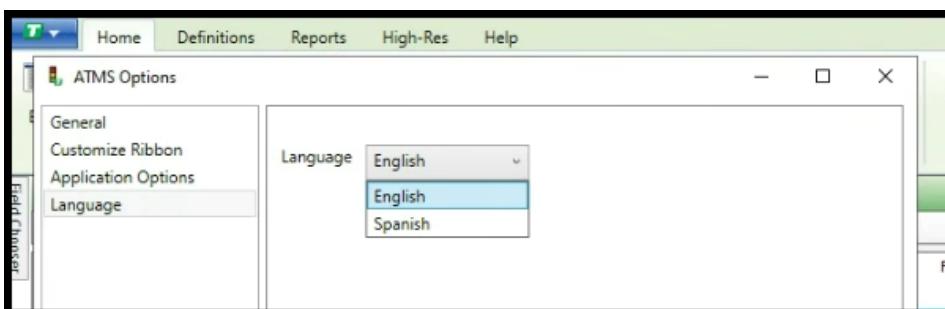
Function	Description
Edit Map Elements	This selection is used in association with Google Maps only. It will select an interface to add/edit or delete Controllers, Devices or Scan Elements from the Google Map Interface.
Display Controller Map	This selection will launch a separate Bing Map screen for Traffic Operation center displays
Options	Allows the user to change the screen interfaces as well as the particular icons on each screen
Help	This selection will bring up this manual using context sensitive help. Here you can view, print and search ATMS topics.
Exit	Close the ATMS Client.

Selecting **Options** allows the user to change the screen interface as well as the particular icons on each screen. When selected, go to the Options screen where you can customize the ATMS General Layout, Customize Ribbon, Application Option and Language options.

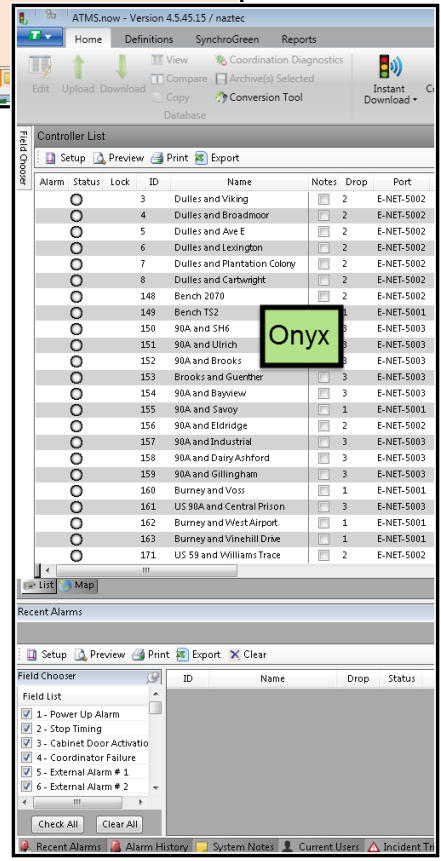
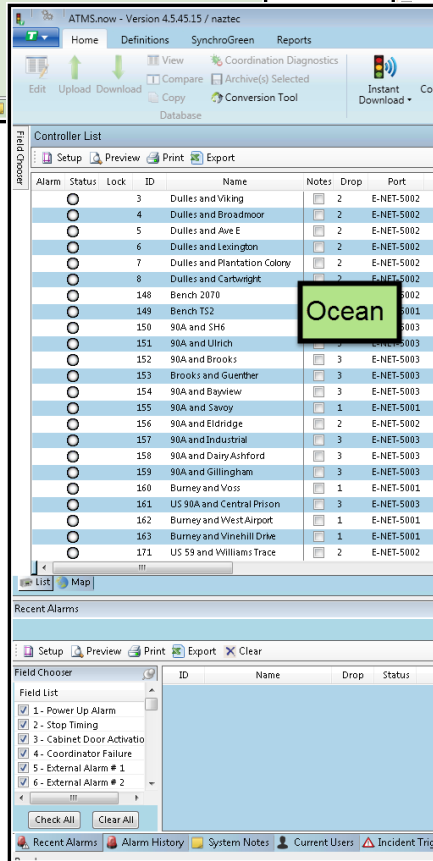
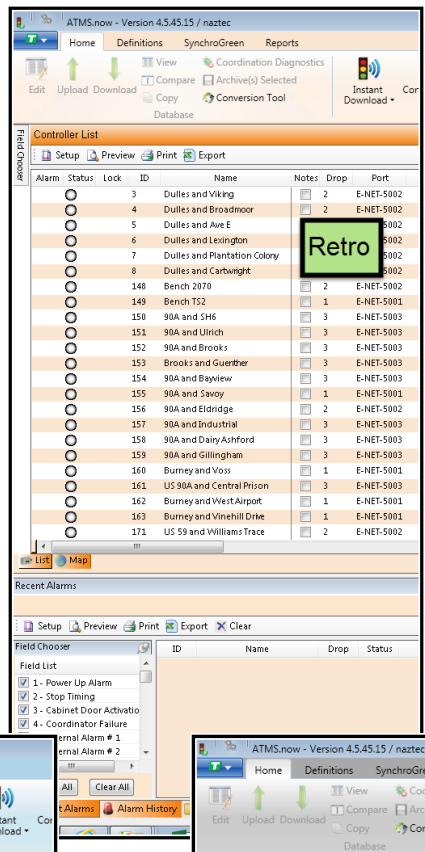
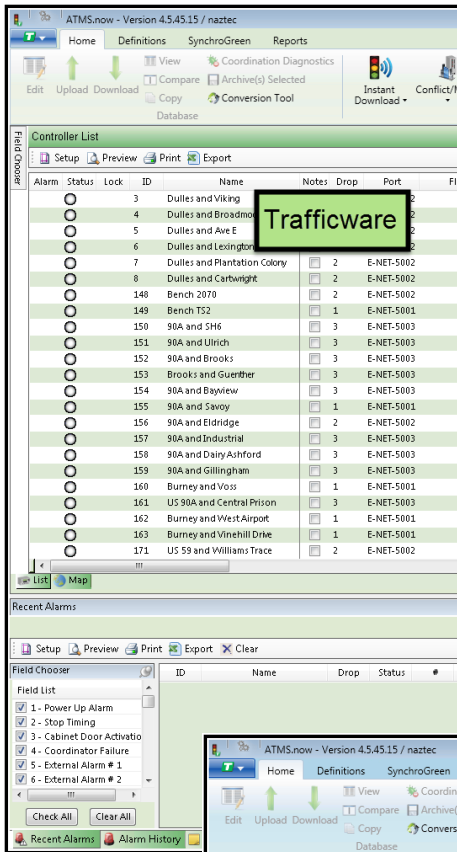
Customize the General Layout:



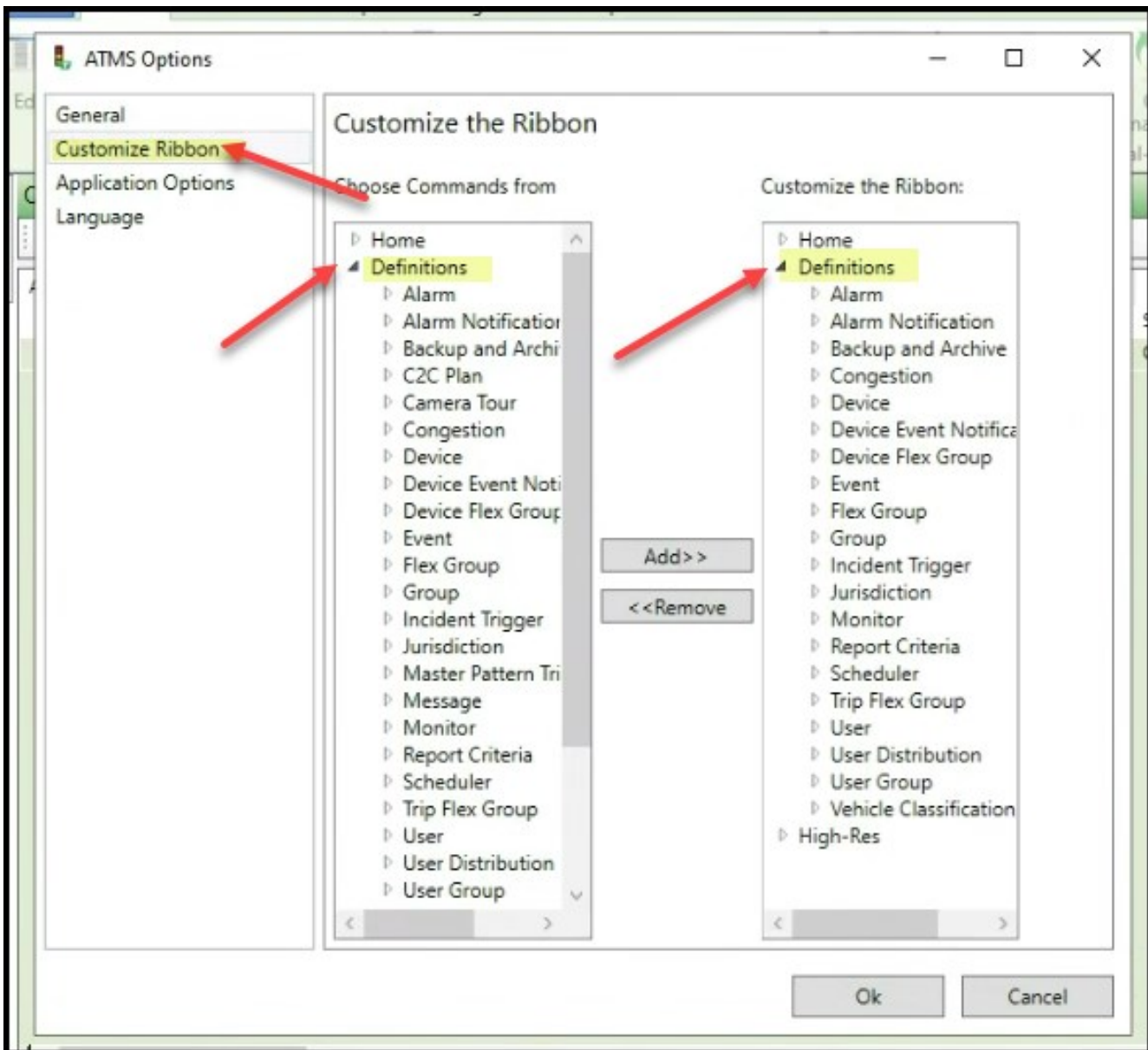
Customize the Language Setting:



Below are the color screen layouts:

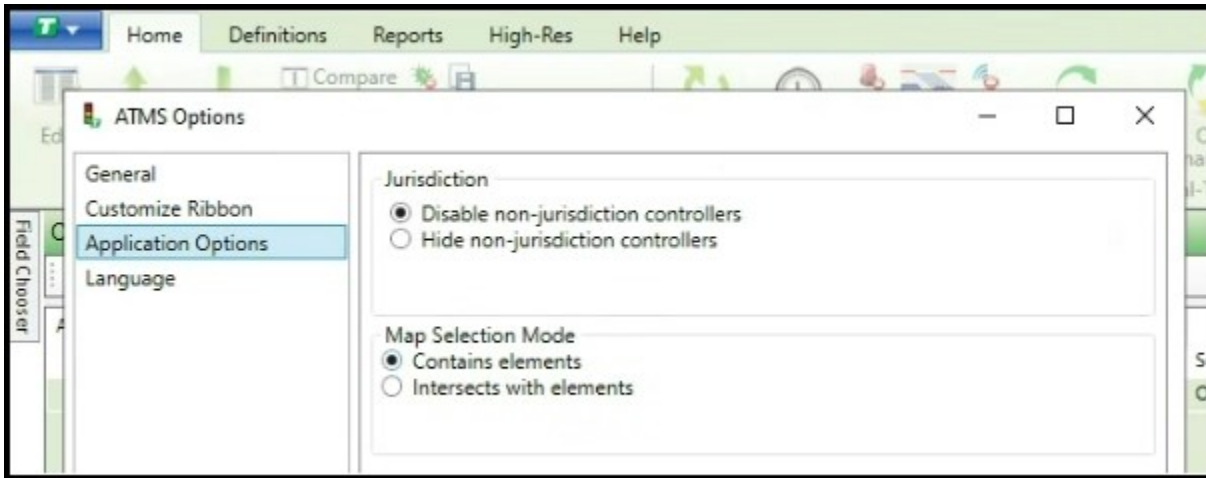


In addition, each module's Selection ribbon can be customized via the Customize Ribbon selection.

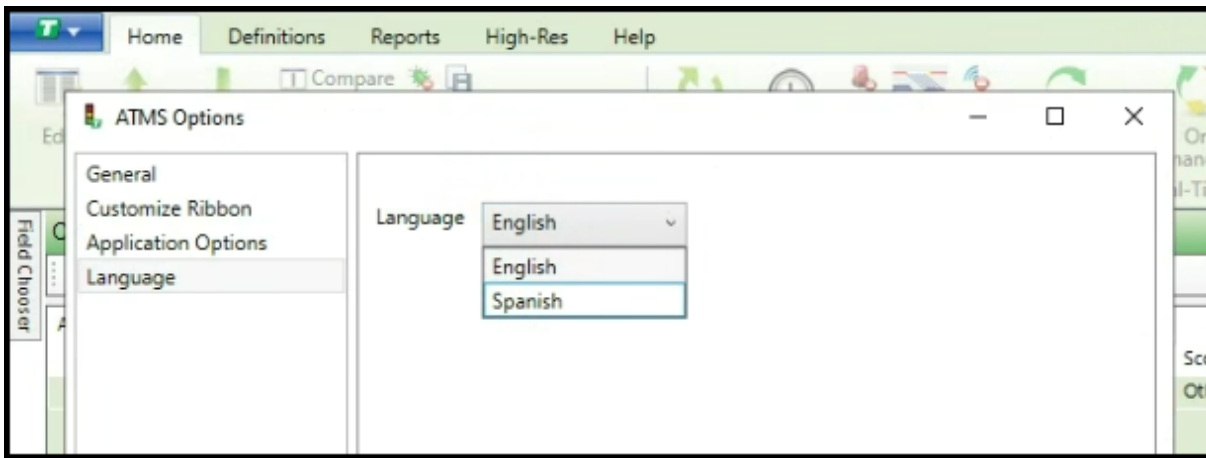


**NOTE:** This manual's graphics will reflect the ATMS 2.x screen views.

## Customize Application Options:

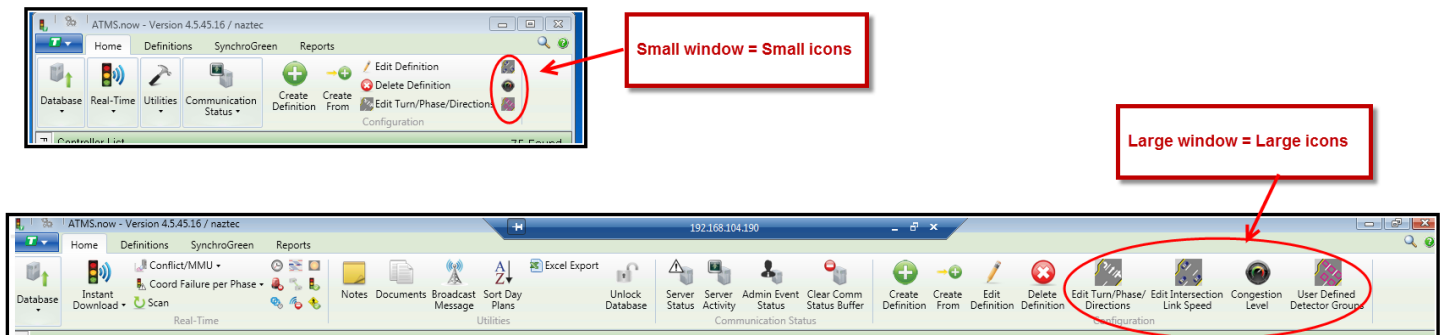


## Customize Language:



### 3.2.1 Ribbon Sizing

The icons on the ribbon are displayed based on the screen size that is generated by the user. As you expand the Client window, the icons will grow in size and associated information will be displayed. As you contract the Client window, the icons will grow smaller.

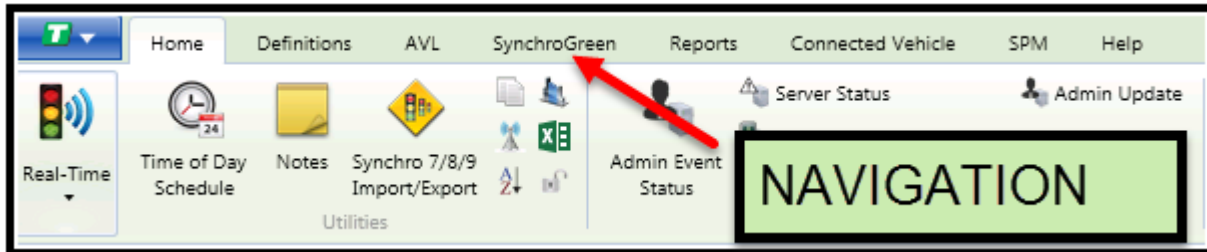


### 3.3 Module Selection and Basic Screen Navigation

The *Navigation* Area allows the user to select one of the following modules: Home, Definitions, and Reports.

Optional Modules such as the Connected vehicle, AVL, High-Res Cloud interface and the SynchroGreen Module are also available. Contact your Cubic | Trafficware representative for further information.

Also Note that the context of the *Overview* pane and *Detail* panes change with the *Navigation* module selected.



The *Home* module enables the user to define and manage all controllers in the system, as well as control all additional system devices such as cameras, switches, etc. This module provides access to the controller database and communication access to each device in the field. Utilities are provided to import/export Synchro data and monitor measures-of-effectiveness (MOE) from system detectors associated with the controllers in the system.

The *Definitions* module enables the user to configure all system definitions (with exception of controllers), users, GIS map files, and system Scheduler tasks. The user may also define *Groups* or *Flex Groups* and define ITS field devices other than signal controllers (cameras, CMS, switches, temperature sensors, etc.).

The *Reports* module provides the ability to query the SQL databases maintained by the system. Reports can be generated for a single device or for a selection group by specifying begin and end dates and times and other attributes related to the specific report.

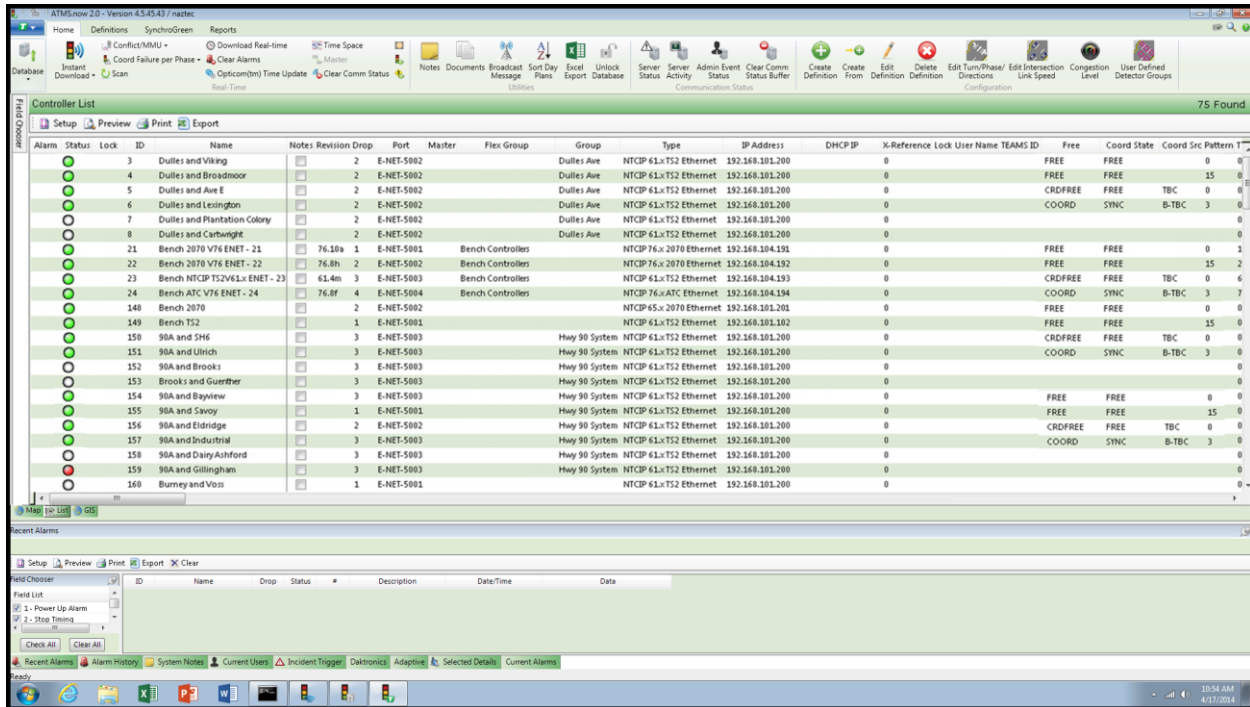
Optional Modules such as Connected Vehicle, AVL, High-Res Cloud interface and SynchroGreen will also be displayed, if the agency has purchased them. Please contact your Cubic | Trafficware Representative for further information about these modules.

Each module is explained in detail in the following sections.

## 3.4 Overview of the Home Module


**ATMS** uses re-sizable “Pane” windows within a single Client screen to allow the user to create the desired screen space for each work area. This eliminates older-style “Pop-Up” screens when working on standard operations. **ATMS** does still operate “Pop-Up” screens for real-time “Scan” windows and video windows when camera feeds are launched.

The figure shown below illustrates the different “Panels” of **ATMS**. These Panels are present on each of the three base modules of **ATMS**: 1) Home, 2) Definitions and 3) Reports.



### 3.4.1 General Information

The *Overview* pane defaults to a *List* of all controllers defined in the system when *Home* is selected. Notice the arrows, on the bottom of the overview pane, pointing at the *List* Tab, *Map* Tab or *GIS* Tab. From the main view pane, the user can select to view the system by “*List View*” by selecting the *List* tab, the “*GIS View*” by selecting the *GIS* tab or the Bing “*Map View*” by selecting the *Map* Tab.

Real-time information such as active pattern, communication status, controller/group configuration, coordination status, real-time R/Y/G status, and detector input status is shown for each controller on the *List View*. The *Map View* will display what controllers are communicating with a graphical background or a Satellite image background. When selecting the *GIS View*, a hover balloon will appear for the activated layer (by checking the round button next to the layer box) when the “*Information*” icon  is selected and the mouse is placed over the corresponding object on the map.

The displayed information for the *List View* is user-selectable using the *Field Chooser*. The displayed layers on the *GIS View* is user-selectable using the *GIS “Legend”* by checking the layer’s square box.

The *GIS View-Legend* and the *List View-Field Chooser* functions, which tuck in the upper left corner of each screen, can be kept open by selecting the “push pin” to pin the field open on the window.

The *GIS* map will automatically resize within the *Map View Pane* when the *Legend* is “pinned up” or “tucked in”, allowing the user to customize the look and feel of the *GIS* mapping control.

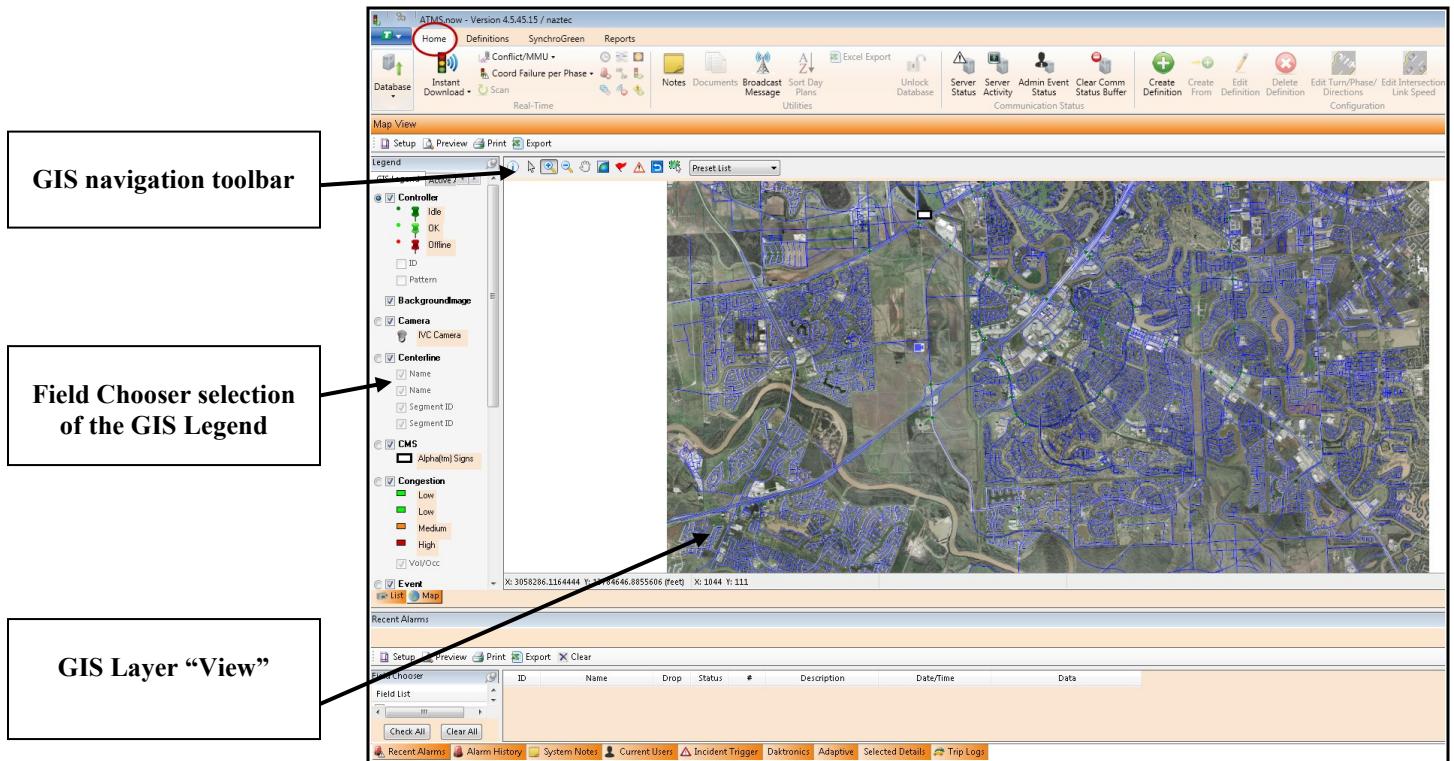


Figure 3-1: GIS-View

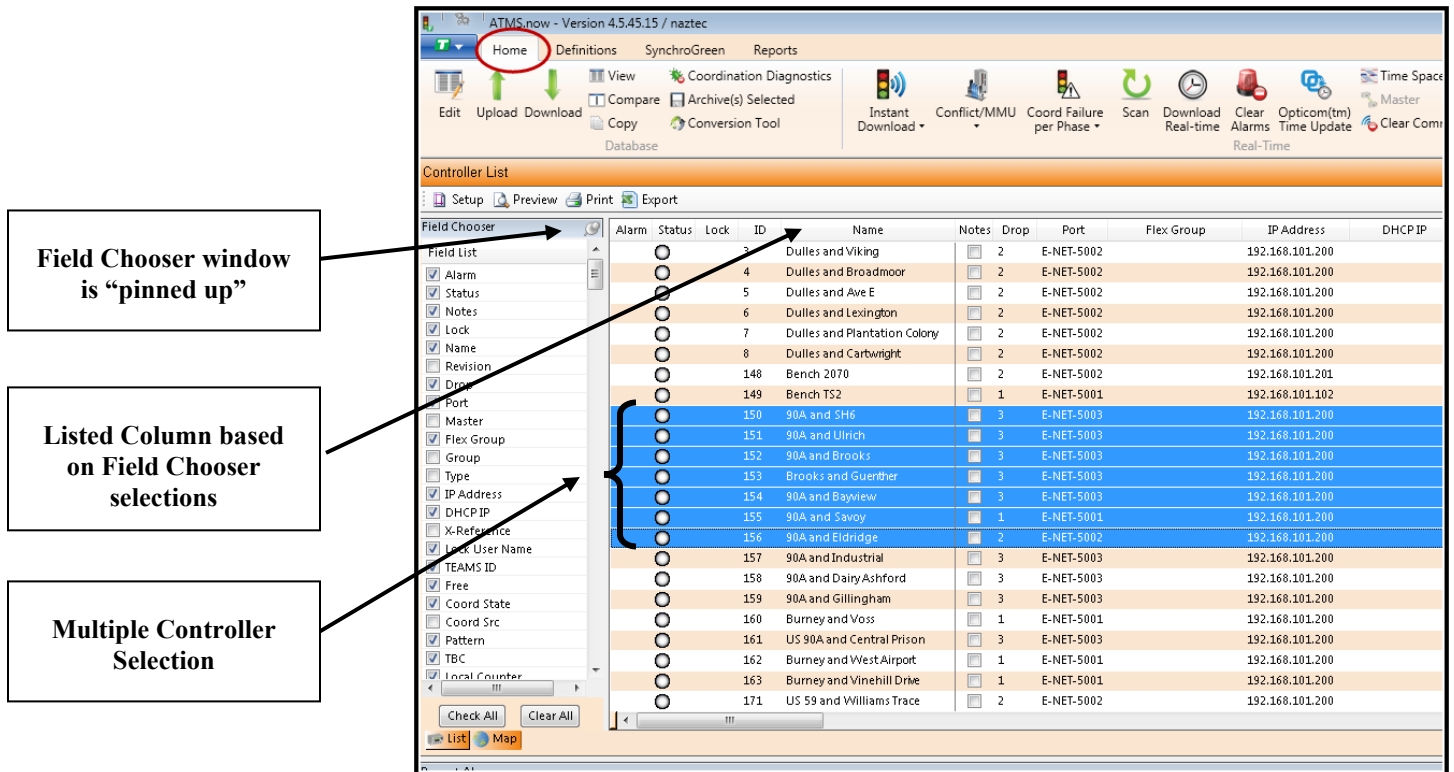


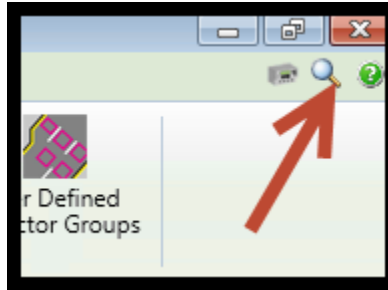
Figure 3-2: List-View



### 3.4.2 Search Engine Tool

The screenshot shows a search engine interface titled "Home Search...". It contains several search criteria, each with a dropdown menu set to "<All>": ID, Name, Flex Group, Group, Master ID, Type, Drop, IP Address, X-Reference, Comm Status, Pattern, Status, Coord Src, Cycle, and Alarm Status. At the bottom, there are two buttons: "Reset All..." and "Find Now...". Below these buttons is a checkbox for "Auto Refresh" which is currently unchecked, and a dropdown menu for the refresh interval, currently set to "30 secs".

The list of controllers in the *Overview* pane (GIS or List) can also be selected using the *Search Engine* tool. To select the *Search Engine* tool go to the upper right side of the Navigation area and select the search icon.



Once this icon is chosen, a floating *Search Engine* Pane will appear. The *Search Engine* tool changes based on the selected module. On the left is the *Search Engine* Pane for the Home module.

You may specify a single controller (or master) by *ID* or *Name*. This can be a customized search by placing a comma between each *ID* number. In addition you may specify a Selection Group from a *Group* or *Flex Group* list.

Use to slider bar in the *Search* pane to view all search criteria. Other search values include Controller *Type*, Communications *Drop* or *Status*, *IP Address*, *Pattern*, and other parameters.

Press *Find Now* to create the results of the *Search* in the *Overview* pane. You can then perform *Actions* on individual or multiple controllers in the *Overview* pane.

After selecting the controllers desired from the *Overview* pane, choose one of the *Actions* listed on the Selection Ribbon above the Overview pane. Note that the context of the *Overview* pane changes with each *Action* selected.

If your search was performed on a dynamic category, such as Comm Status or a specific Pattern number, you can set the Search Engine to "Auto Refresh" the search parameters, keeping your search accurate. The refresh rate can be set by selecting the desired time interval in the drop-down selection box. **Note:** When you are finished with a specific search with refreshing, you should disable the "Auto Refresh" option, as it will continue resetting your future actions to the parameters in the Search Engine.

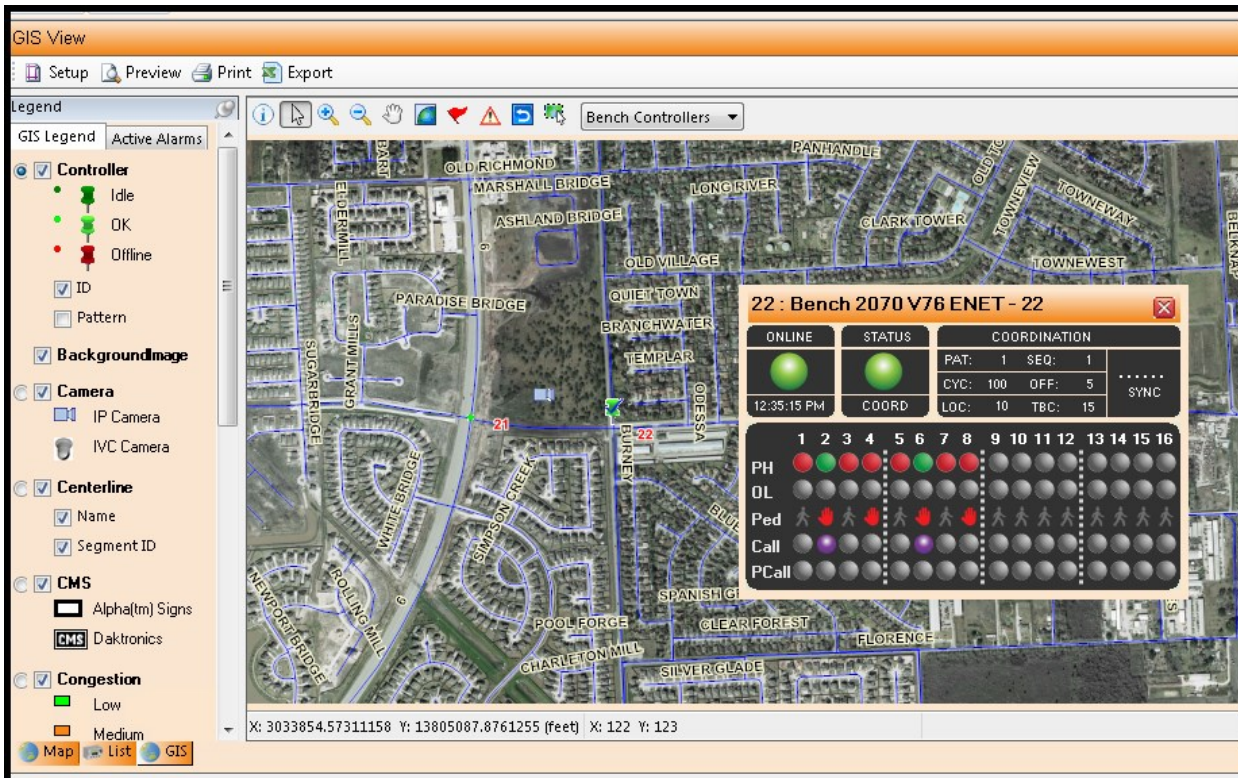
To reset your search and restore the full system list, select *Reset All*, then *Find Now*. This resets all the search engine parameters back to "All" and displays every controller or device.

### 3.4.3 Real-Time Scan Icon

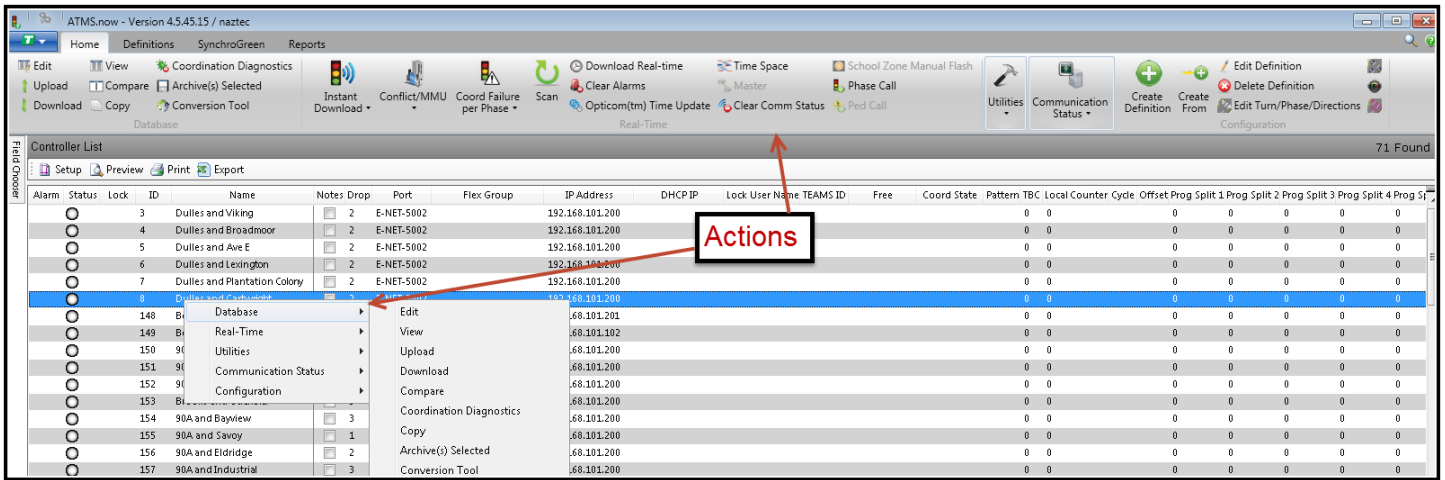


Selecting the Real-time scan icon will automatically enable a scan screen to appear when you select an intersection. If this icon is toggled again, the automatic Real-time scan display will be turned off.

Once Real-time scan is turned on and an intersection is selected, the real time scan screen will appear. Automatic Real-time scan is available on the Map, List or GIS views.



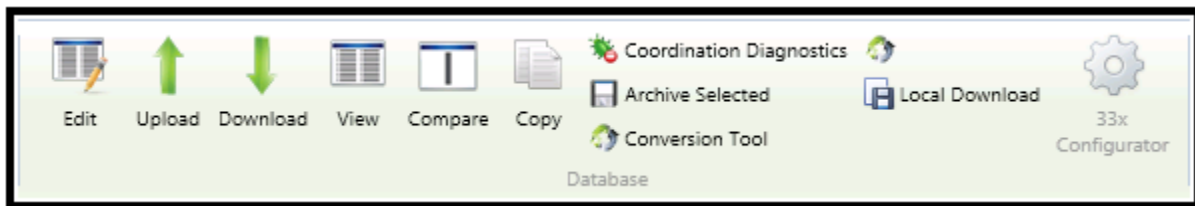
### 3.4.4 Actions



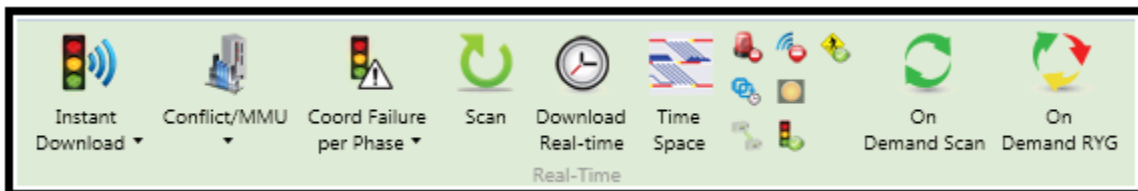
The *Actions* are listed on the Selection Ribbon at the top of the screen. Actions allow you to operate on single or multiple databases selected in the *Overview* pane (GIS map or List). *Actions* can be performed by navigating to the Selection Ribbon or “right-clicking” on the main Overview pane. You may return to the list of databases at any time by re-selecting *Home* or by closing the selected action window.

Actions that are NOT PERMITTED by the combination of selected controllers will be automatically “Grayed Out” by **ATMS**.

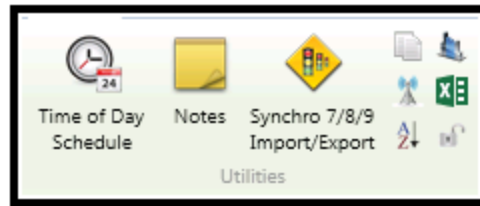
The *Database* actions manage the controller and master databases and allow an operator to Upload/Download databases to field devices. **ATMS** maintains separate database files that protect the permanent database downloaded to the field unit from the standard (edit) copy. You may also upload a controller to a separate database file and perform Compare and Copy actions to isolate manual changes made to the database in the field. Coordination Diagnostics are provided as a tool in this section to identify improper coordination programming in any of the controller’s eight (8) databases. You can also download database files to a local directory vial the Local Download selection.



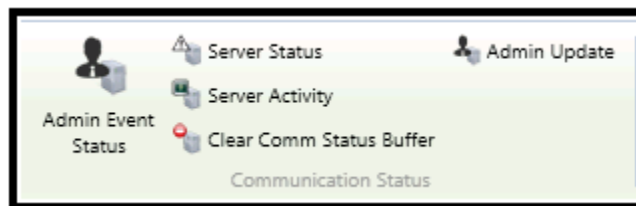
*Real-Time* actions provide status information from field devices, download manual patterns, preemptions and special functions to the field, synchronize controller & Opticom clocks, collect MMU reports, collect Coord Failure data, remotely reset a controller’s failed coordinator, and generate Time-Space diagrams.



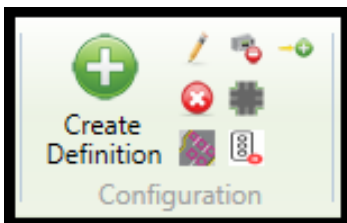
*Utility* actions allow the user to view time-of-day schedules in the field controllers by day, week and month. A *Notes* utility maintains a text file for each database for documentation purposes and *Documents* (external files such as .dwg or .pdf) may be also attached and indexed to a controller database(s). *Notes* and *Documents* may be viewed in the *Details* pane under *Selected Details* tab at the bottom window of the Home Page. A user can text-message other on-line users with the *Broadcast* Message feature. A utility is also provided to import and export *Synchro 7*-based timing, phasing, and counts.



*Communication Status* actions allows the user to monitor the Communication Server and Administrator’s activity as well as clearing the Communications status buffer.



*Configuration* actions are used to create and edit controller and master *Definitions* in the system. System detectors may be used to estimate turning movement counts and estimate congestion in the system. *Configuration* utilities are provided to associate detectors and phases in the controllers with the *Synchro* system model. *User Defined Detector Groups* combine individual lane detectors to create count stations for estimating ADT (average daily traffic) on roadway segments.



All Action functions can also be performed by “right clicking” from the GIS map or List view selections. The available Action functions will appear in a balloon, which corresponds to the main Action window on the upper left of the Home Page.

### 3.5 Overview of the Definitions Module

The *Definitions* module is used to configure the system, create and maintain user logins and privileges, schedule events that determine the polling frequency in the system, and define system devices.

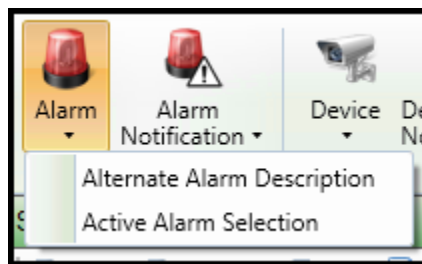
The System Administrator will typically have user access for all features in the system including the responsibility of defining individual *User* access and assigning passwords into the system. Other users may have full or partial access rights assigned by the System Administrator(s) under *Edit User Properties*. It is recommended that only the System Administrator(s) have *Edit User Properties* enabled to prevent users from changing their own system access and control.

The System Administrator can also create *Jurisdictions* to partition access to the system by other agencies or by departments. *User* access and control can be limited by jurisdiction for specific system devices as well as level of control.

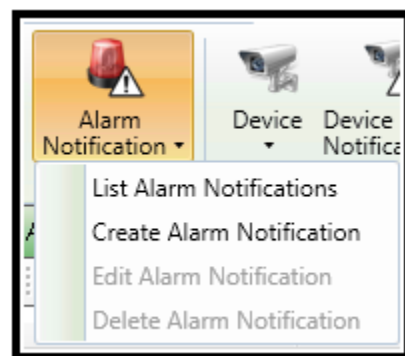
Below is the Selection Ribbon for the Definitions module.



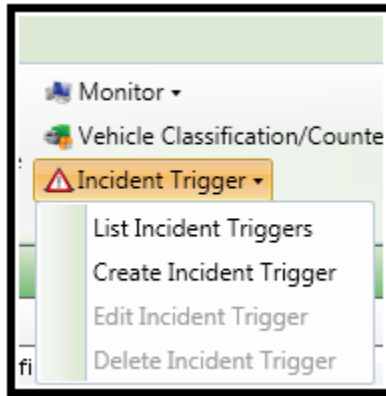
*Alarm* allows the user to customize the display of alarms that are sent to the user. The user can change the name of each alarm or the color and priority of alarms that are displayed to the overview screen.



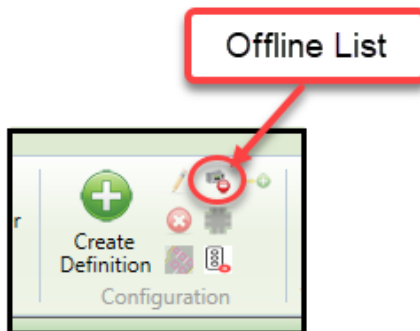
*Alarm Notifications* generate system responses to specified controller alarms polled by the system. *Alarm Notifications* are created to notify users via e-mail, pagers or WEB services when specified alarms are detected.



*Alarm Incidents* are status messages used to notify users about specified alarms whereas *Incident Triggers* are control messages that override the normal operation of other controller(s), cameras, and CMS signs in the system when specified alarms are detected by a specific controller or a congestion threshold has been reached. Incident Triggers can use either Alarm Triggers or Congestion Triggers to generate the control message. *Alarm Triggers* are created to send a triggered reaction such as a pattern change or preemption to a controller or group of controllers, or a Camera or CMS/DMS when a specified alarm is detected. *Congestion Triggers* are created to send a triggered reaction such as a pattern change or preemption to a controller or group of controllers, or camera or CMS/DMS when a specified volume or occupancy threshold is exceeded.



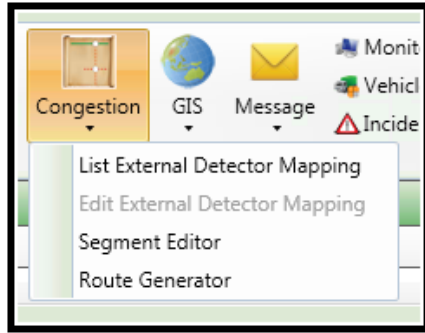
If a controller is going to be out of communication with the system for an extended period, it can be assigned to the *Controller Offline* list. The system uses this list to skip polls to offline intersections and improve communication bandwidth and effectiveness of the real-time system.



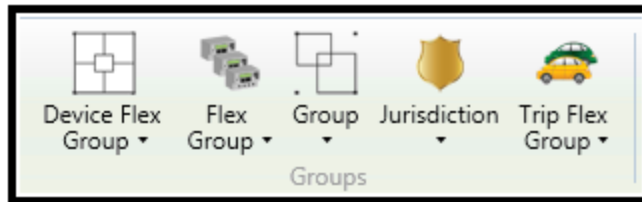
The user can define additional ITS system *Devices* (such as cameras, switches, CMS signs, etc), and *Events* (such as a construction activity and accidents), and place them on the GIS map for “point-and-click” control of the device. *Device and Event Location* assigns the symbols representing devices and events to the GIS map. In addition, arc-view shape files may be imported using the *GIS* action.



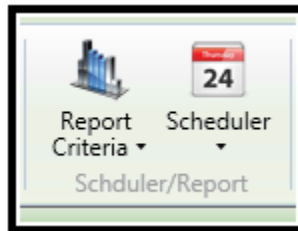
The Congestion Actions are used to develop congestion reports and real-time congestion data. For example, the *Segment Editor* allows you to assign one of the eight compass point directions to each roadway segment in the GIS model.



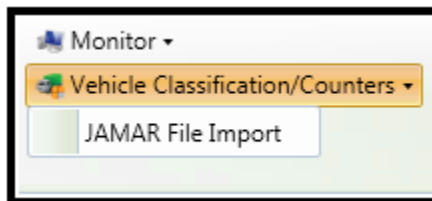
Intersection groups allow the user to perform actions and control multiple intersections. The *Definitions* module provides actions to create, edit and assign intersections to *Groups* and *Flex Groups*. A controller can only belong to one *Group*, but can be assigned to multiple *Flex Groups*.



The time-of-day *Scheduler* allows the System Administrator to define the polling for the system. Scheduled events include synchronizing the field clocks within the system, gathering alarms, etc. All system activities can be scheduled by time-of-day and executed by the system without operator intervention. *Report Criteria* is used to automate reports by scheduling them to be sent via e-mail.

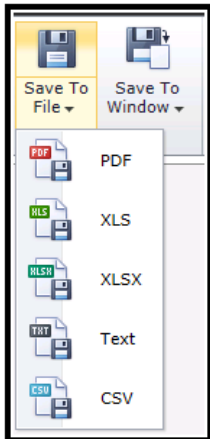


The *Vehicle Classification/Counters* allows the import of JAMAR counter files into **ATMS** database for report generation in the *Reports* Module.



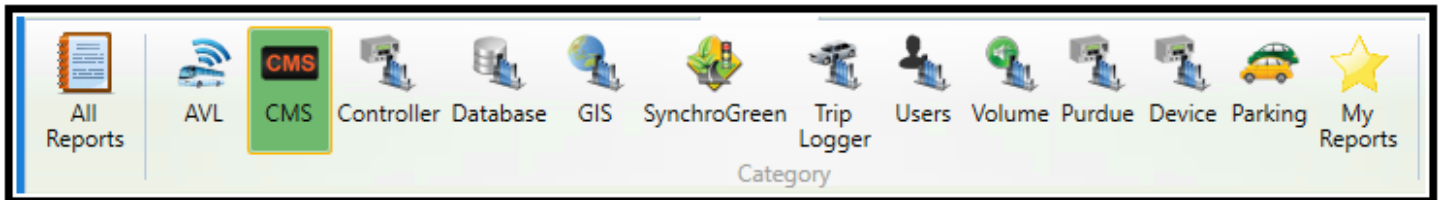
The *Definitions* module is fully documented in Chapter 6.

### 3.6 Overview of the Reports Module



The *Reports* module allows the user to query the system databases and produce Dev Express that can be printed or saved in one of the following formats depending on the report tool:

- Adobe PDF
- Microsoft Excel (XLS, XLSX)
- Text File (.TXT)
- Comma Separated Values format (CSV)



Reports are grouped in the following *Report Categories* (Based on Agency acquired Modules):

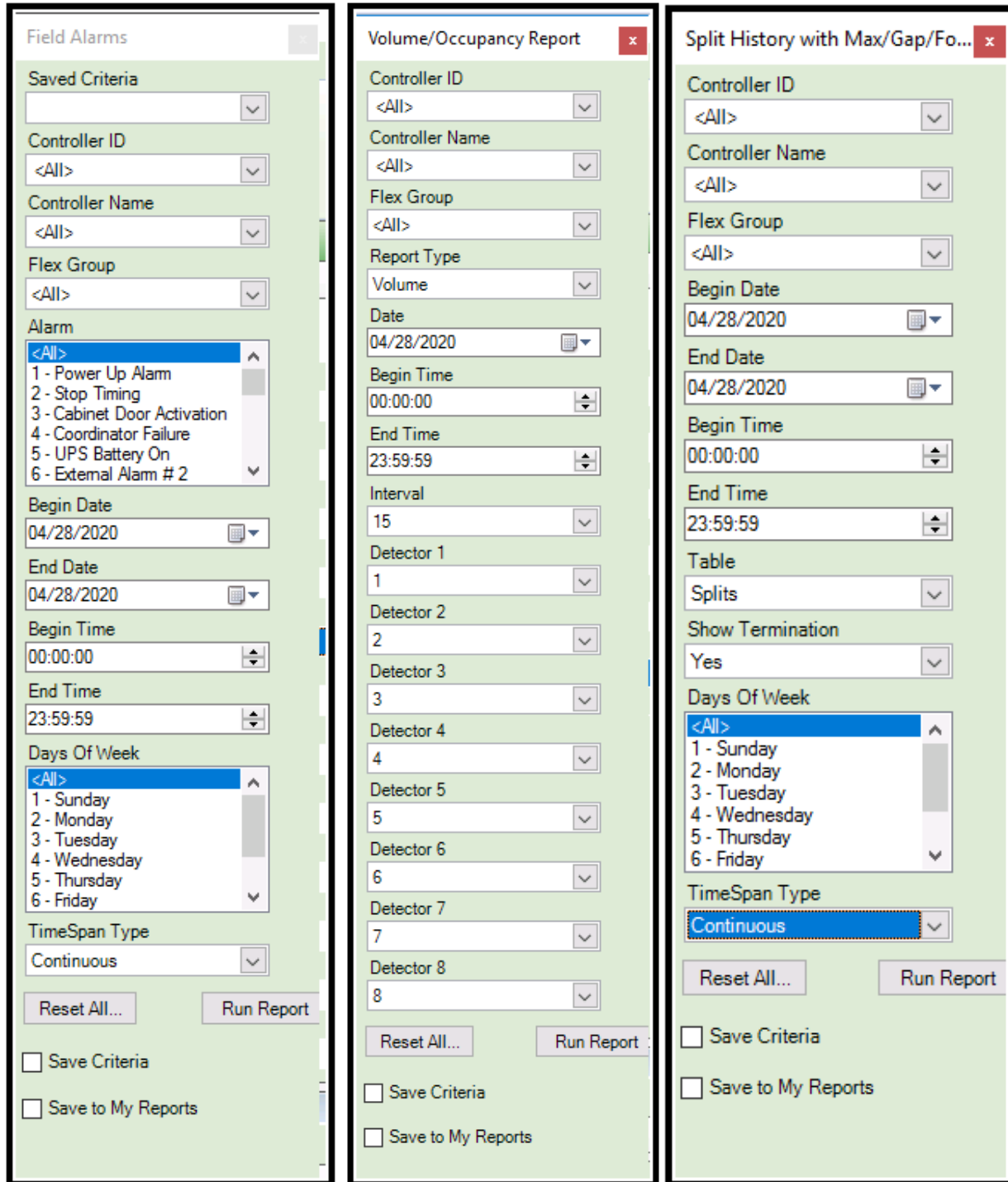
- AVL data (Vehicles)
- CMS
- Controller
- Database
- Volume
- Users (Logins and Transactions)
- Parking
- GIS
- Purdue Logging
- SynchroGreen
- Trip Logger

**ATMS** provides a robust selection of pre-formatted reports.



A specific *Report Name* may be selected by highlighting the report in the main *Overview* pane or selecting the particular Report category.

The *Report Criteria* changes based on the *Report Name* selected, with the drop-down selection windows that match the corresponding selected report type. For example, particular report is selected in the main *Overview* pane, the particular Criteria pane is brought up and displayed as shown below. Selecting a different report will modify the *Report Criteria* because the context of each report is different.

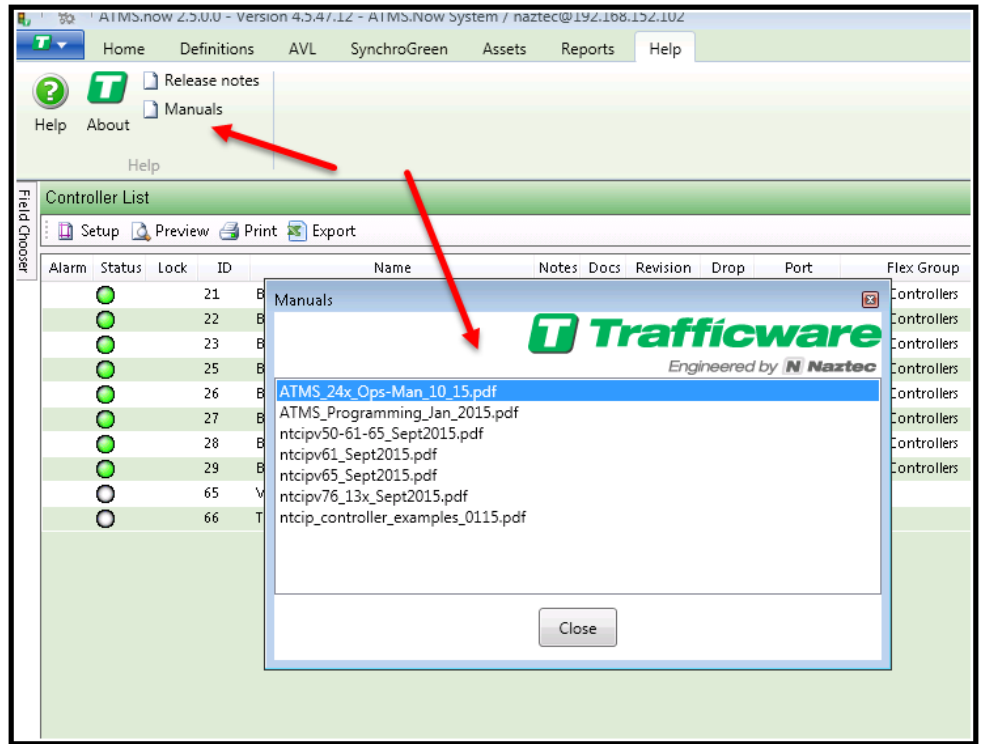


The *Reports* module is fully documented in Chapter 7.

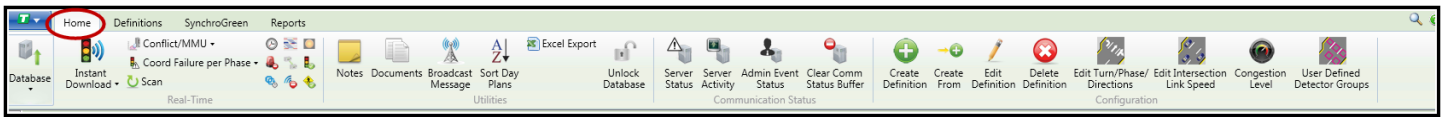
### 3.7 Help Module

In addition, a new module on the menu bar named “Help” allows the user to review release notes or place agency wide documents like controller manuals, MUTCD manuals etc. on the server to be accessed by all users. Place all manuals on the server under the directory:

“Naztec->ATMSWS->Manuals”.



# 4 Home Module – Overview



The Home Module allows the user to configure, edit and manipulate each controller’s database. In addition, Real-Time scanning of information from the field controllers and other utilities, such as coordination diagnostics are accessed from this module.

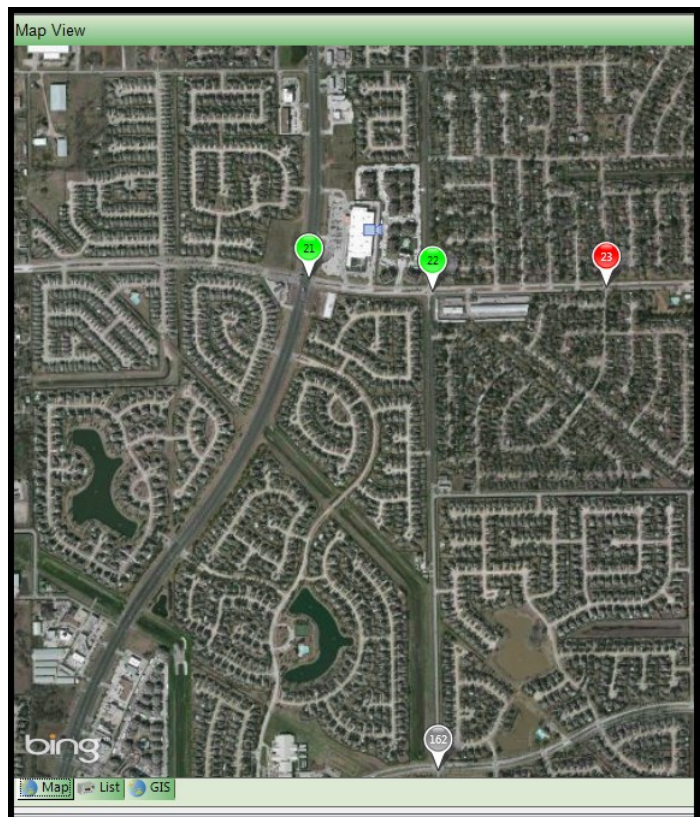
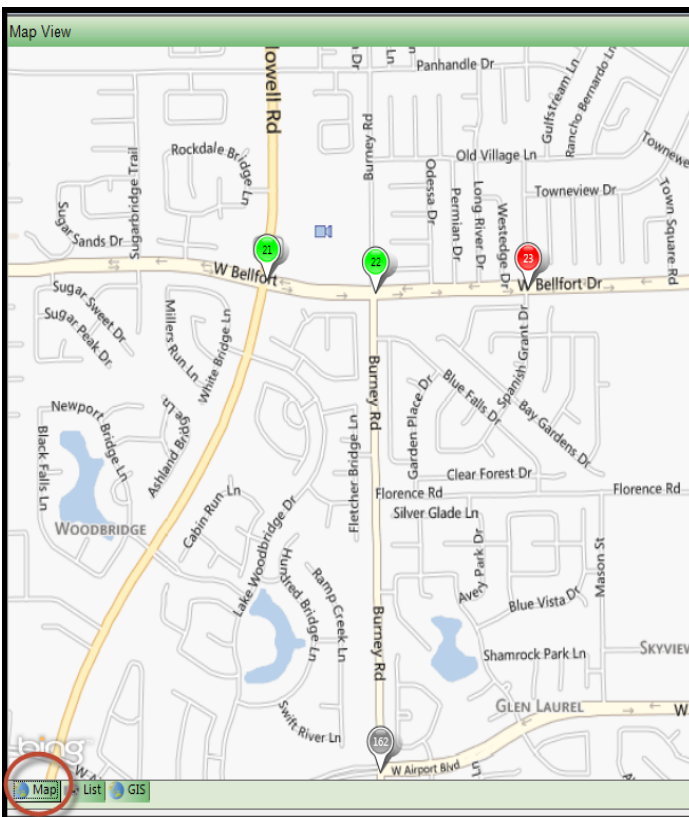
## 4.1 System Overview Pane

This section will teach you how to navigate and operate the main System Overview pane. Specific functions such as database edit, uploading, downloading, device control, etc. are discussed in this section.

The main System Overview Pane displays system information in two different tabbed displays, the *Controller List view* and *GIS Map view*. Each view is monitored in real-time and the displayed status is updated as each device is polled.

Both the *List view* pane and the *GIS view* pane are correlated with each other. This means that as the user selects a controller from either the *List*, *Map* or *GIS*, the other will correspond with the selection on its own pane. This allows the user to toggle between the views to allow for a most powerful use of the system monitoring and controls. See the following two figures to see simultaneous corresponding selections from the *Map*, *List* and *GIS* views.

Selecting the Map Tab will display the controllers via the user selectable a Bing Graphical Map or Bing Satellite Map as shown below.



The List Tab provides an easy tabular representation of the controllers of the agency system.

Field Chooser

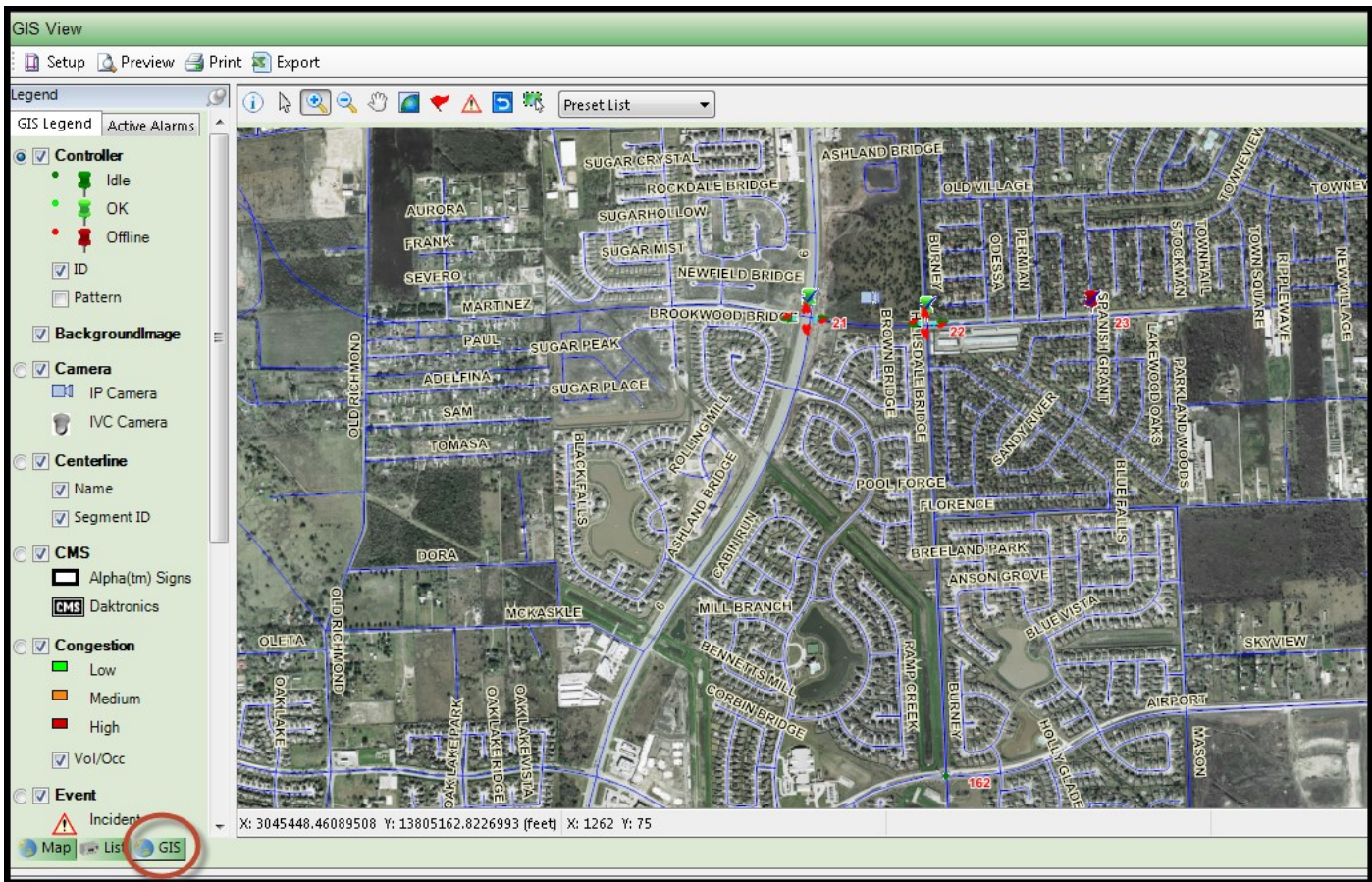
Controller List

Setup Preview Print Export

Alarm	Status	ID	Name	Notes	Revision	Drop	Port	Flex Group	Group	Type	IP Address
<input type="radio"/>		1	Version76 test	<input type="checkbox"/>		1	E-NET-5001			NTCIP 76.x ATC RS-232	
<input type="radio"/>		3	Dulles and Viking	<input type="checkbox"/>		2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		4	Dulles and Broadmoor	<input type="checkbox"/>		2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		5	Dulles and Ave E	<input type="checkbox"/>		2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		6	Dulles and Lexington	<input type="checkbox"/>		2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		7	Dulles and Plantation Colony	<input type="checkbox"/>		2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		8	Dulles and Cartwright	<input type="checkbox"/>		2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		21	Bench 2070 V76 ENET - 21	<input type="checkbox"/>	76.8h	1	E-NET-5001	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.191
<input type="radio"/>		22	Bench 2070 V76 ENET - 22	<input type="checkbox"/>	76.8k	2	E-NET-5002	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.192
<input type="radio"/>		23	Bench NTCIP TS2V61.x ENET - 23	<input checked="" type="checkbox"/>		3	E-NET-5003			NTCIP 61.x TS2 Ethernet	192.168.104.193
<input type="radio"/>		24	Bench ATC V76 ENET - 24	<input type="checkbox"/>		4	E-NET-5004			NTCIP 76.x ATC Ethernet	192.168.104.194
<input type="radio"/>		25	Bench V76 ATCENET- ID 25	<input type="checkbox"/>	76.8f	5	E-NET-5005	Bench Controllers		NTCIP 76.x ATC Ethernet	192.168.104.195
<input type="radio"/>		148	Bench 2070	<input type="checkbox"/>		2	E-NET-5002			NTCIP 65.x 2070 Ethernet	192.168.101.201
<input type="radio"/>		149	Bench TS2	<input type="checkbox"/>		1	E-NET-5001			NTCIP 61.x TS2 Ethernet	192.168.101.102
<input type="radio"/>		150	90A and SH6	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		151	90A and Ulrich	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		152	90A and Brooks	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		153	Brooks and Guenther	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		154	90A and Bayview	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		155	90A and Savoy	<input type="checkbox"/>		1	E-NET-5001		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		156	90A and Eldridge	<input type="checkbox"/>		2	E-NET-5002		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		157	90A and Industrial	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		158	90A and Dairy Ashford	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		159	90A and Gillingham	<input type="checkbox"/>		3	E-NET-5003		Hwy 90 System	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		160	Burney and Voss	<input type="checkbox"/>		1	E-NET-5001			NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		161	US 90A and Central Prison	<input type="checkbox"/>		3	E-NET-5003		90A	NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		162	Burney and West Airport	<input type="checkbox"/>		1	E-NET-5001			NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		163	Burney and Vinehill Drive	<input type="checkbox"/>		1	E-NET-5001			NTCIP 61.x TS2 Ethernet	192.168.101.200
<input type="radio"/>		171	US 90 and Williams Town	<input type="checkbox"/>		3	E-NET-5003		Williams Town	NTCIP 61.x TS2 Ethernet	192.168.101.200

Map List GIS

The *GIS* Tab displays the same controllers with a status-colored “Push-Pin” as the list “Highlights” the same intersections on the *List* view.



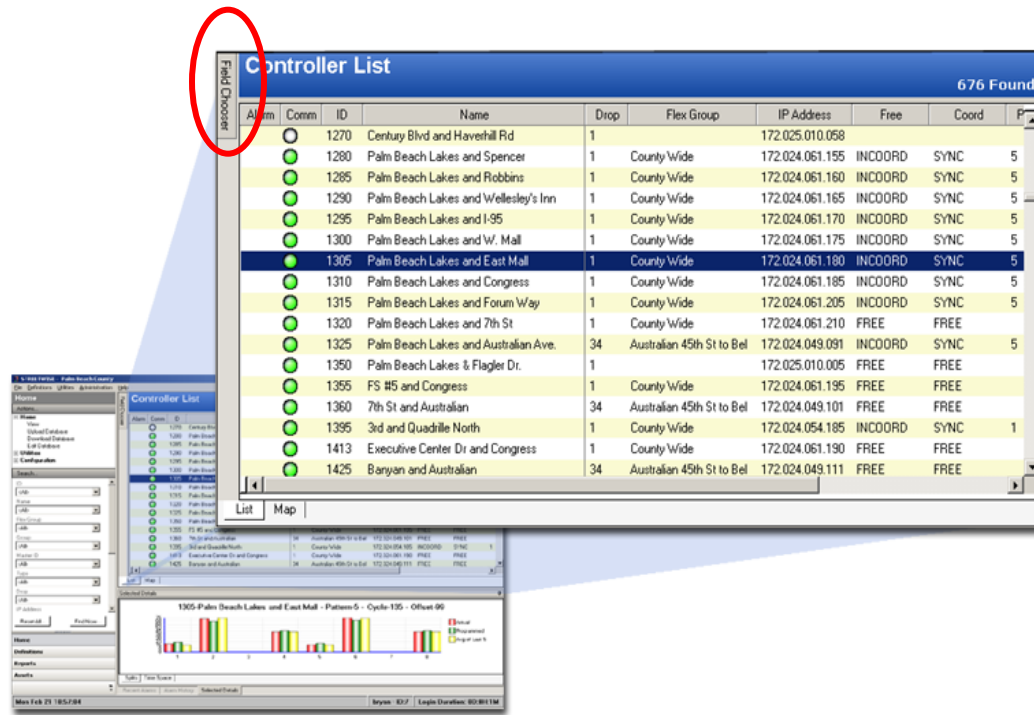
The **ATMS** system provides a memorization utility within the software called “stickiness”. This “stickiness” keeps track of the screen’s setup and last navigated parameters so when the user returns to a pane after leaving it to perform another task, **ATMS** will return to the same screen and data parameters displayed.

**ATMS** provides a re-sizeable window Panes to provide the most flexible use of screen space through a single screen. The System Overview Pane is re-sizeable by grabbing the pane bar on the bottom of the pane window and dragging it to the desired Pane size. This feature allows the System Overview Pane to share space with the System Details Pane on the bottom portion of the screen.

## 4.2 List View

The *List view* provides a real-time, single-screen snapshot of the core controller input, output, timing, and communication status parameters. The specific controllers that are displayed on the *Controller List* view are directly controlled by selection activity from both the *Search Engine* and the *GIS Map*. Listed controllers (not highlighted) can be narrowed by any search criteria such as Groups, Flex Groups, Drop, COORD status, etc. The displayed fields are determined on a user-by-user basis by selecting them in the *Field Chooser*. These display fields are customizable by dragging and dropping them in the order the user selects.

Any system control *Action* can be performed within the *List View*.



All real-time status for detector inputs or phase outputs is gathered during the “Full Status” polling performed by the **ATMS** “Scheduler”.

Field Chooser		Controller List																				
		Alarm	Status	Lock	ID	Name	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16
			●		21	Bench 2070 V76 ENET - 21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			●		22	Bench 2070 V76 ENET - 22	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			●		23	Bench NTCIP TS2V61.x ENET - 23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			●		24	Bench ATC V76 ENET - 24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Field Chooser		Controller List																														
		Alarm	Status	Lock	ID	Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10
			●		21	Bench 2070 V76 ENET - 21	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
			●		22	Bench 2070 V76 ENET - 22	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
			●		23	Bench NTCIP TS2V61.x ENET - 23	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
			●		24	Bench ATC V76 ENET - 24	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

## 4.2.1 Field Chooser

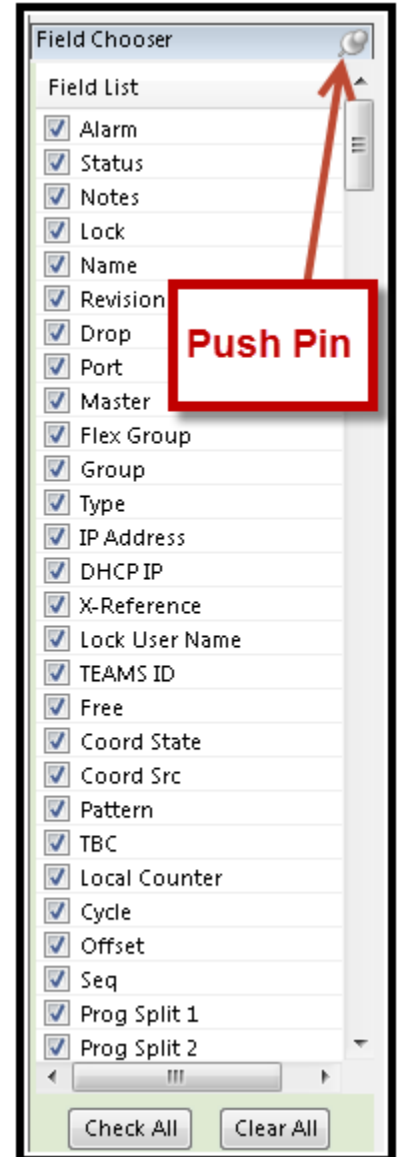
The *List* view pane includes a display utility called the “*Field Chooser*”, as does the main controller timing screens. The *Field Chooser* allows the user to customize the displayed data columns in the *Controller List* pane.

The user enables the column to be displayed or hidden by checking or un-checking the box next to the column name. The checked boxes will be immediately displayed in the *Controller List* pane. All parameters of the system are monitored in real-time, meaning that even if a box is un-checked, **ATMS** is still bringing back real-time information for that parameter. If database parameters are unchecked, finding them in the database at a later time can be extremely difficult. It is recommended to use this feature with caution.

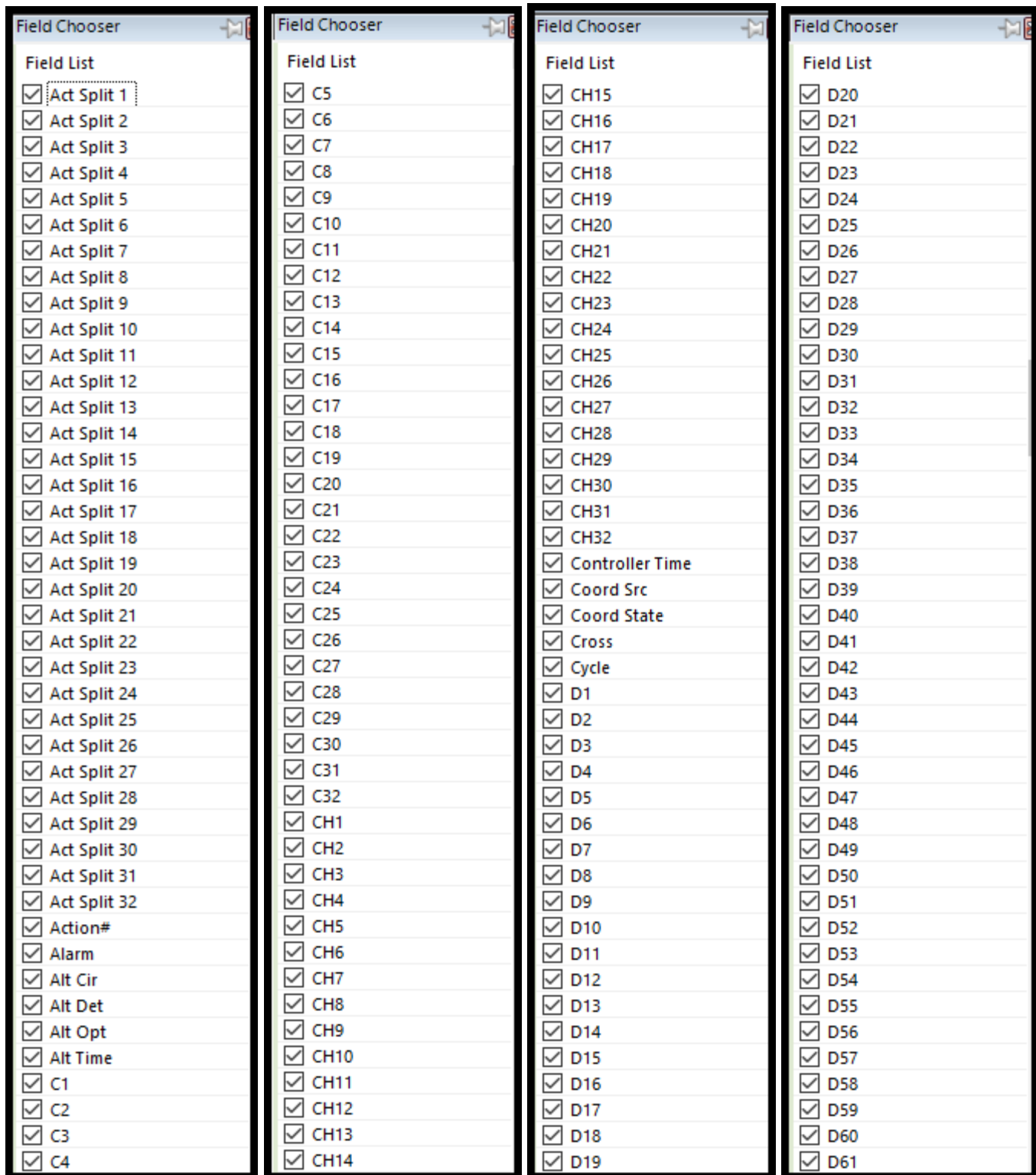
**ATMS** remembers the column preferences of each user with its “stickiness” feature that is embedded in the software, displaying the “last used” fields of data when returning to the screen.

Field Chooser slides out initially to let the user know it’s there, and then it hides itself to provide as much screen real estate to the grid.

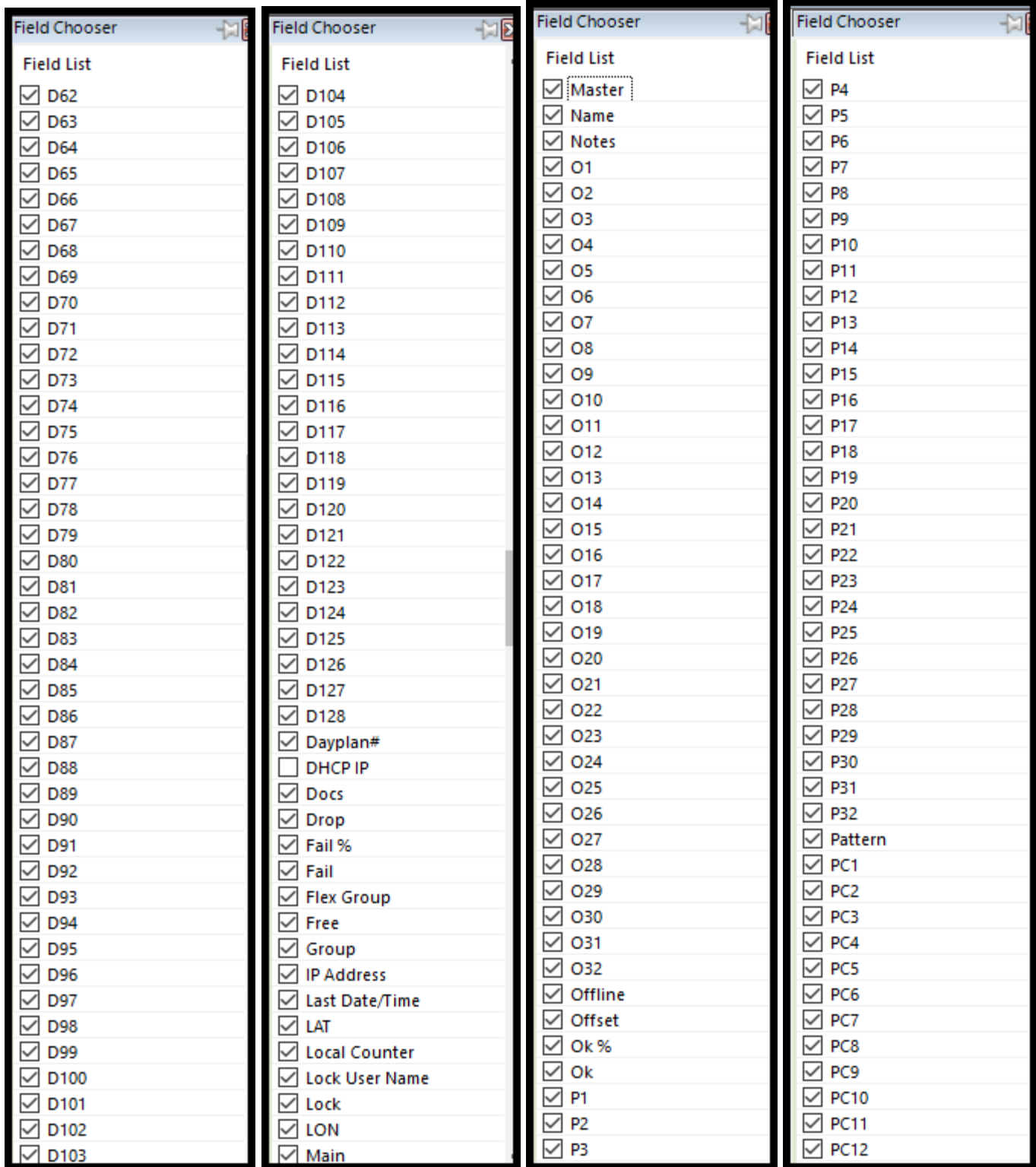
The *Field Chooser* can be “pinned” so the window will stay visible. This is allowed by a slight re-sizing of the main *Controller List* in the *List view* window. The pin location is circled in the display on the right.



The following shows the various selections that can be displayed on the overview screen.







Field Chooser

Field List

- PC13
- PC14
- PC15
- PC16
- PC17
- PC18
- PC19
- PC20
- PC21
- PC22
- PC23
- PC24
- PC25
- PC26
- PC27
- PC28
- PC29
- PC30
- PC31
- PC32
- Ped 1
- Ped 2
- Ped 3
- Ped 4
- Ped 5
- Ped 6
- Ped 7
- Ped 8
- Ped 9
- Ped 10
- Ped 11
- Ped 12
- Ped 13
- Ped 14
- Ped 15
- Ped 16
- Ped 17
- Ped 18
- Ped 19
- Ped 20
- Ped 21
- Ped 22

Field Chooser

Field List

- Ped 23
- Ped 24
- Ped 25
- Ped 26
- Ped 27
- Ped 28
- Ped 29
- Ped 30
- Ped 31
- Ped 32
- PORT
- Preempt
- Prog Split 1
- Prog Split 2
- Prog Split 3
- Prog Split 4
- Prog Split 5
- Prog Split 6
- Prog Split 7
- Prog Split 8
- Prog Split 9
- Prog Split 10
- Prog Split 11
- Prog Split 12
- Prog Split 13
- Prog Split 14
- Prog Split 15
- Prog Split 16
- Prog Split 17
- Prog Split 18
- Prog Split 19
- Prog Split 20
- Prog Split 21
- Prog Split 22
- Prog Split 23
- Prog Split 24
- Prog Split 25
- Prog Split 26
- Prog Split 27
- Prog Split 28
- Prog Split 29
- Prog Split 30

Field Chooser

Field List

- Prog Split 31
- Prog Split 32
- R1 Max
- R1 Min
- R1 Ped
- R2 Max
- R2 Min
- R2 Ped
- R3 Max
- R3 Min
- R3 Ped
- R4 Max
- R4 Min
- R4 Ped
- R5 Max
- R5 Min
- R5 Ped
- R6 Max
- R6 Min
- R6 Ped
- R7 Max
- R7 Min
- R7 Ped
- R8 Max
- R8 Min
- R8 Ped
- Revision
- Schedule#
- Seq
- SP Count Down R1
- SP Count Down R2
- SP Count Down R3
- SP Count Down R4
- SP Count Down R5
- SP Count Down R6
- SP Count Down R7
- SP Count Down R8
- Split Index
- Status
- TBC
- TEAMS ID
- Temp 1

Field Chooser

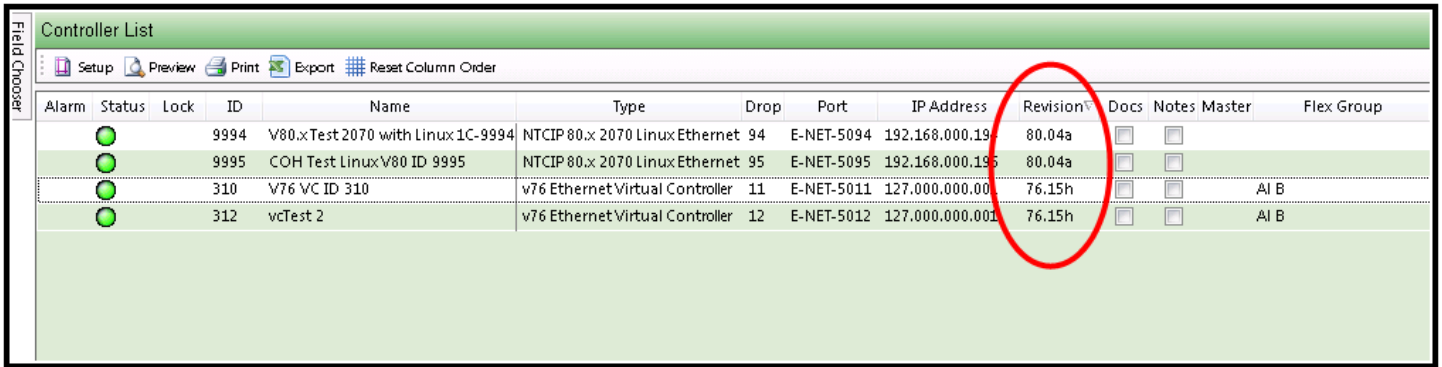
Field List

- Temp 2
- Time Diff (Sec.)
- Total
- Type
- X\_COORD
- X-Reference
- Y\_COORD
- Zone Active

## 4.2.2 Column Order

The Order of columns are fully definable by the user. The user can drag a column anywhere on the list view overview pane and it will remain persistent.

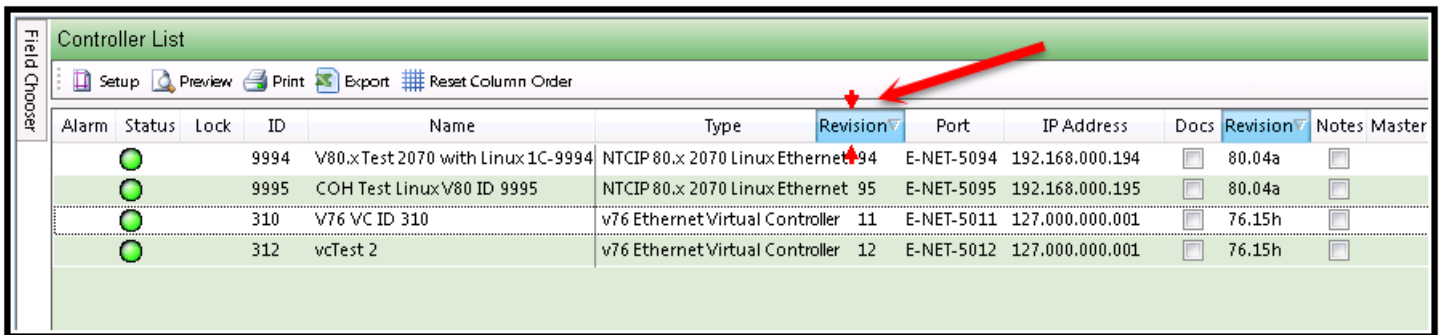
Consider moving the column named Revision as shown below:



The screenshot shows a table titled "Controller List" with the following columns: Alarm, Status, Lock, ID, Name, Type, Drop, Port, IP Address, Revision, Docs, Notes, Master, and Flex Group. The "Revision" column is circled in red.

Alarm	Status	Lock	ID	Name	Type	Drop	Port	IP Address	Revision	Docs	Notes	Master	Flex Group
	<input checked="" type="checkbox"/>		9994	V80.xTest 2070 with Linux 1C-9994	NTCIP 80.x 2070 Linux Ethernet	94	E-NET-5094	192.168.000.194	80.04a	<input type="checkbox"/>	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>		9995	COH Test Linux V80 ID 9995	NTCIP 80.x 2070 Linux Ethernet	95	E-NET-5095	192.168.000.195	80.04a	<input type="checkbox"/>	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>		310	V76 VC ID 310	v76 Ethernet Virtual Controller	11	E-NET-5011	127.000.000.001	76.15h	<input type="checkbox"/>	<input type="checkbox"/>		AI B
	<input checked="" type="checkbox"/>		312	vcTest 2	v76 Ethernet Virtual Controller	12	E-NET-5012	127.000.000.001	76.15h	<input type="checkbox"/>	<input type="checkbox"/>		AI B

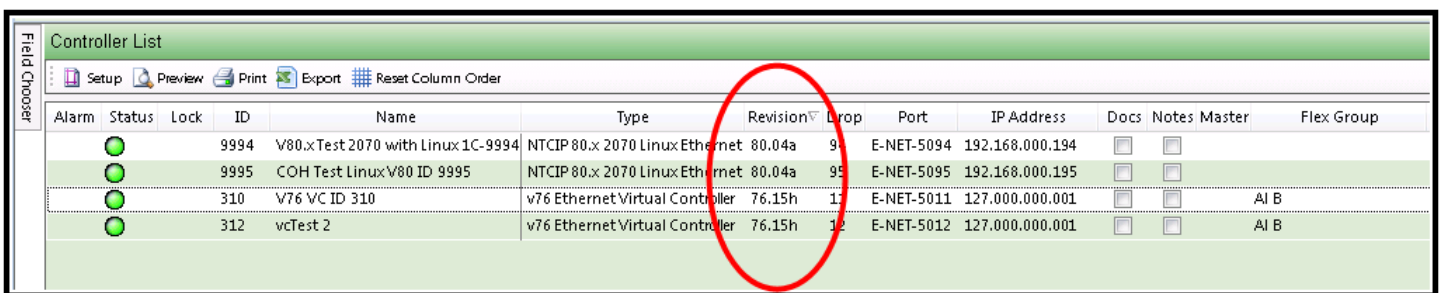
The user wants to move it next to the Type column. By left-clicking on the mouse key, the user can move it next to the Type column.



The screenshot shows the same "Controller List" table. The "Revision" column is highlighted in blue, and a red arrow points to it from the top right.

Alarm	Status	Lock	ID	Name	Type	Revision	Port	IP Address	Docs	Revision	Notes	Master	Flex Group
	<input checked="" type="checkbox"/>		9994	V80.xTest 2070 with Linux 1C-9994	NTCIP 80.x 2070 Linux Ethernet	94	E-NET-5094	192.168.000.194	<input type="checkbox"/>	80.04a	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>		9995	COH Test Linux V80 ID 9995	NTCIP 80.x 2070 Linux Ethernet	95	E-NET-5095	192.168.000.195	<input type="checkbox"/>	80.04a	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>		310	V76 VC ID 310	v76 Ethernet Virtual Controller	11	E-NET-5011	127.000.000.001	<input type="checkbox"/>	76.15h	<input type="checkbox"/>		AI B
	<input checked="" type="checkbox"/>		312	vcTest 2	v76 Ethernet Virtual Controller	12	E-NET-5012	127.000.000.001	<input type="checkbox"/>	76.15h	<input type="checkbox"/>		AI B

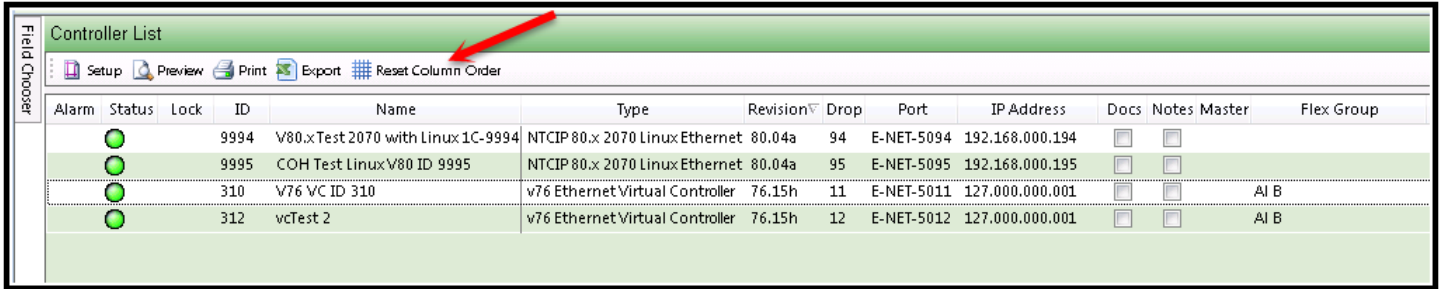
Once the user stops the Left-click of the mouse, this column will now be anchored to the List view and remain there everytime you log in under that user name.



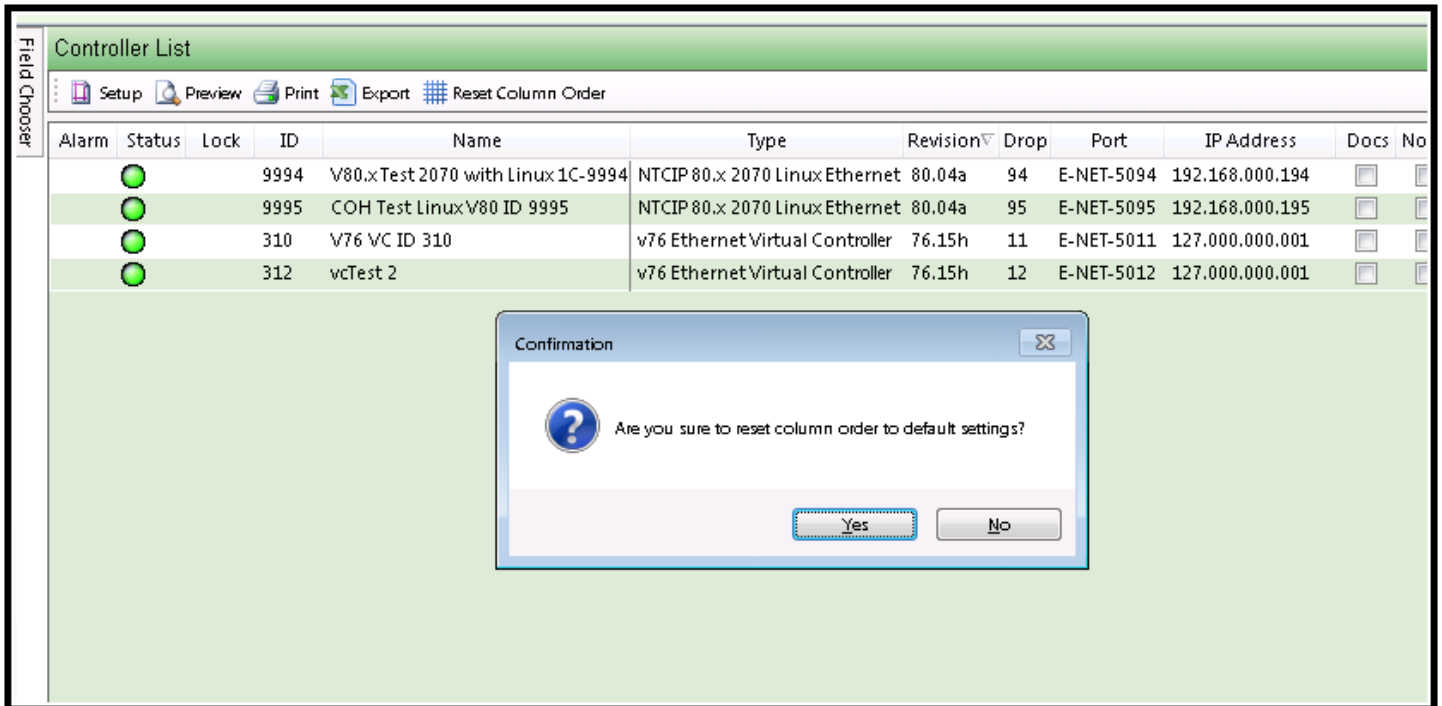
The screenshot shows the "Controller List" table with the "Revision" column circled in red, indicating it is now permanently anchored in its new position.

Alarm	Status	Lock	ID	Name	Type	Revision	Drop	Port	IP Address	Docs	Notes	Master	Flex Group
	<input checked="" type="checkbox"/>		9994	V80.xTest 2070 with Linux 1C-9994	NTCIP 80.x 2070 Linux Ethernet	80.04a	94	E-NET-5094	192.168.000.194	<input type="checkbox"/>	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>		9995	COH Test Linux V80 ID 9995	NTCIP 80.x 2070 Linux Ethernet	80.04a	95	E-NET-5095	192.168.000.195	<input type="checkbox"/>	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>		310	V76 VC ID 310	v76 Ethernet Virtual Controller	76.15h	11	E-NET-5011	127.000.000.001	<input type="checkbox"/>	<input type="checkbox"/>		AI B
	<input checked="" type="checkbox"/>		312	vcTest 2	v76 Ethernet Virtual Controller	76.15h	12	E-NET-5012	127.000.000.001	<input type="checkbox"/>	<input type="checkbox"/>		AI B

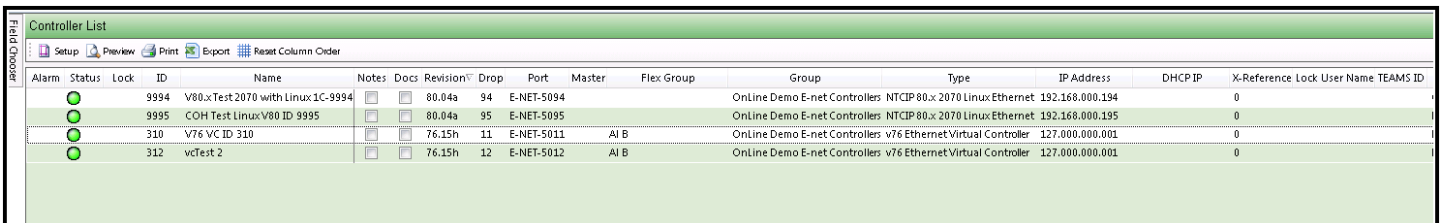
If the user wants to reset to the default column order, simply hit the “Reset Column Order” Button as shown below.



A confirmation screen will be displayed .




By selecting Yes, ATMS will reset to its default column order as shown below:

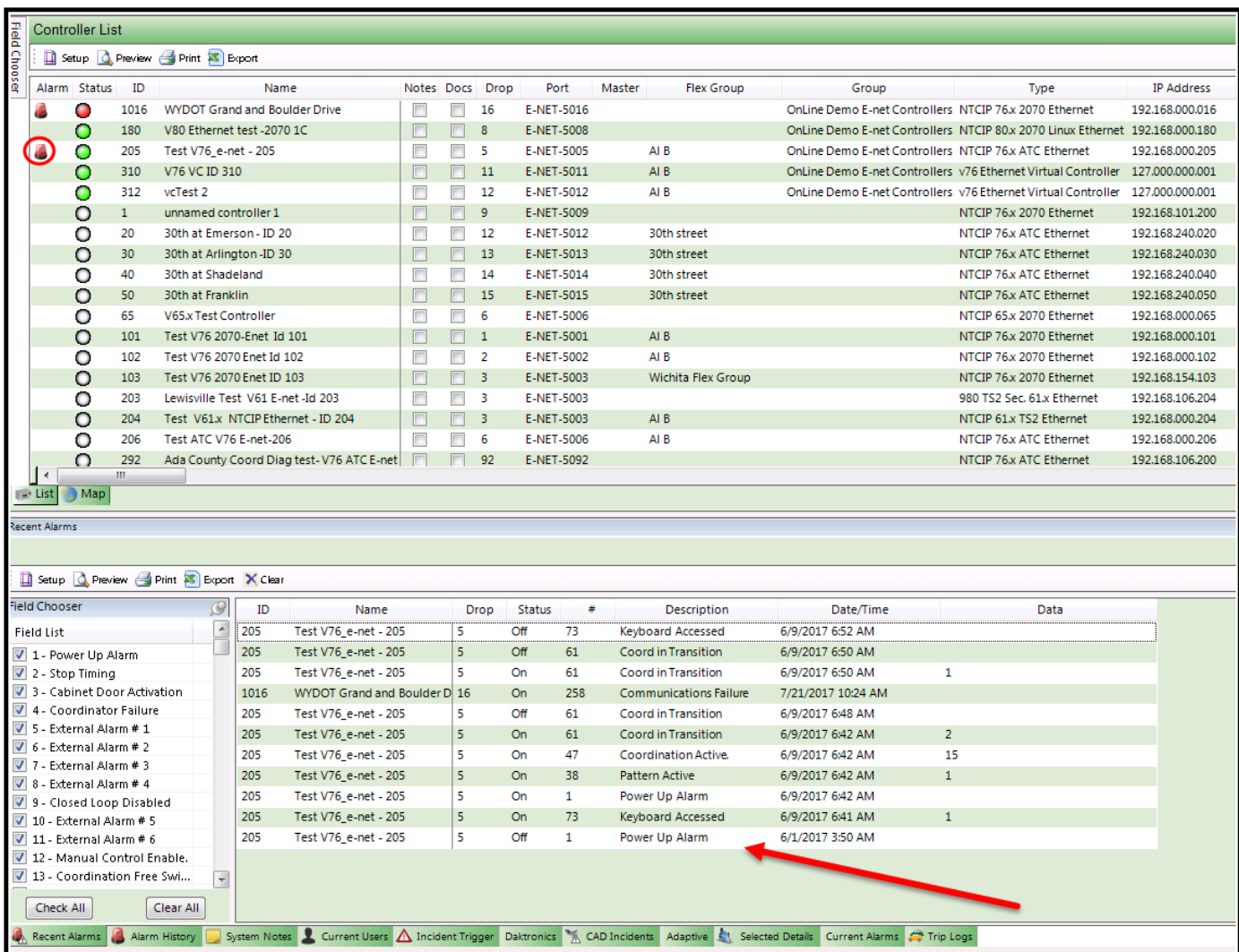


## 4.2.3 Status Columns

The *Controller List* pane of **ATMS** displays the real-time data columns from a combination of four fixed fields (Alarms, Status LED, Intersection ID#, and Intersection Name), and the selected fields from the *Field Chooser*. These four fields remain regardless of the *Field Chooser* selection, as they are critical fields. **ATMS** places a solid bar on the right of the Intersection Name, which marks the point that all of the optional fields tuck under as the slide bar views the columns to the far right. If a solid bar is not present, then all of the selected fields are capable of fitting in the window pane at the same time.

When an incoming alarm is received from the field, an alarm icon  is displayed in the first column, and simultaneously listed in the “Recent Alarms” tab of the bottom pane. To clear or “acknowledge” the alarm, highlight each of the controllers with alarms to clear, select the *Actions* pane or “right-click”, and navigate to Real Time...Clear Alarms. This will remove the alarm icon from the *List* but it will remain in the *Recent Alarms*, *Alarm History*, and *Selected Details-Alarm* tabs of the *Details* pane. If an alarm remains that is not cleared for that controller, an alarm icon will continue to be displayed on the *Controller List*.

The system administrator has the option to program automatic paging or e-mail notification of these incoming alarms under *User Definitions*, which is discussed in Chapter 6.



The screenshot displays the ATMS software interface. The top pane is titled "Controller List" and contains a table of controller information. The bottom pane is titled "Recent Alarms" and contains a table of alarm events. A red arrow points to a specific alarm entry in the Recent Alarms table.

Alarm	Status	ID	Name	Notes	Docs	Drop	Port	Master	Flex Group	Group	Type	IP Address
		1016	WYDOT Grand and Boulder Drive			16	E-NET-5016			OnLine Demo E-net Controllers	NTCIP 76.x 2070 Ethernet	192.168.000.016
		180	V80 Ethernet test -2070 1C			8	E-NET-5008			OnLine Demo E-net Controllers	NTCIP 80.x 2070 Linux Ethernet	192.168.000.180
		205	Test V76_e-net - 205			5	E-NET-5005	AI B		OnLine Demo E-net Controllers	NTCIP 76.x ATC Ethernet	192.168.000.205
		310	V76 VC ID 310			11	E-NET-5011	AI B		OnLine Demo E-net Controllers	v76 Ethernet Virtual Controller	127.000.000.001
		312	vcTest 2			12	E-NET-5012	AI B		OnLine Demo E-net Controllers	v76 Ethernet Virtual Controller	127.000.000.001
		1	unnamed controller 1			9	E-NET-5009				NTCIP 76.x 2070 Ethernet	192.168.101.200
		20	30th at Emerson -ID 20			12	E-NET-5012	30th street			NTCIP 76.x ATC Ethernet	192.168.240.020
		30	30th at Arlington -ID 30			13	E-NET-5013	30th street			NTCIP 76.x ATC Ethernet	192.168.240.030
		40	30th at Shadeland			14	E-NET-5014	30th street			NTCIP 76.x ATC Ethernet	192.168.240.040
		50	30th at Franklin			15	E-NET-5015	30th street			NTCIP 76.x ATC Ethernet	192.168.240.050
		65	V65.x Test Controller			6	E-NET-5006				NTCIP 65.x 2070 Ethernet	192.168.000.065
		101	Test V76 2070-Enet Id 101			1	E-NET-5001	AI B			NTCIP 76.x 2070 Ethernet	192.168.000.101
		102	Test V76 2070 Enet Id 102			2	E-NET-5002	AI B			NTCIP 76.x 2070 Ethernet	192.168.000.102
		103	Test V76 2070 Enet ID 103			3	E-NET-5003	Wichita Flex Group			NTCIP 76.x 2070 Ethernet	192.168.154.103
		203	Lewisville Test V61 E-net -Id 203			3	E-NET-5003				980 TS2 Sec. 61.x Ethernet	192.168.106.204
		204	Test V61.x NTCIP Ethernet -ID 204			3	E-NET-5003	AI B			NTCIP 61.x TS2 Ethernet	192.168.000.204
		206	Test ATC V76 E-net-206			6	E-NET-5006	AI B			NTCIP 76.x ATC Ethernet	192.168.000.206
		292	Ada County Coord Diag test- V76 ATC E-net			92	E-NET-5092				NTCIP 76.x ATC Ethernet	192.168.106.200

ID	Name	Drop	Status	#	Description	Date/Time	Data
205	Test V76_e-net - 205	5	Off	73	Keyboard Accessed	6/9/2017 6:52 AM	
205	Test V76_e-net - 205	5	Off	61	Coord in Transition	6/9/2017 6:50 AM	
205	Test V76_e-net - 205	5	On	61	Coord in Transition	6/9/2017 6:50 AM	1
1016	WYDOT Grand and Boulder D	16	On	258	Communications Failure	7/21/2017 10:24 AM	
205	Test V76_e-net - 205	5	Off	61	Coord in Transition	6/9/2017 6:48 AM	
205	Test V76_e-net - 205	5	On	61	Coord in Transition	6/9/2017 6:42 AM	2
205	Test V76_e-net - 205	5	On	47	Coordination Active.	6/9/2017 6:42 AM	15
205	Test V76_e-net - 205	5	On	38	Pattern Active	6/9/2017 6:42 AM	1
205	Test V76_e-net - 205	5	On	1	Power Up Alarm	6/9/2017 6:42 AM	
205	Test V76_e-net - 205	5	On	73	Keyboard Accessed	6/9/2017 6:41 AM	1
205	Test V76_e-net - 205	5	Off	1	Power Up Alarm	6/1/2017 3:50 AM	

The *Controller List* view displays real-time status on the second column. Each LED color displays the last reported status to **ATMS**, which also corresponds to the status colors of the GIS map legend:

- GREEN                      ● - On Line and communicating
- RED                         ● - Off Line and should be communicating
- YELLOW                    ● - Intersection is in Flash
- CYAN                      ● - Intersection has reported a Coordination Failure
- PURPLE                    ● - Intersection is in Preemption
- GREY                      ● - Off Line and not being polled for status

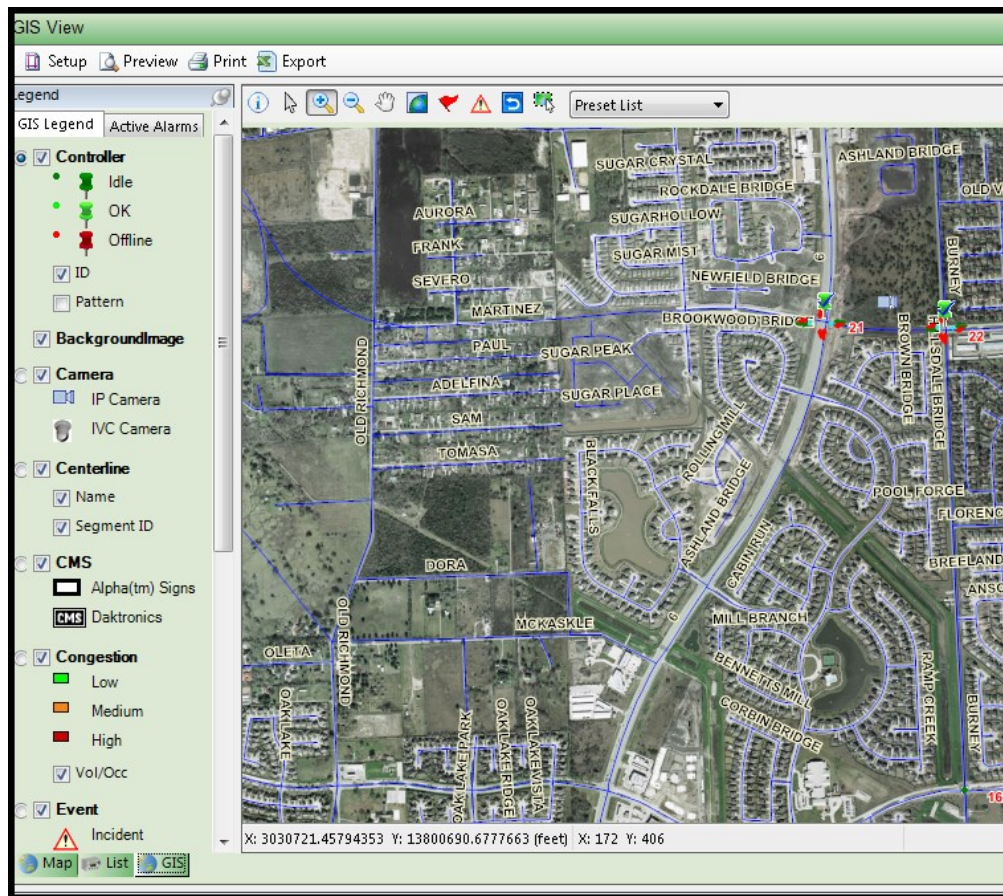
Alarm	Status	ID	Name	Notes	Docs	Drop	Port	Master
		1016	WYDOT Grand and Boulder Drive	<input type="checkbox"/>	<input type="checkbox"/>	16	E-NET-5016	
		180	V80 Ethernet test -2070 1C	<input type="checkbox"/>	<input type="checkbox"/>	8	E-NET-5008	
		205	Test V76_e-net - 205	<input type="checkbox"/>	<input type="checkbox"/>	5	E-NET-5005	
		310	V76 VC ID 310	<input type="checkbox"/>	<input type="checkbox"/>	11	E-NET-5011	
		312	vcTest 2	<input type="checkbox"/>	<input type="checkbox"/>	12	E-NET-5012	
		1	unnamed controller 1	<input type="checkbox"/>	<input type="checkbox"/>	9	E-NET-5009	

The *Controller List* view also permanently displays the Controller “ID” # and “Name” as defined in the *Controller Definitions* in the *Configuration* section of the Action pane.

#### 4.2.4 GIS Map View

The *GIS Map* view provides a real-time, GIS-based, status map display of all of the **ATMS** system elements. All standard GIS zoom functions and layer actions are integrated in the GIS map. The user can select any combination of GIS layers to be displayed at any time. The specific controllers that are displayed on the *GIS Map* view can be directly controlled by selection activity from both the *Search Engine* and the *GIS Map*. “Pinned-up” controllers can be selected and identified by any search criteria such as Groups, Flex Groups, Drop, Coord status, etc.

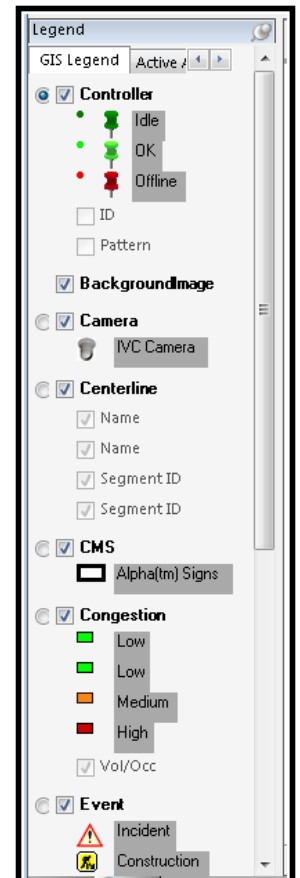
Any *Action* can be performed from the *GIS Map* tab by “right-clicking” after controller selection.



The *GIS Map* view offers a filtering *Legend*, which allows the user control over the displayed layers on the map. Each data type, such as Controllers, Scan Data, Events, Congestion, Switches, Cameras, BBS, CMS signs, Light Rail, Fire Stations, etc, can be displayed as a distinct layer on the map. Layers that represent devices that dynamically change status such as Controllers and Congestion are updated in real time as per the Scheduler programming. The real-time condition of each object on the map is color-coded according to the *Legend* and displays the corresponding color to the “Status” column of the *List View* tab.

The *Legend* offers two separate layer check boxes. The “Square” box activates the layer for viewing on the map. If this box is not checked, the layer is hidden from the display. The second is the “Round” button, which activates the layer for communication and control. Therefore, to control a layer from the GIS map, you must check both the square box to see the layer and the round button to get information or control the object.

All layers represented on the *Legend* are actively monitoring and provide control capability from the *GIS Map*. The viewing state of each distinct layer can be toggled on or off, controlling whether or not it is displayed at that moment. **ATMS** tracks the user preferences on the *GIS Map* view with the “stickiness” feature, displaying the last active layers when returning back to the *GIS Map* tab.



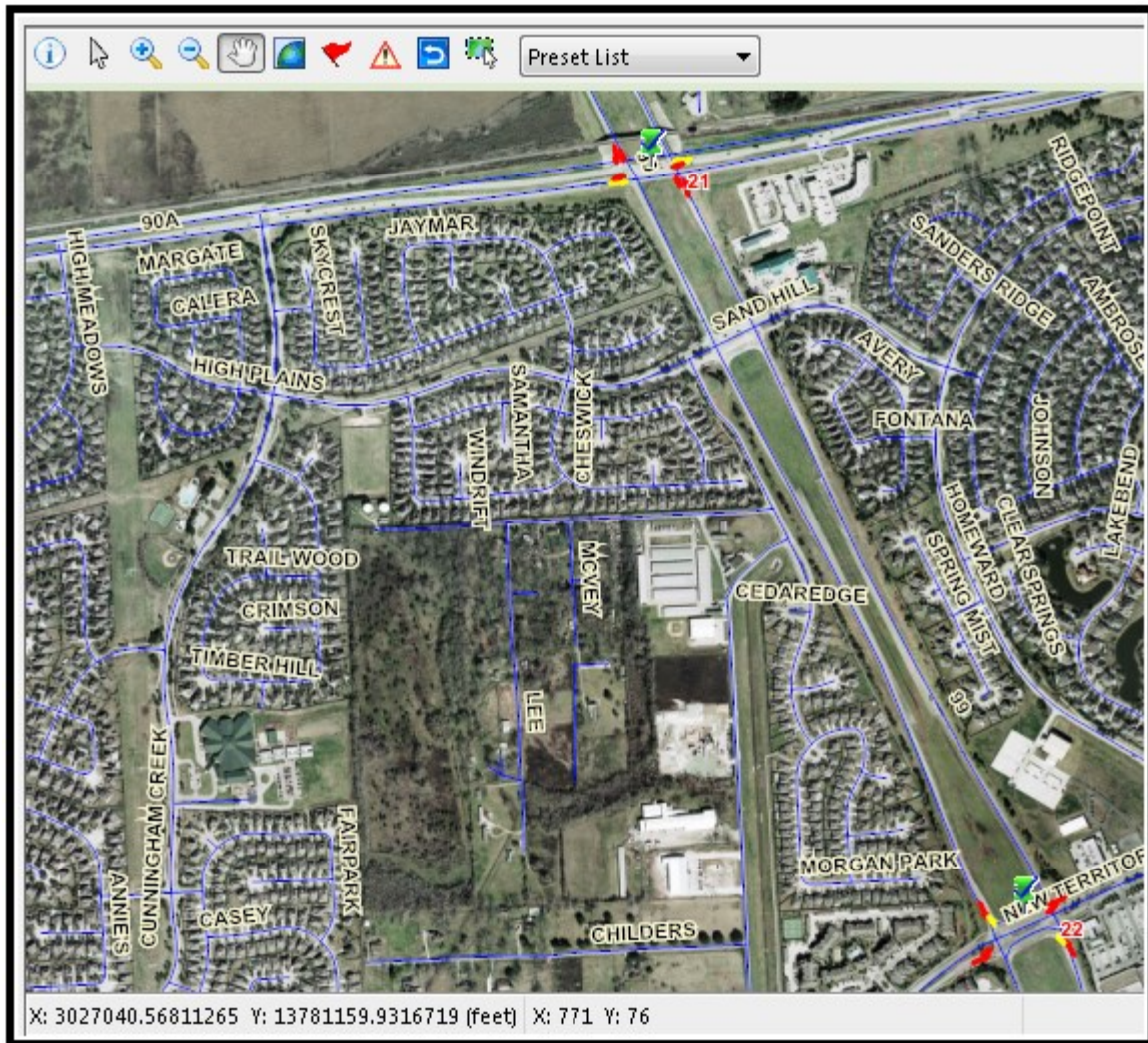
Each layer can be enabled for view and control, by user by turning it “On” or “Off” by the system administrator. Therefore, each displayed layer has been enabled for the logged in user under *Definitions...Users...Edit User Definitions*, “Legend” section, as shown in the screen below. A value of “Yes” turns the layer display on for the user, and a value of “No” turns the layer display off.

The screenshot shows a web application interface for user management. At the top, the user name 'User naztec' is displayed. Below it are three tabs: 'User Details', 'Permissions and Preferen...', and 'Jurisdiction Membership'. The 'Permissions and Preferences' tab is active, and a sub-section titled 'Permissions and Preferences' is expanded. This sub-section contains a table with two columns: 'Permission' and 'Value'. The table lists various permissions, with the 'Temp Probe' row highlighted in blue. The 'Legend' section is also expanded, showing a list of permissions and their values.

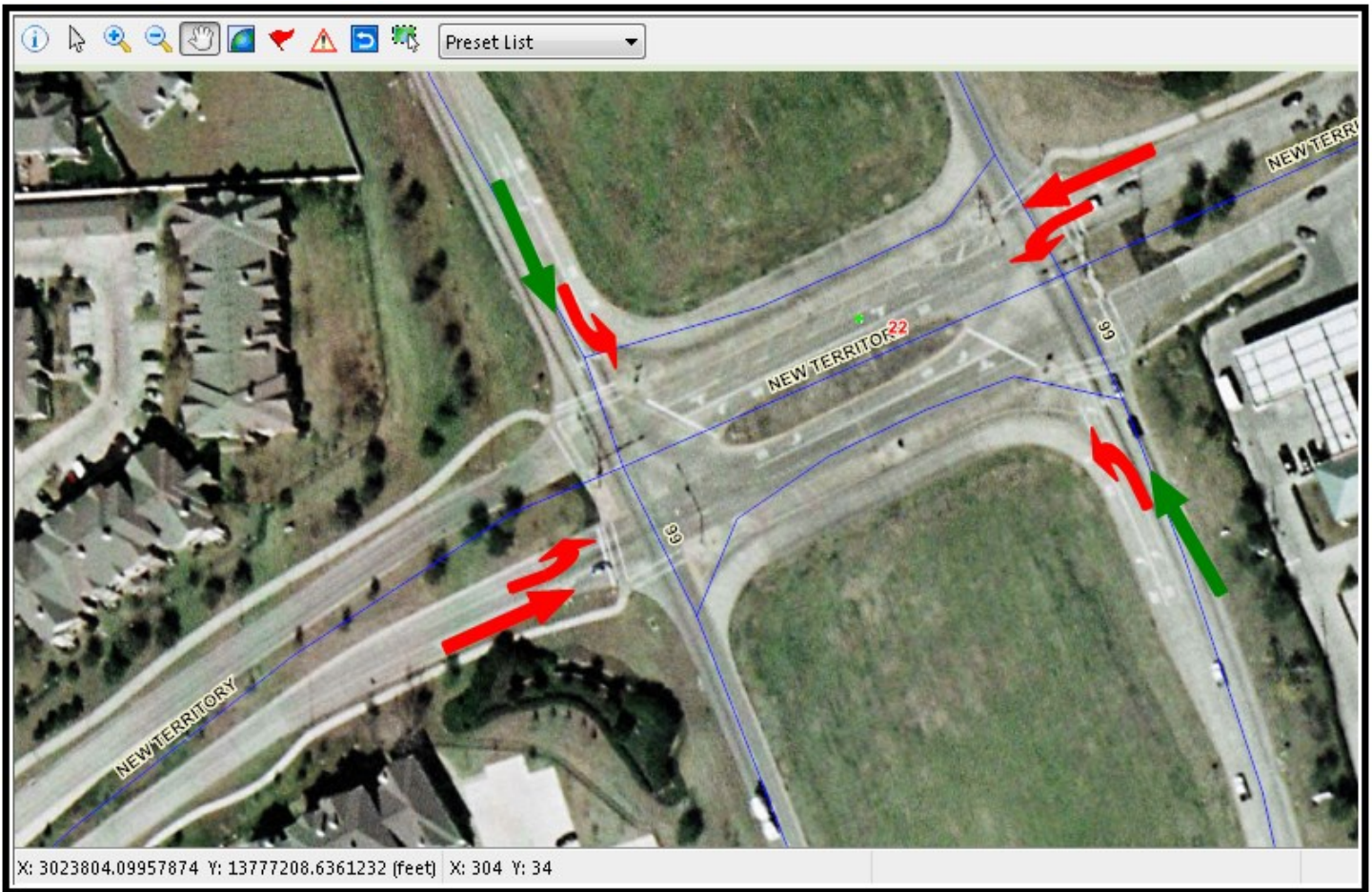
Permission	Value
Delete Landmark	No
<b>Legend</b>	
Controller	Yes
Event	Yes
Scan Data	Yes
Congestion	Yes
Temp Probe	No
Vehicle	Yes
Camera	Yes
CMS	Yes
Switch	Yes
Video Detector	Yes
Radar Detector	Yes
Alpha UPS	Yes
SynchroGreen	Yes
<b>Location</b>	
List Locations	Yes
Create Location	Yes
Edit Location	Yes
Delete Locations	Yes



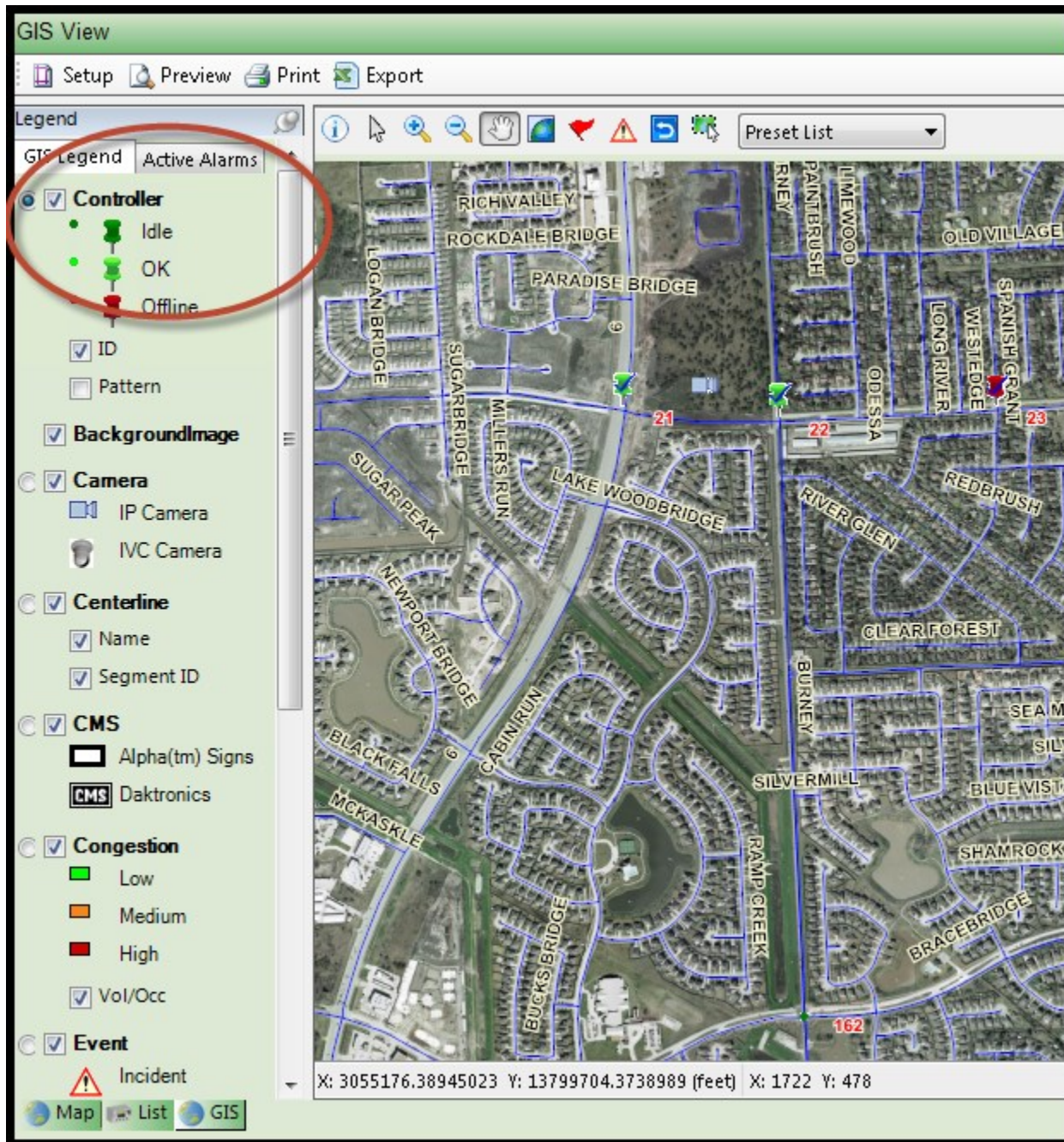
An example of a status-only layer is the “Scan Screen” layer. **ATMS** takes the real-time polling information and enables the system to display programmed signal, pedestrian, and detector information on a “Scan Screen” layer on the *GIS Map*. When set up for each intersection, the “Full Status” polling will continue collecting this information. Whether or not the Scan Screen is programmed (Chapter 6), or it is an actively displayed layer, the information is collected and ready within **ATMS**. This real-time status can be displayed for a single or multiple intersections. If the “Parameter” box is checked, the phase or detector value will appear on each scan point, such as “P2” for Phase 2, etc. The picture shown below is what can be seen when the “Scan Screen” layer is active for an arterial view.

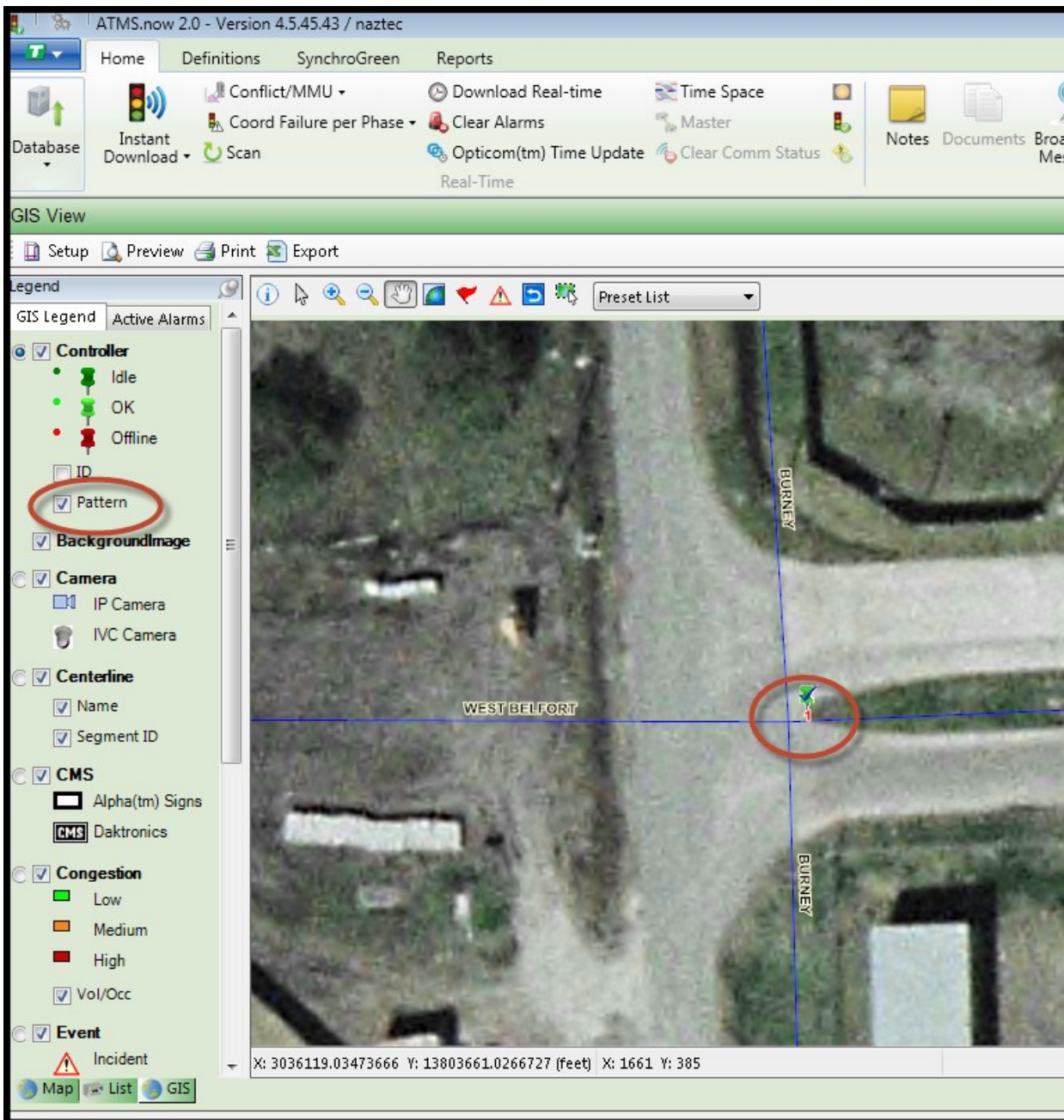


When you zoom in to a selected intersection, you can get a more detailed view. The following picture shows the scan layer with the “Parameters” box checked. Information such as controller ID or Pattern number can be displayed

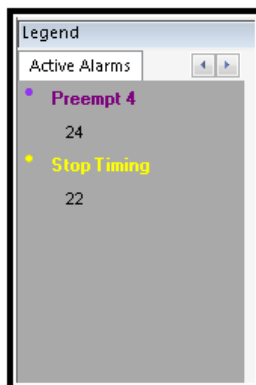


Information such as controller ID or Pattern number can be displayed on the map also as shown below.





Also available on the GIS Legend is a list of all active alarms. Select the Active Alarm Tab to view all active alarms in the system.




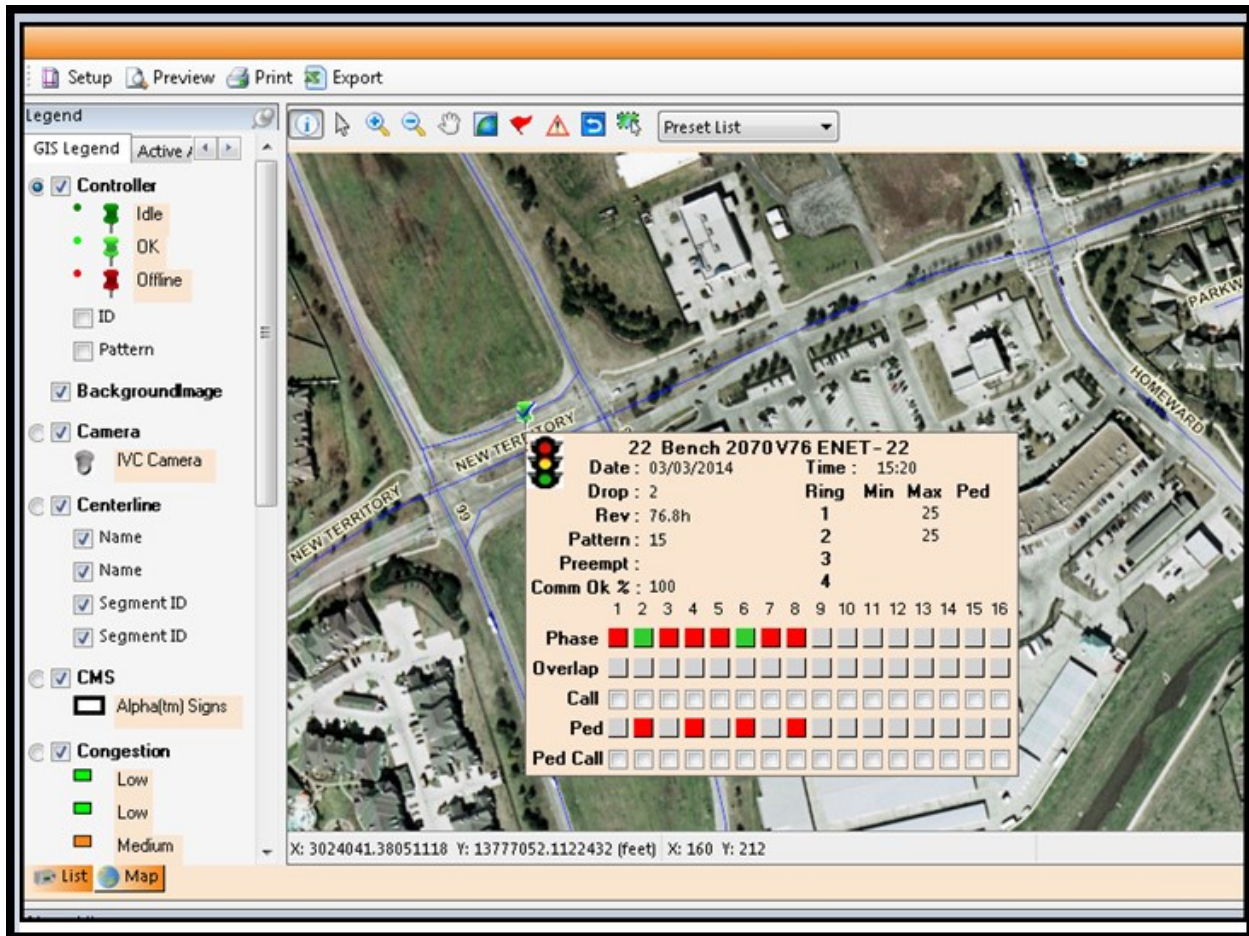
### 4.3 GIS Map Navigation Toolbar

The *GIS Map* control is performed by selecting a toolbar function from the upper left of the GIS map:



As described above, both layer points must be checked on the *Legend*, then select one of the following icons:

 **Information** – Selecting this function will provide real-time information of the active layer using a “Hover Balloon”, by placing the mouse over the desired map object. The hover balloon displays real-time status for any of the active layers on the *GIS* map, including Controllers, Congestion, Cameras, CMS signs, Switches, etc.



When a *Controller Hover* appears, you can double-click on it to make it permanently “Pin Up” as a dedicated window. The picture below shows that a pinned hover offers two view options, the *General* Information and a *Layout* (GIS) view tabs.

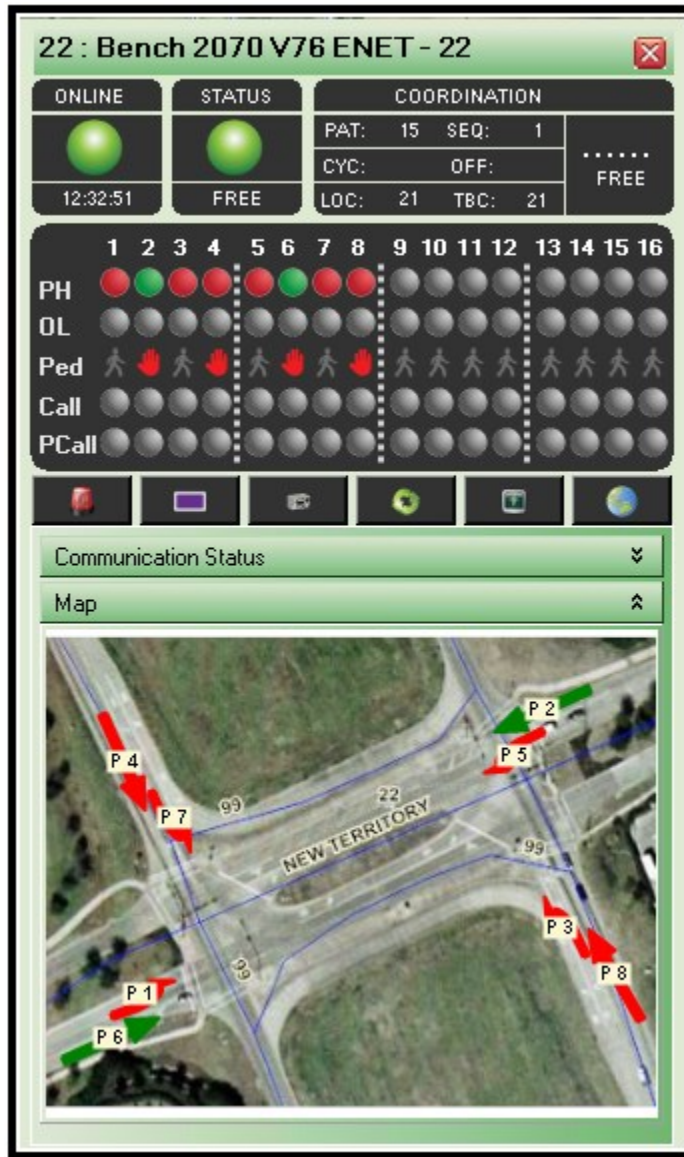


Figure 4-1: Controller “Layout” Aerial View

**ATMS** provides an instant-video feeds for up to six Traficon Video Detection cameras operating on an Ethernet platform using the Cubic | Trafficware/Traficon “VU COM” communications card. This utility uses the *Information Hover* to initiate a video feed connection when the “Video Detector” layer buttons are checked on the legend. When in *Information* mode on the toolbar, you can place your cursor over the Video Detector camera icon on the map. A video view window will appear and the stream will begin in the window. If a camera feed does not appear in the window, such as “Camera2” below, then the video signal has been disrupted for that camera and the VU COM card cannot see the video signal.

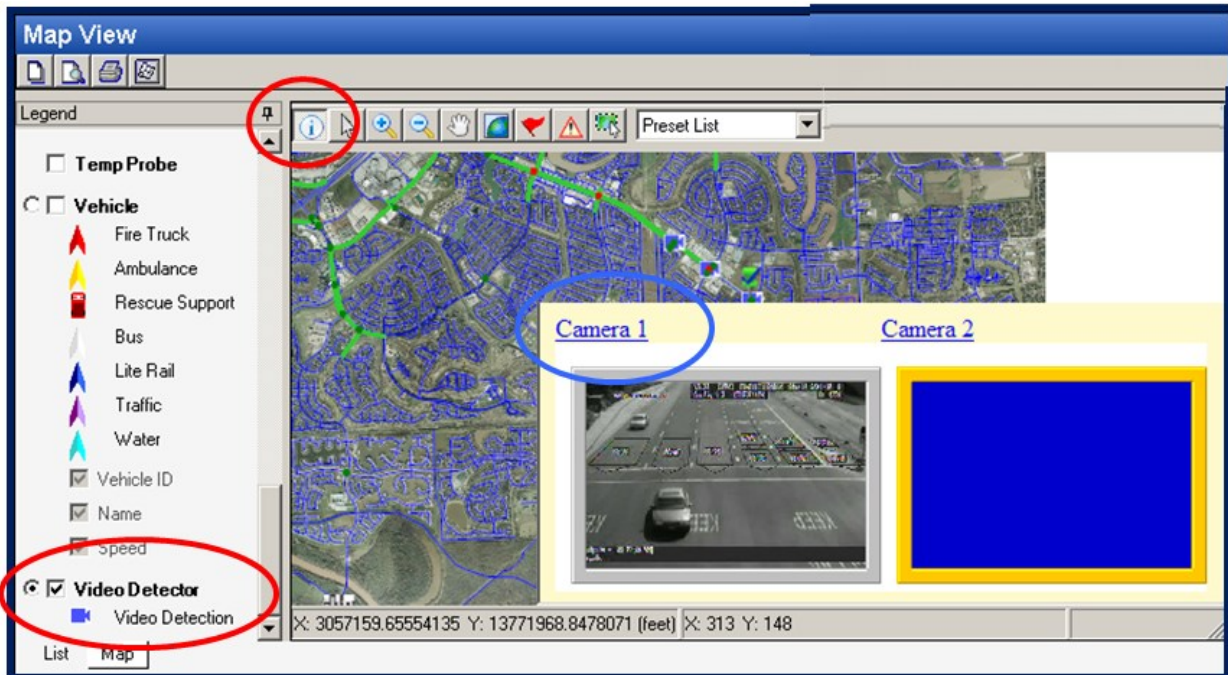


Figure 4-2: Cubic | Trafficware “VU COM” Layer Hover Balloon

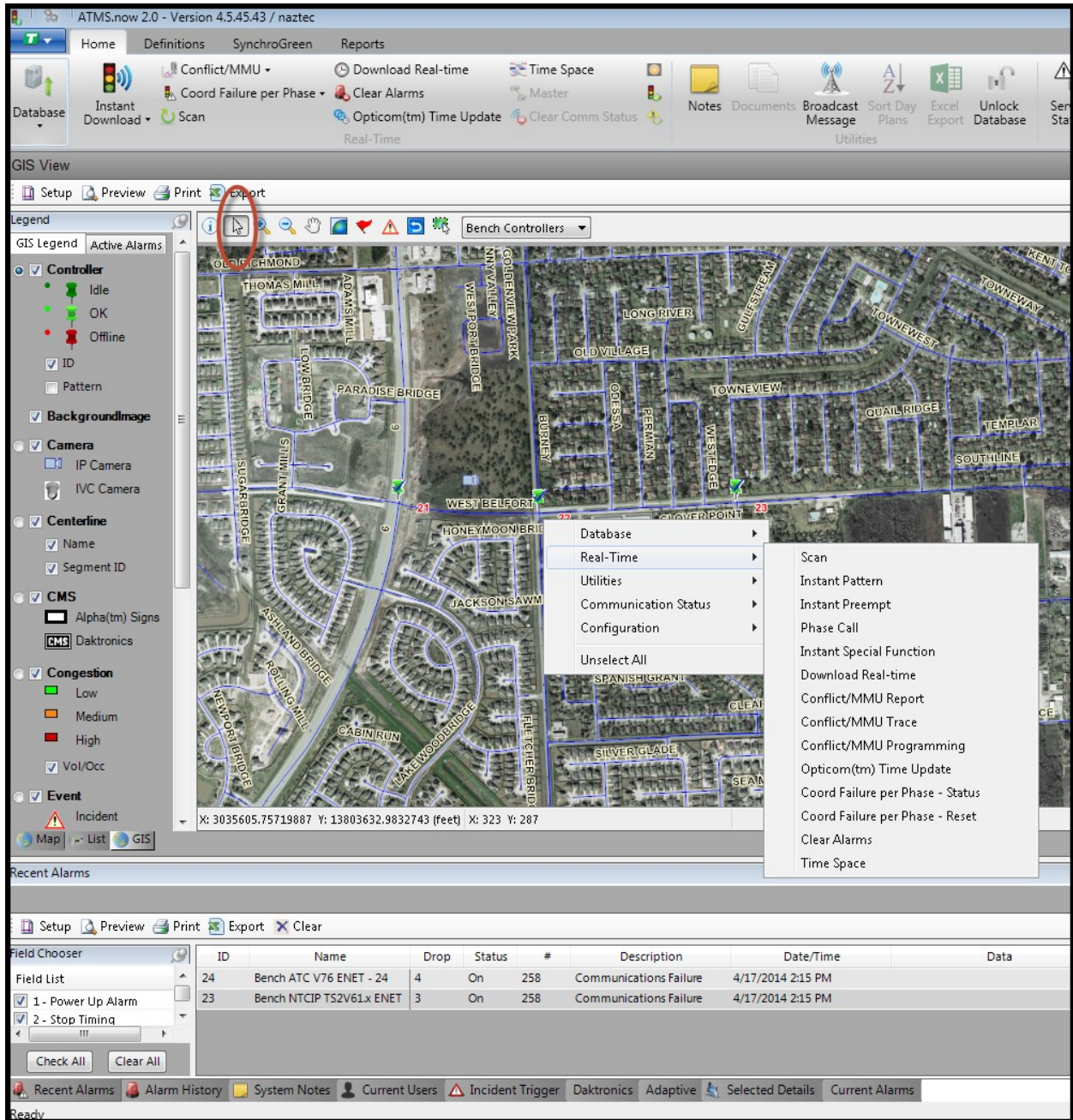
When this Hover Balloon appears it will display the amount of camera feeds as programmed and as the VU COM board is supporting. To view a specific single feed in a dedicated window, you can select the “Camera 1” link (BLUE circle). This will produce a permanent window on the screen that will stay up while other system navigation can take place.

When in *Select* mode on the toolbar and in control mode of the VU COM layer, same as above, you can directly launch the Cubic | Trafficware/Trafficom Video programming interface. To launch this interface, select the same camera icon on the map, which will launch a browser-based application to the main programming screen for the Cubic | Trafficware/Trafficom video processor as shown below.



Figure 4-3: Cubic | Trafficware “VU COM” Programming Interface

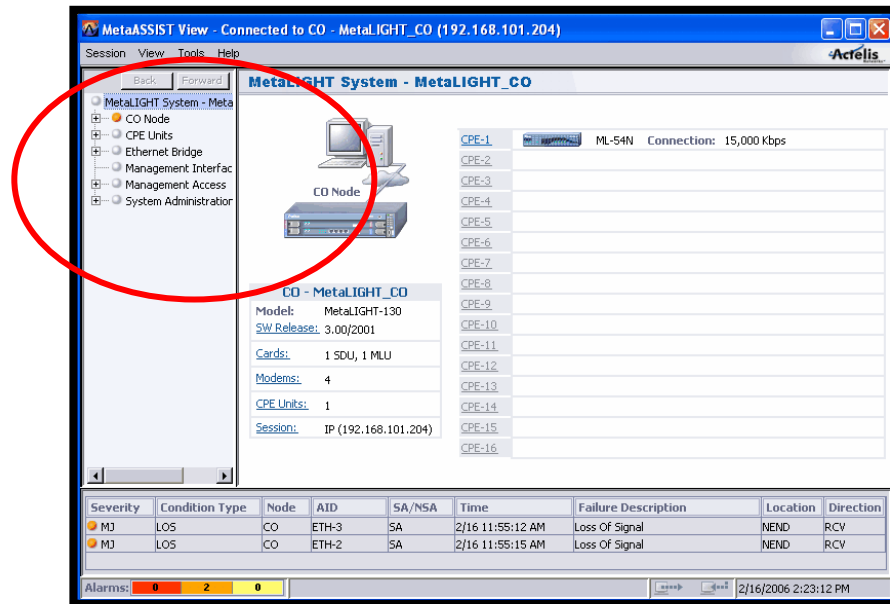
**Select** – Selecting this function enables the user to select or “wrap-around” the desired object or group of objects to launch control. When this is used to select Controllers, the user can perform functions using the Actions pane or “Right-Click” to open a small *Action* pane window on the GIS map.



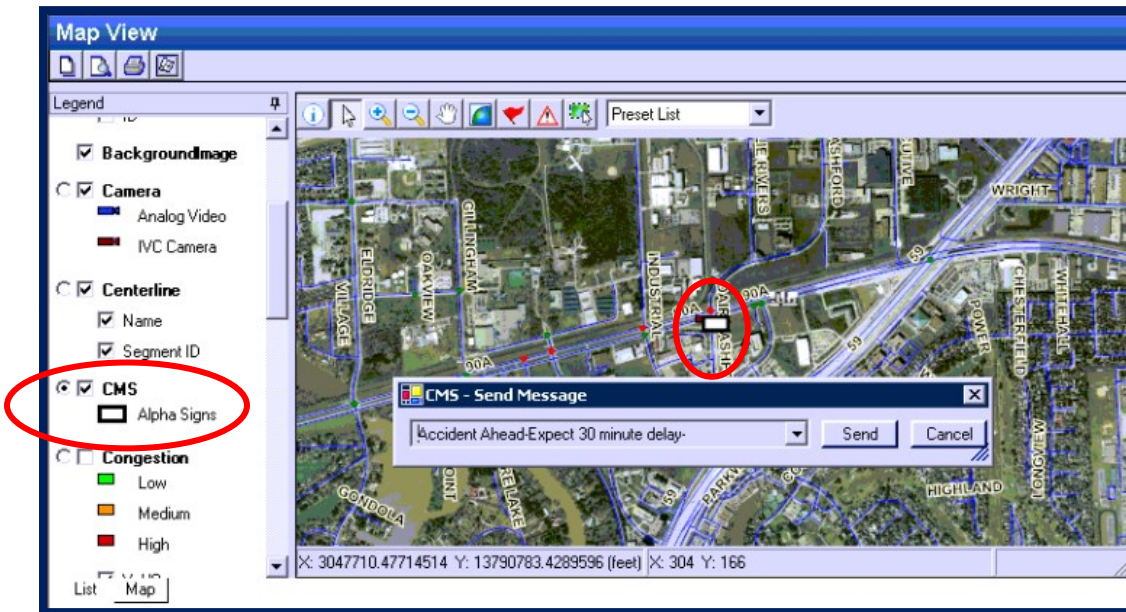




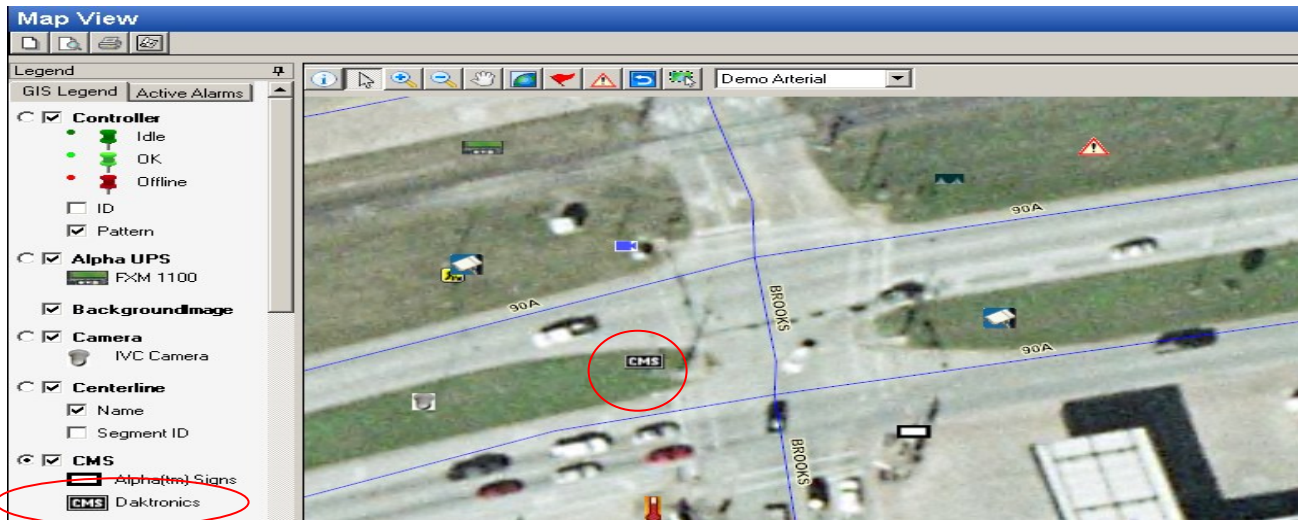
Additional devices such as Cameras, Changeable Message Signs, and Switches can be launched through the GIS interface by selecting the round “radial” button next to the target layer type. Place your cursor over the targeted device, and click to launch the interface. The screen below shows a launched 3<sup>rd</sup> party software application (MetaASSIST by Actelis Networks) from the GIS layer.



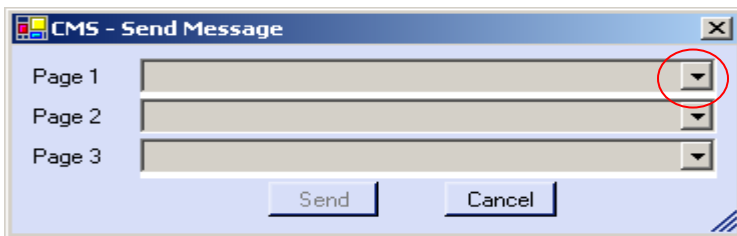
**ATMS** interfaces with Changeable Message Signs and can send messages to them directly through the GIS interface. Select the round “radial” button on the *GIS Legend*, click on the target CMS icon (circled in **RED**). A “CMS-Send Message” pop-up will appear. Select a pre-programmed message as defined in the *Message* section of the *Definitions* module (discussed in Chapter 6). Select the “Send” button to download the message to the field.



Daktronics CMS signs have the capability of displaying multiple messages that the sign will cycle through. This can be set up using the GIS map as follows. The user first selects the CMS radial button on the GIS legend and the select button is used on the GIS tool bar, then the user double clicks on the Daktronics icon on the GIS map the following window appears.



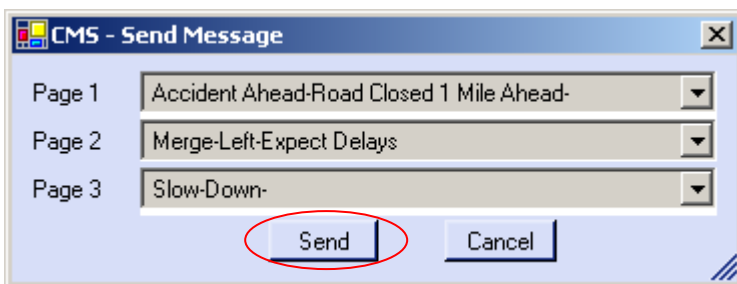
The user selects one or more pages to send to the sign by clicking on the pull down arrow.





When the user selects the pull down arrow, another window appears with choices of predefined messages (created in definitions/messages) to send to the sign.


MSG ID	Line 1	Line 2	Line 3
1	Major	Traffic Switch	05/19/2007
13	Merge	Left	Expect Delays
14	Slow	Down	
15	Accident Ahead	Road Closed 1 Mile Ahead	
9999	BLANK SIGN		


Once the user selects the message(s) to display the user clicks on the send button.





 **Zoom-In** – Selecting this function will allow the user to click on a point on the map and wrap around a desired area to zoom.


 **Zoom-Out** – After selecting this, clicking once on the map will zoom out 1 measure of extent.

 **Pan** – This enables the user to “grab” the map and slide it in any direction.

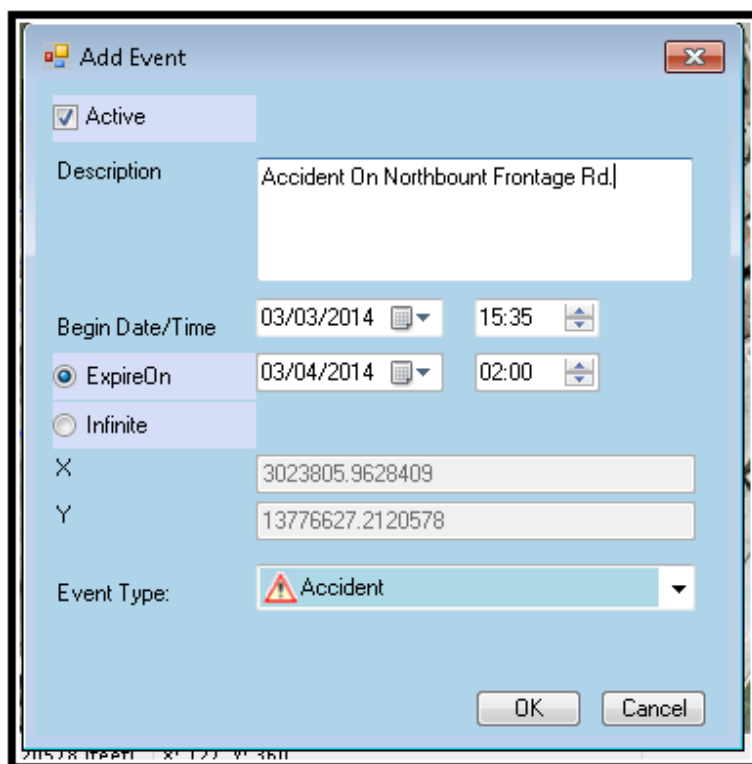
 **Full Extent** – By clicking this icon, the GIS map will zoom out to the fullest extent.

 **Marker** – The user can place a marker anywhere on the map to calculate distances to nearest system components.

 **Go Back** – As the user zooms in on the map, he/she can click on the back button to go back to the previous extent up to the last 10 views.

 **Event** – This enables the user to select an exact point on the GIS map, create an Accident, Construction Zone, Slow Zone, etc, and place it directly on the GIS map in real-time. This action will add the newly-created *Event* to the “Events” layer on the GIS map. At the time of creating this *Event*, the user can program whether **ATMS** will remove it at a pre-determined time and date, or leave it indefinitely, requiring manual removal from the *Definitions* page. *Events* can also be added in the *Definitions* module of **ATMS** as described in Chapter 6.

After selecting the *Event* icon in the GIS toolbar, the user can next select the location on the GIS map to post the *Event* by clicking on the desired location. When this is done a new window will pop-up called “Add Event”, allowing the user to define the new *Event*. The user then fills out the appropriate information in each box.



The screenshot shows the "Add Event" dialog box with the following details:


- Title:** Add Event
- Active:**
- Description:** Accident On Northbound Frontage Rd.]
- Begin Date/Time:** 03/03/2014 15:35
- ExpireOn:**  03/04/2014 02:00
- Infinite:**
- X:** 3023805.9628409
- Y:** 13776627.2120578
- Event Type:** Accident
- Buttons:** OK, Cancel

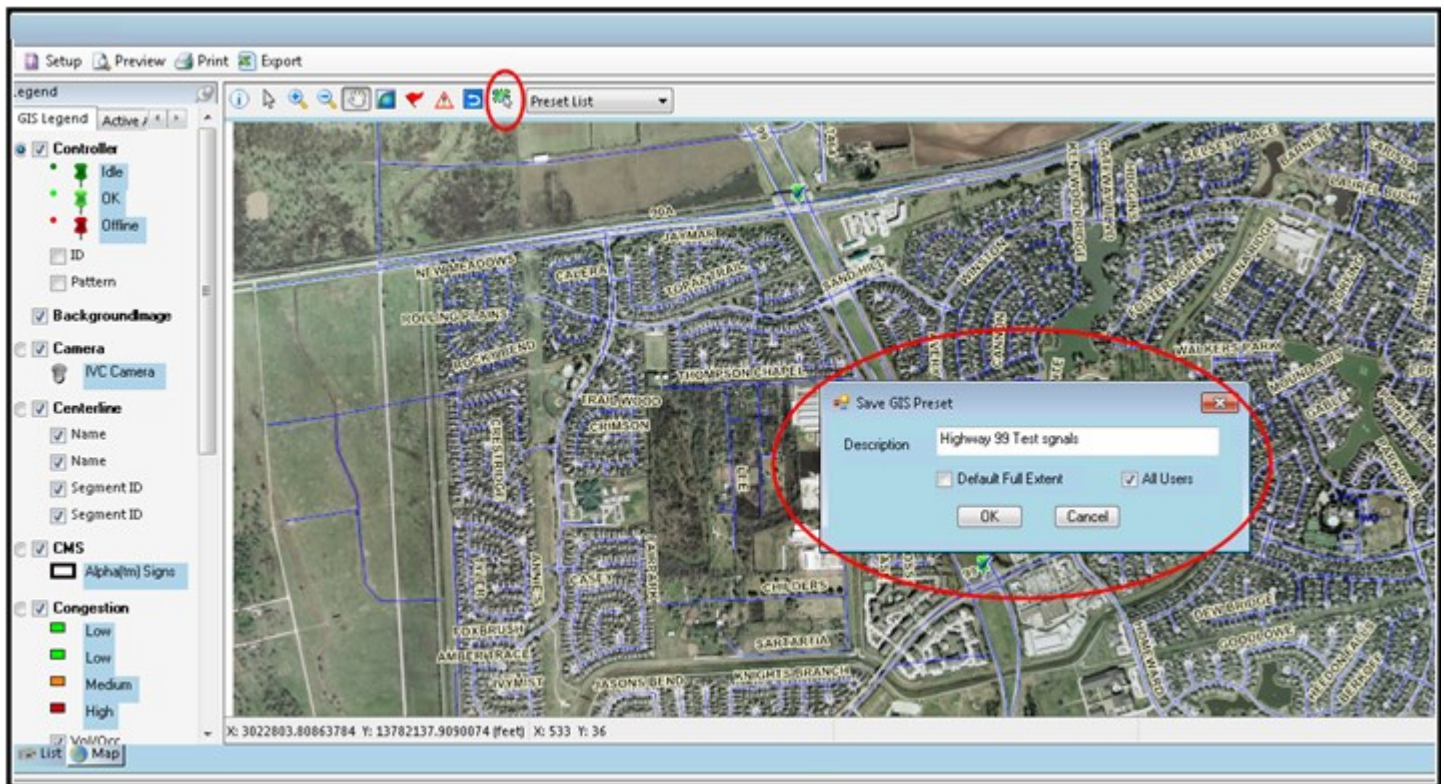
The *Active* box when checked will display the *Event* on the GIS map. When it is unchecked it will be logged in the database but will not be displayed.

Enter the *Description* text as you want it displayed on the map, and if you are using the Internet Web module of **ATMS**, as you want the public to read the *Event* information.

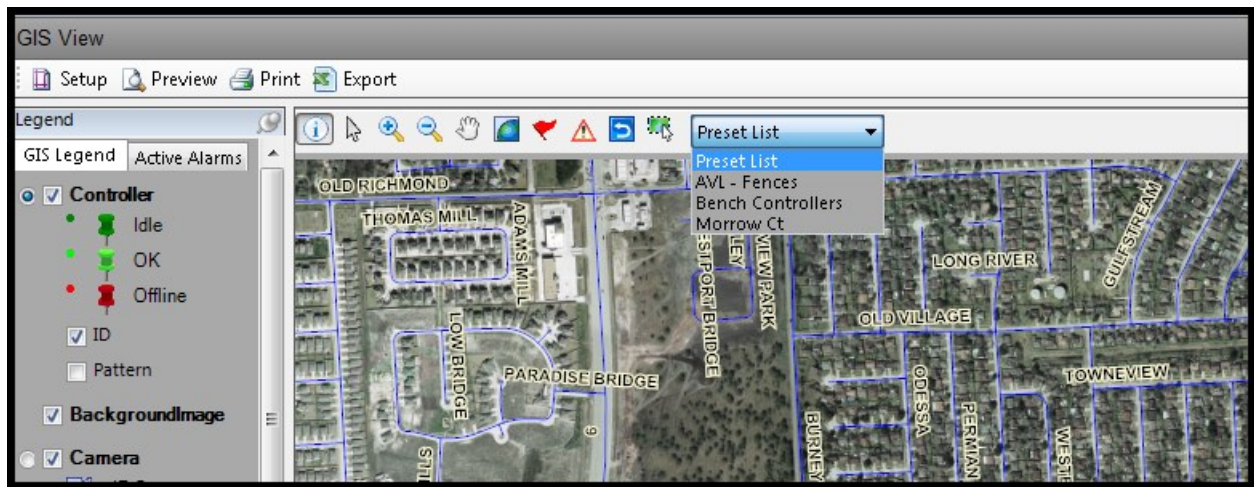
The *Begin Date/Time* and *Expire On* date and time will enable **ATMS** to automatically activate/place and remove/disable the *Event* on the *GIS map* at the programmed time. When set at *Infinite*, the *Event* will remain until manually removed in the *Definitions* page of **ATMS**.

The “X” and “Y” values are the geo-referenced coordinates of the mouse position at the time the user selected the map locations. Select the *Event Type* by using the drop-down selection box. Click “OK” to add and save. If you have a special *Event Type* need, contact your Cubic | Trafficware representative.

 **Create Preset** – This enables the user to zoom to an exact view on the GIS map, and set the GIS positioning as a saved, named preset for quick future navigation. When selecting the *Create Preset* icon, a new window will appear to name the Preset View and set the user access to the view, either the “Active User” or “All Users”. When checking the “All Users” box, the programmed view will be available under its programmed name to all **ATMS** users. If the box is left unchecked then it will only appear as a GIS navigation option to the specific user that created it (logged in user). Click “OK” to save or “Cancel” to exit.



To select a specific “Preset View” for navigation, select the drop-down menu on the GIS toolbar. A list of the available *Preset Views* for that user will display. Select the desired *Preset View*. Upon selection **ATMS** will automatically navigate and zoom to the programmed GIS view. The figure below shows a sample of *Preset Views*.



### 4.3.1 GIS Legend

The *GIS Legend* provides layer view and layer-based element control on the GIS map. This enables the user to control the amount of displayed information, which simplifies selection of the desired information. The *GIS Legend* can be “tucked-in” or “pinned-up” by using the Push Pin, just like the *Field Chooser* screen. **ATMS** also uses the “stickiness” feature with the active GIS layers, memorizing the user’s last-used layers the next time a login occurs.

The *GIS Legend* provides layer view control by activating the layer category when the “Square” box at the layer description is checked. When the box is unchecked, the layer will not be displayed, though **ATMS** will continue to monitor its real-time status. Device communication and control can be accessed by checking the “Round” radial button for the desired layer. This enables the user to then utilize the complete set of *GIS Toolbar* functions discussed in the section above, but the *Information* button and *Selection* button will be specific to the selected layer category, such as Controllers or Cameras. The figure to the right shows the Controller category selected for layer view and for layer control. With these checked, the mouse actions will now control the controller layer for *Hover Information* and the *Action* list (right-click or Action pane).



Each distinct layer can be toggled on or off. **ATMS** tracks the user preferences on the *GIS Map* view with the “stickiness” feature, displaying the last active layers when returning back to the *GIS Map* tab.

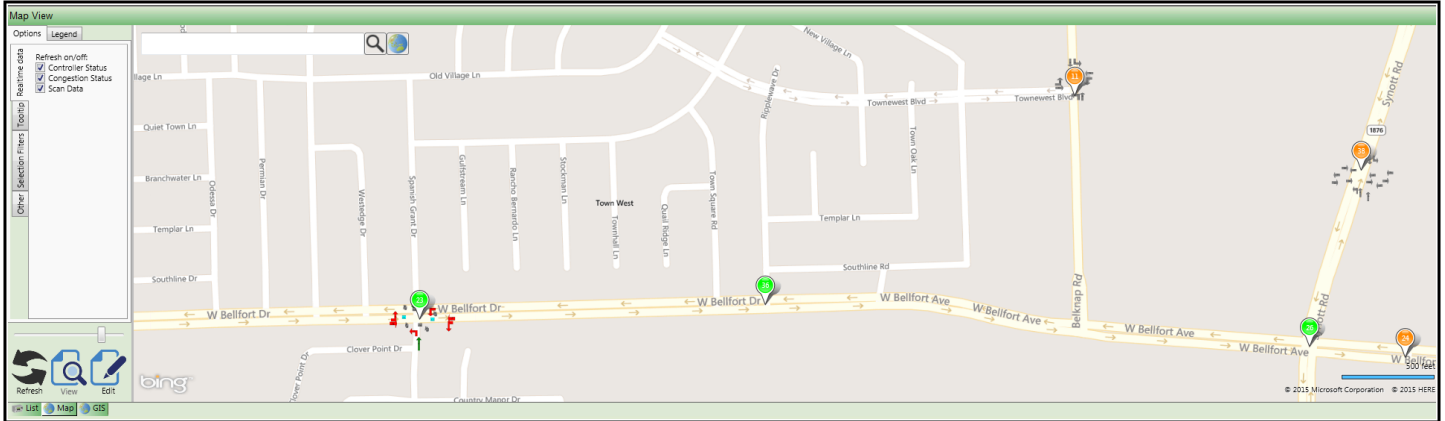
**ATMS** can display almost anything as a GIS layer type. The standard GIS setup will include layer representation for Controllers, Events, Congestion, Background Aerial & Centerlines, CMS, Camera, and Switches. To add a display of a desired layer that is not part of the standard software setup, contact your Cubic | Trafficware representative.

To control a layer from the GIS map, you must check both the square box to see the layer and the round button to get information or control the object.

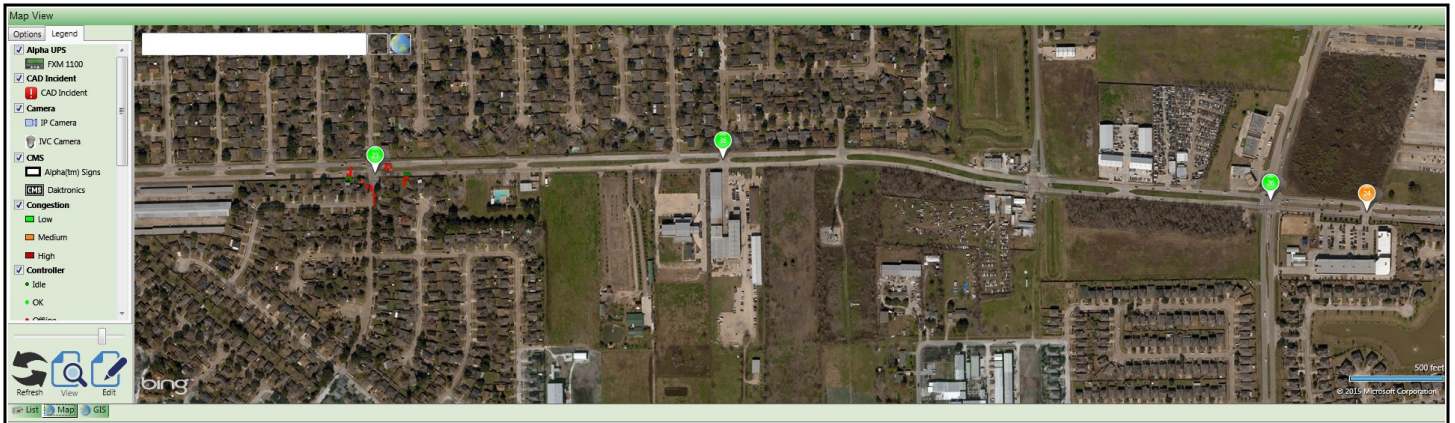
## 4.4 Bing Map View

Instead of the GIS map view *Bing Map* view provides a real-time, map-based, status map display of all of the **ATMS** system elements. Choose the *Map* Tab to select the Bing Map view. All standard Bing functions and layer actions are integrated in the Bing map. Below, is the Bing Map Road view followed by a zoomed in Bing Map Satellite view.

The Road view is shown below.



The Satellite view is shown below.



To select the preferred view please click on the

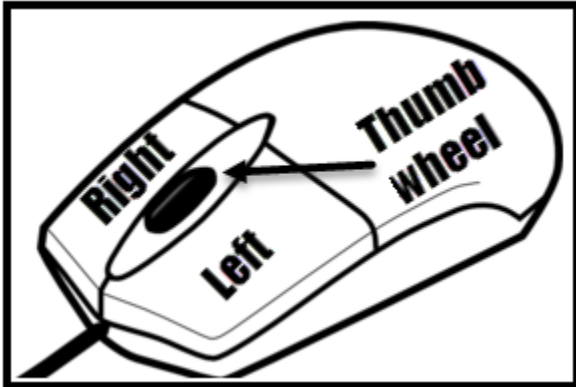


button next to the search bar and you can toggle between views.

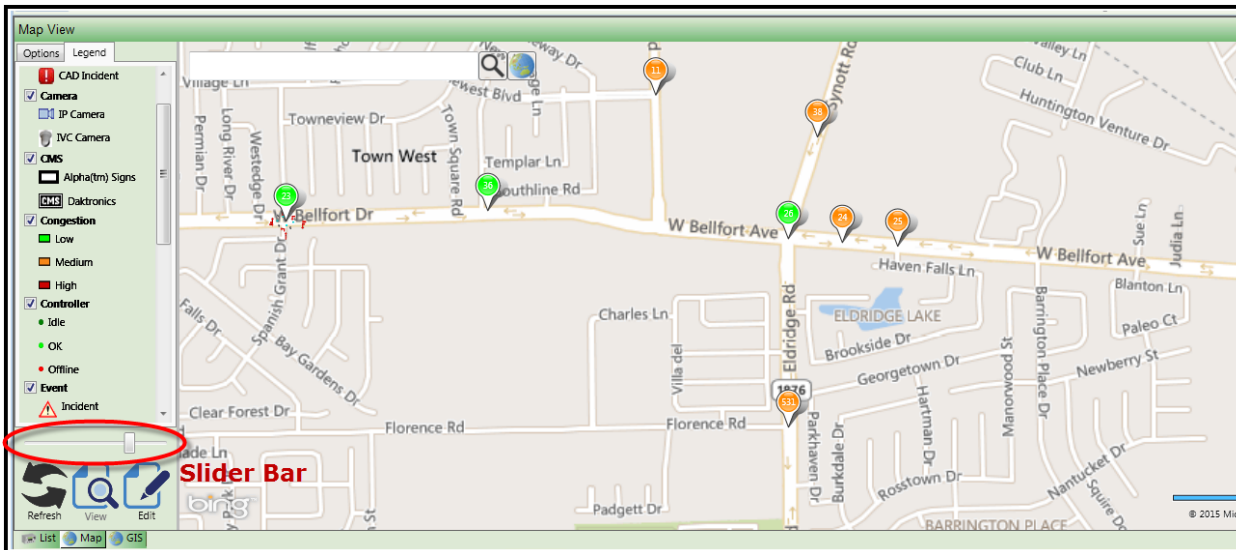


## 4.4.1 Maneuvering the Map

Each user has access to the standard Bing Map tool set. The preferred method is to use a standard windows mouse as shown below.



Use the thumbwheel to zoom in/out of the map. In addition left-clicking the mouse and using the slider bar under the legend section can also be used zoom in/out.



You can also use the Keyboard to also maneuver the map.

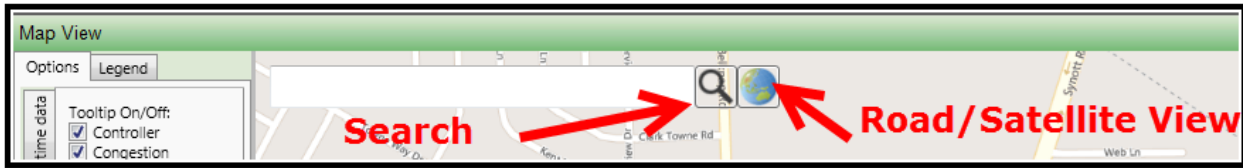



+	Zoom In
-	Zoom Out
→	Move Right
←	Move Left
<b>Delete</b>	Deleted selected Controllers
<b>CTRL</b>	Select multiple intersections via the Mouse
<b>F5</b>	Google Maps Only- Map refresh

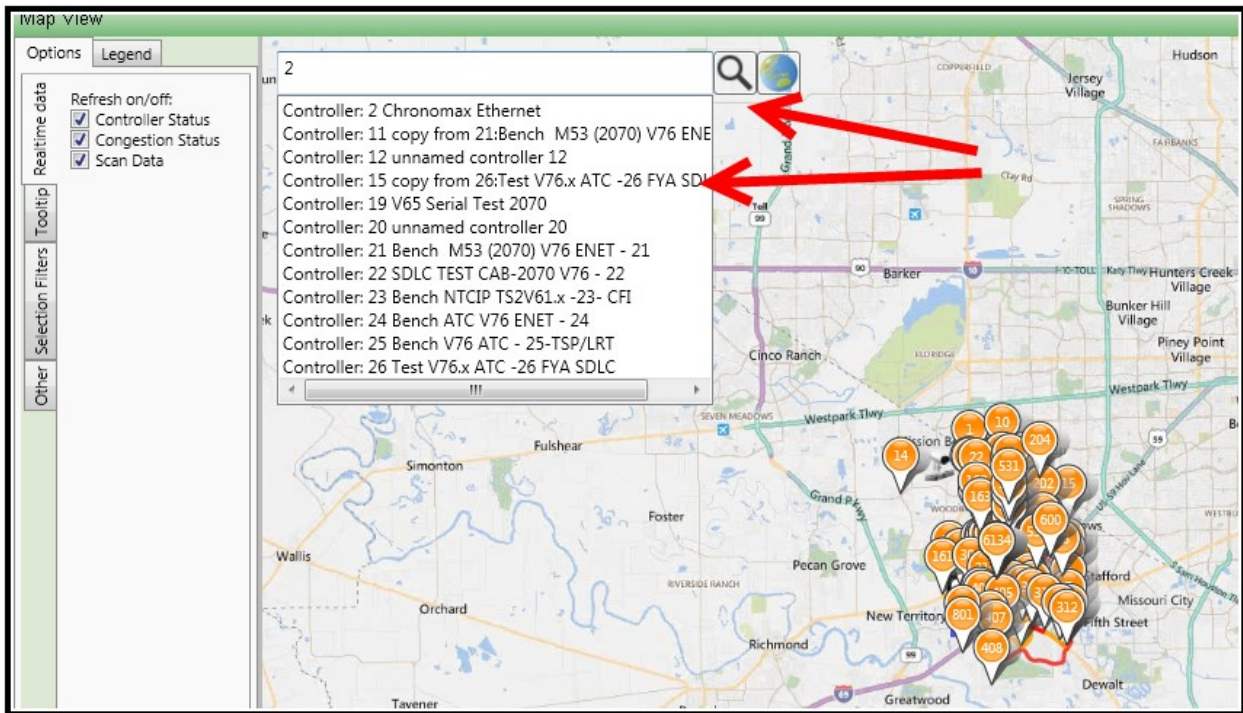


## 4.4.2 Bing Search Tool

The user can search for controller, devices (via device Unit ID) , cities, street names, etc via the Bing Map Search Bar.



The user simply enters data, selects the data and then hits the search tool  to zoom to the desired search selection.

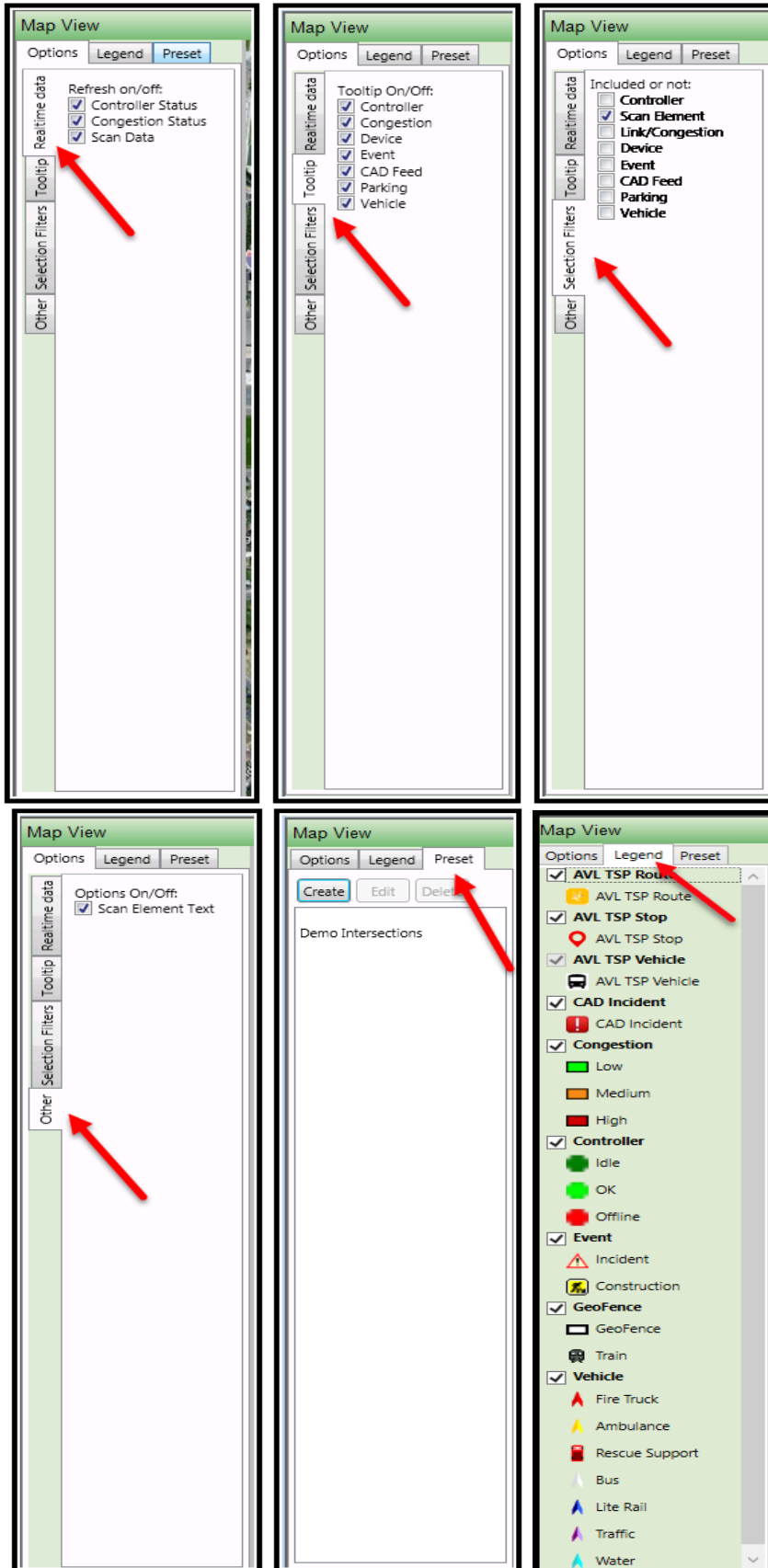


### 4.4.3 Map Option Area



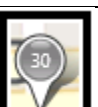


The Option tab is used to select various Real-time data, tooltip data and selection filters on the Map. The Legend Tab is used to turn On/Off real time data to the Map. The Preset Tab is used to create user specified zoom levels for quick viewing access.

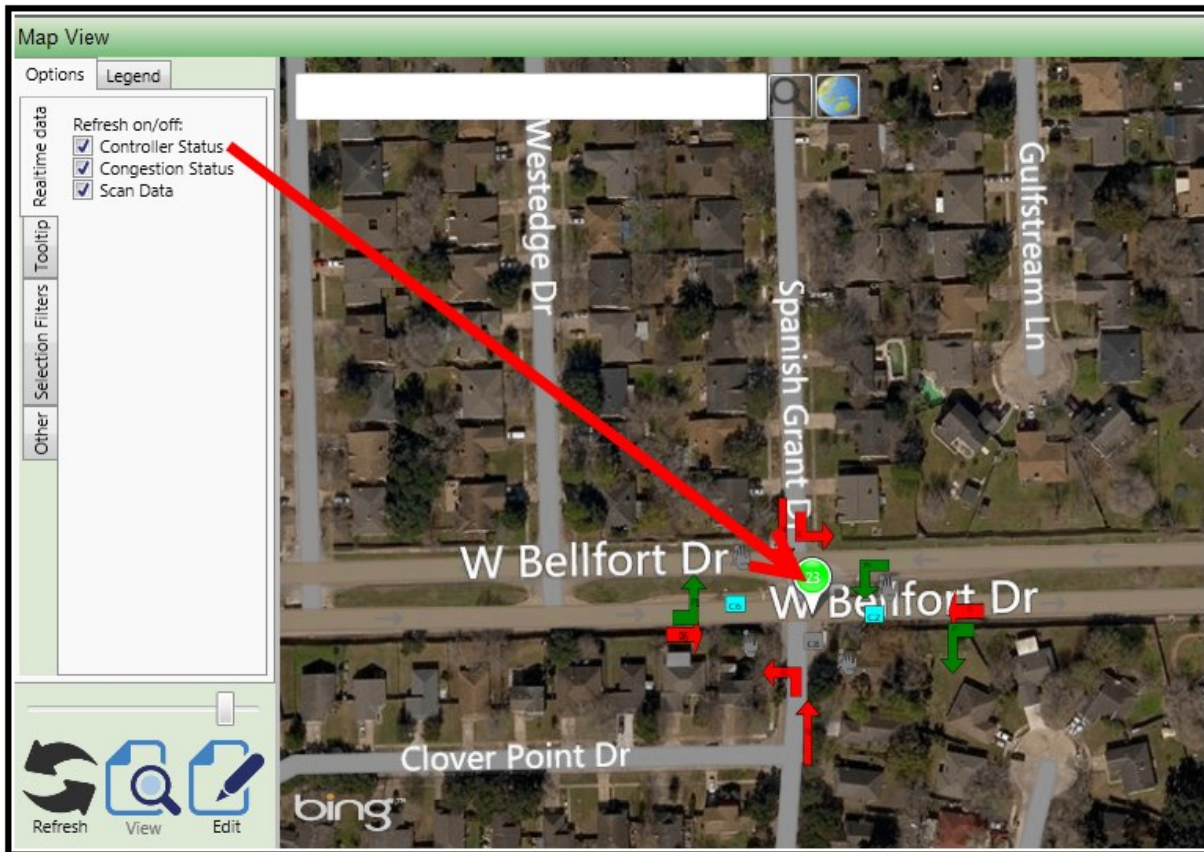


The tabs are shown below.



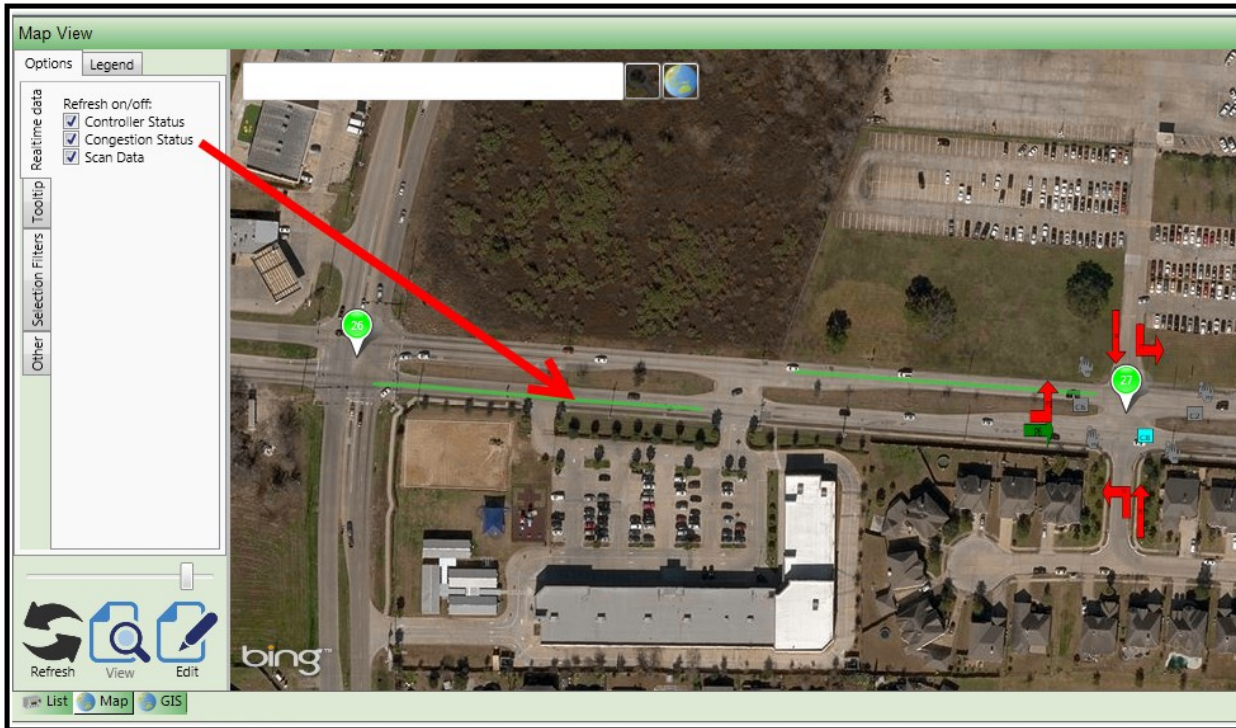
#### 4.4.4 Real-time data: Controller Status

ICON	COLOR	STATUS
	Green	Communicating with ATMS
	Red	Not Communicating with ATMS
	Gray	Offline
	Orange	Controller Status selection Off (Not Active)
	Purple Circle	Controller selected using the CTRL Key



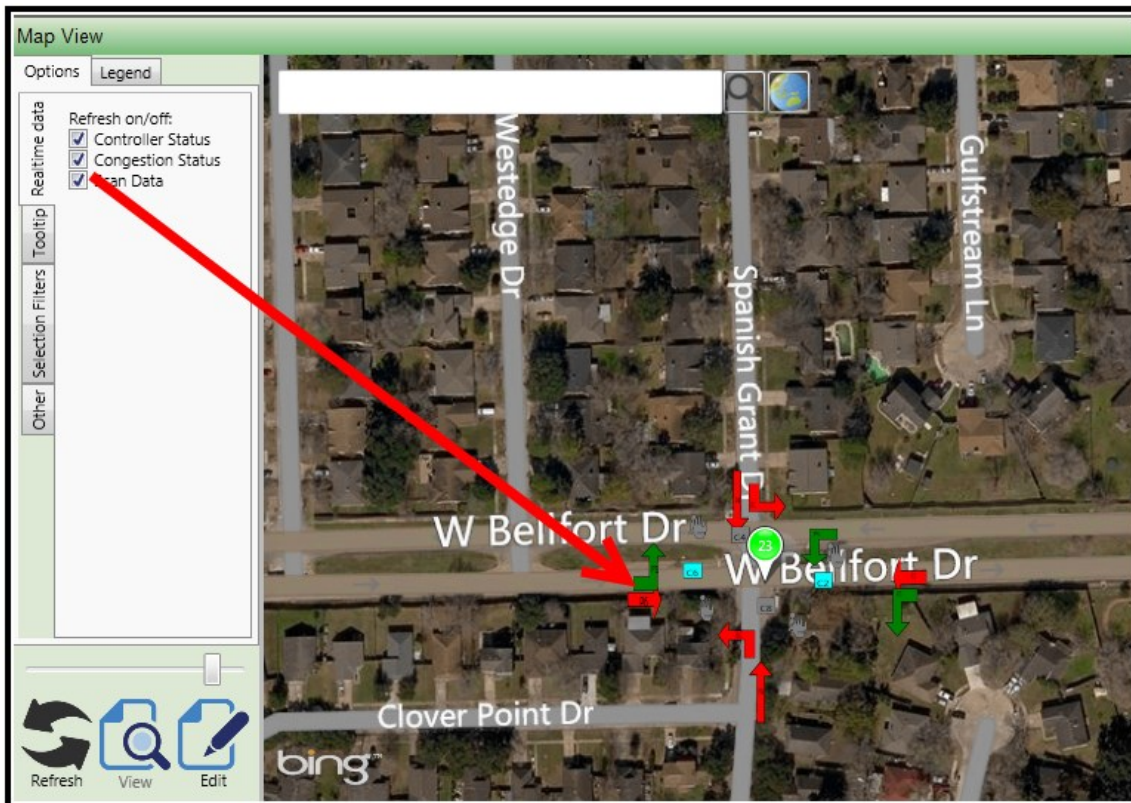
#### 4.4.5 Real-time data: Congestion Status

This selection will display congestion lies on the Map if selected.



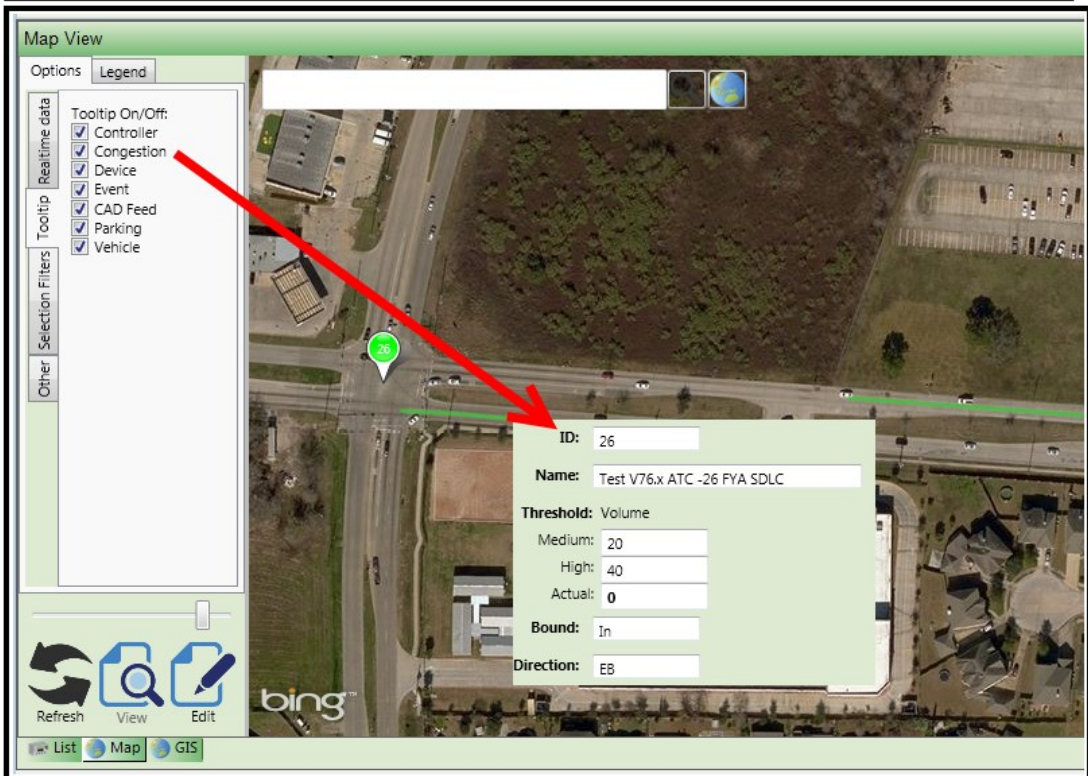
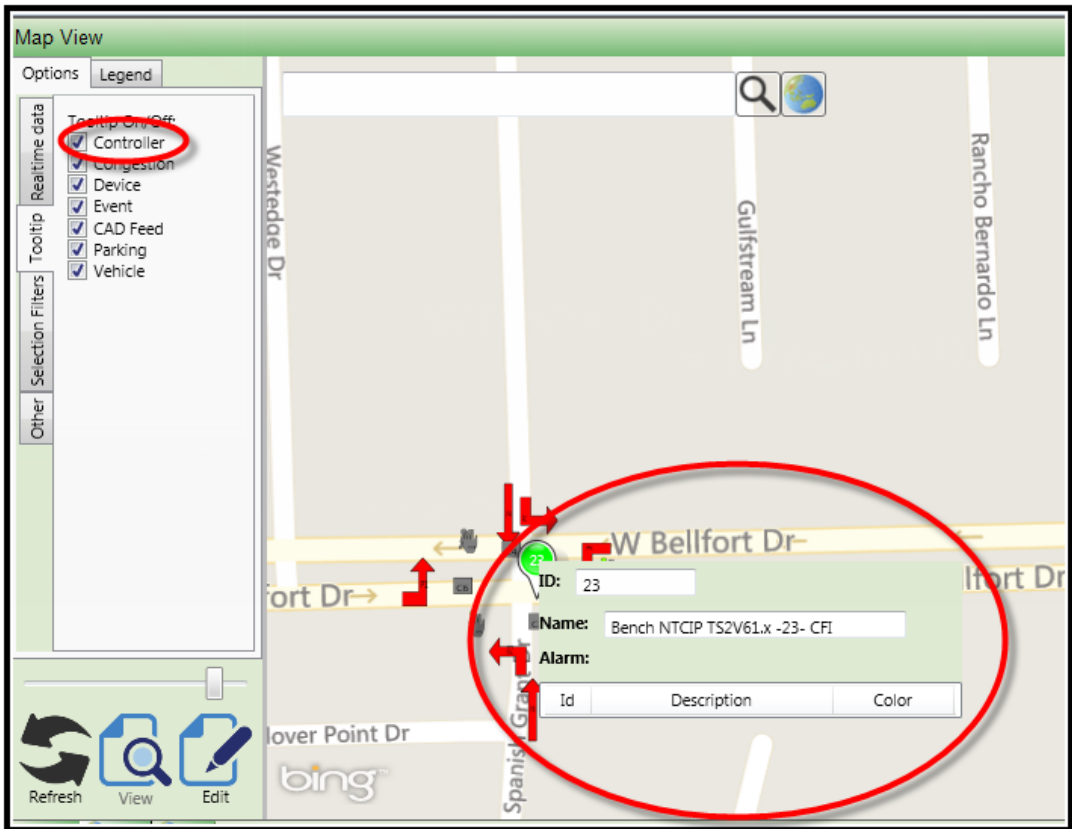
## 4.4.6 Real-time data: Scan Data

This selection displays scan data on the Map if selected



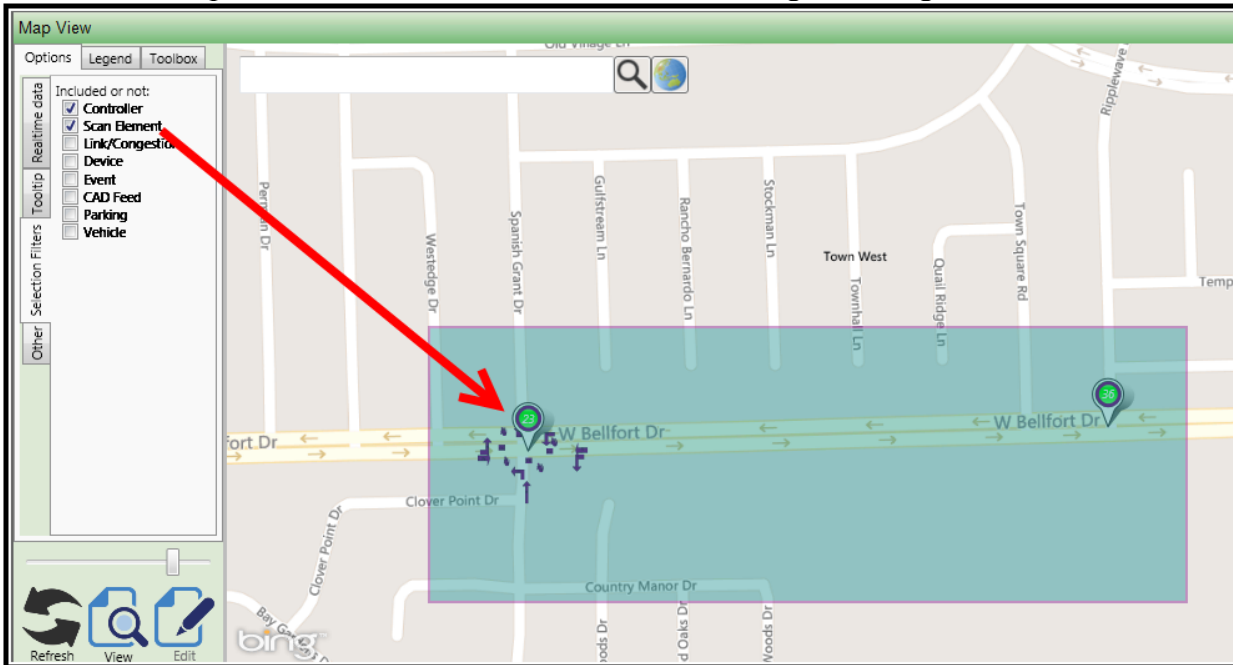
#### 4.4.7 Tooltip On/Off:

This selection displays id and simple status information about controllers, congestion, devices, events, CAD Feeds, devices or vehicles on the map. Hover over the selected controller, congestion segment, etc. and the information will be displayed.

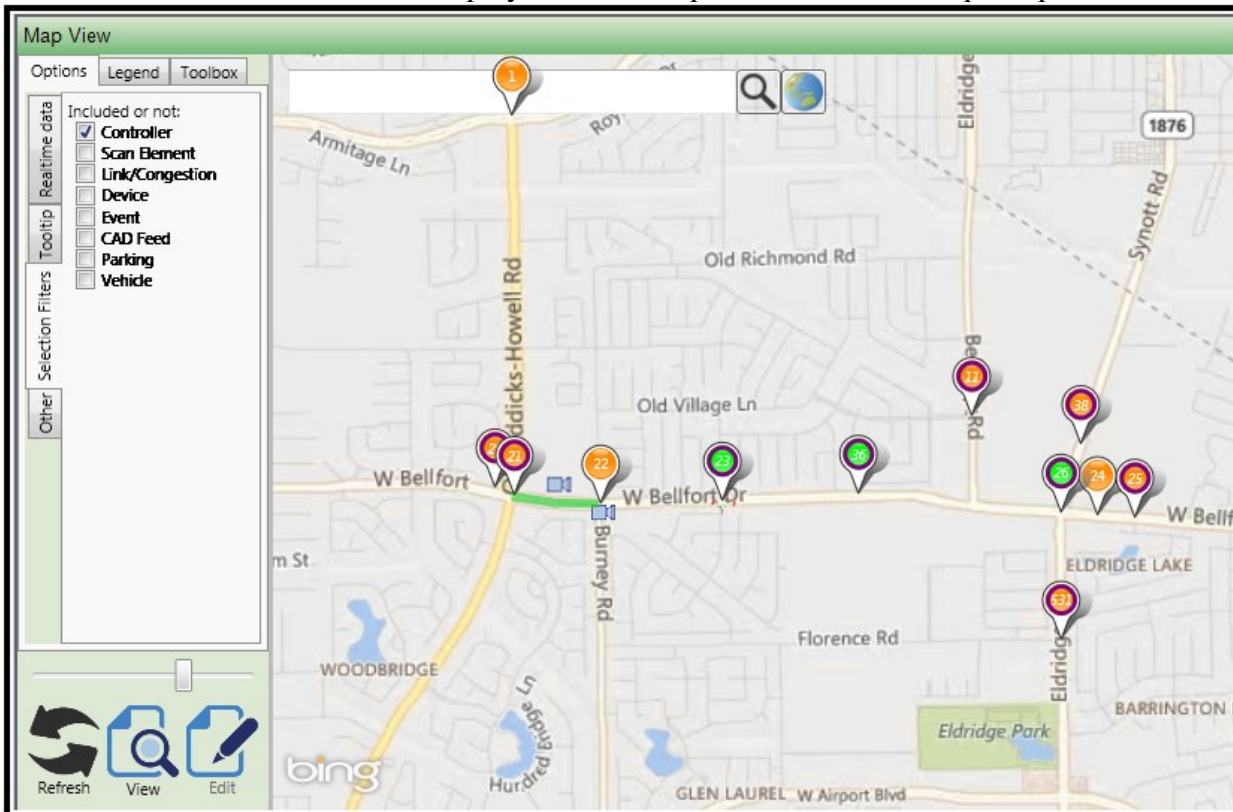


#### 4.4.8 Map Selection Filters

This selection is used in conjunction with the Edit Mode and with the CTRL Key to select devices as you rubber-band around them. By selecting the CTRL Key on your keyboard and left clicking your mouse you can select multiple controllers, devices, scan elements, congestion segments, etc. as shown below.

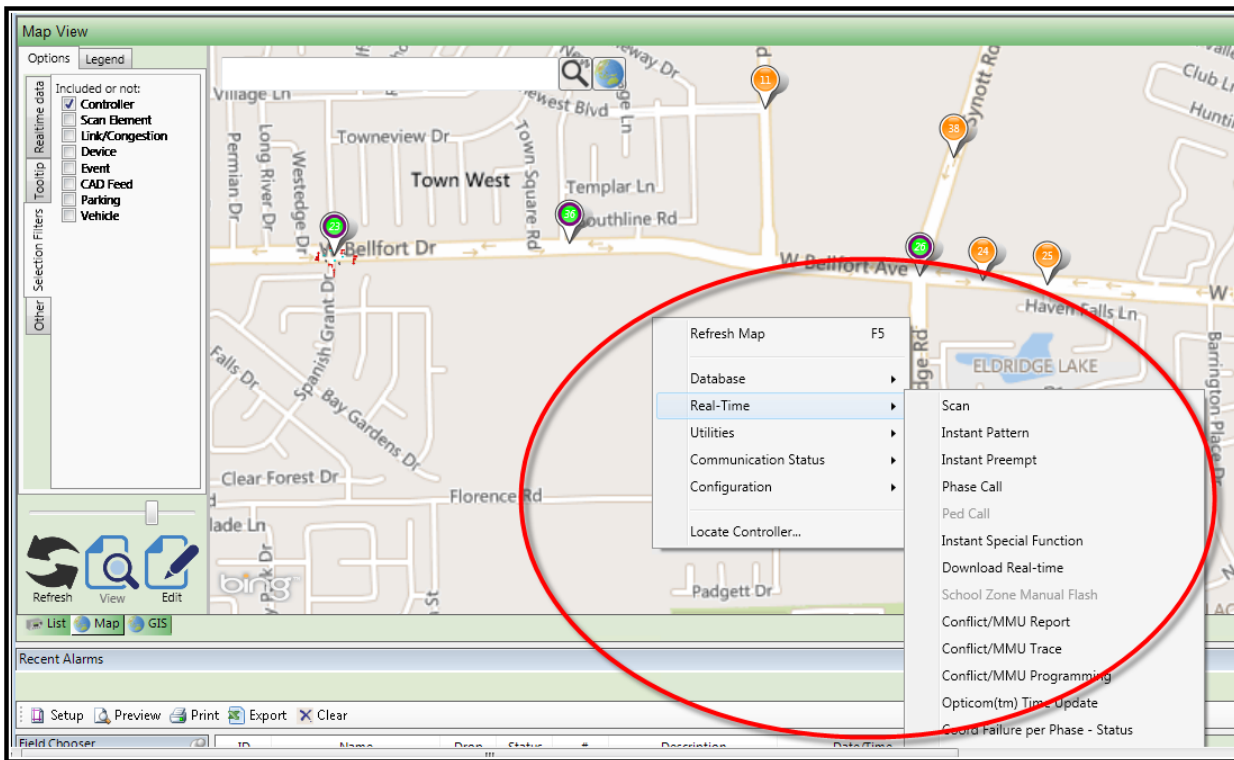


The selected controllers will be displayed via a purple circle within the push-pin.



Once selected the user can right-click the mouse to access various ATMS features that are available on the Ribbon bar.

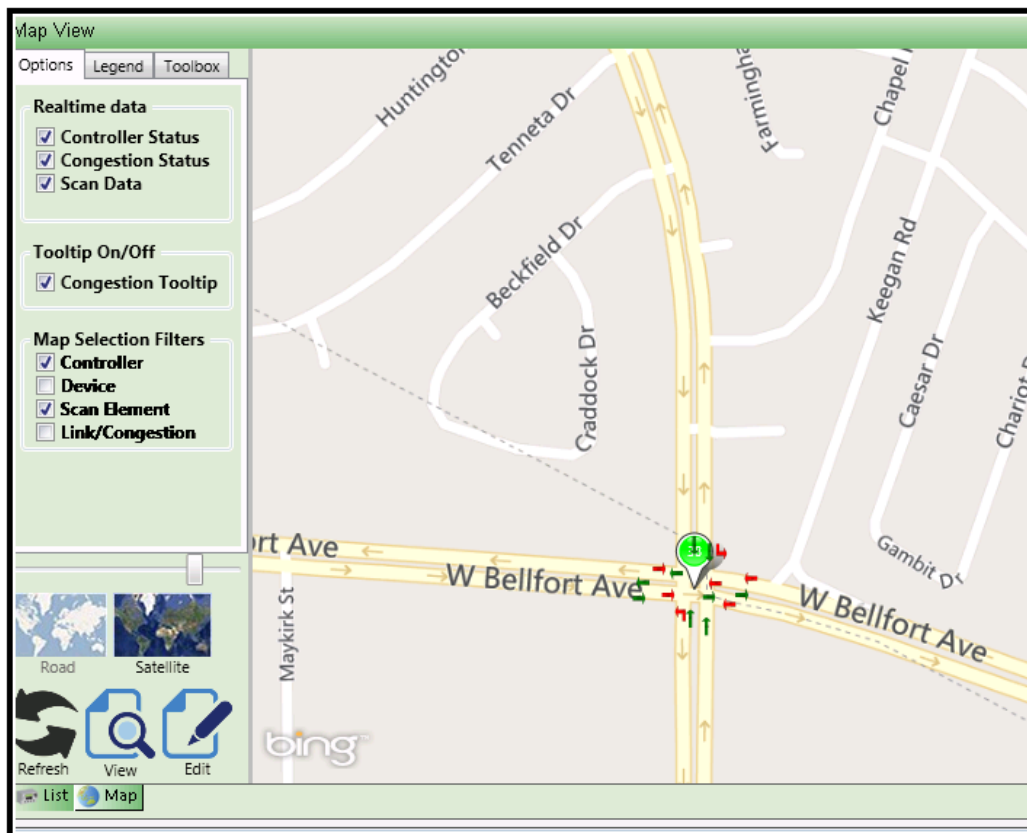
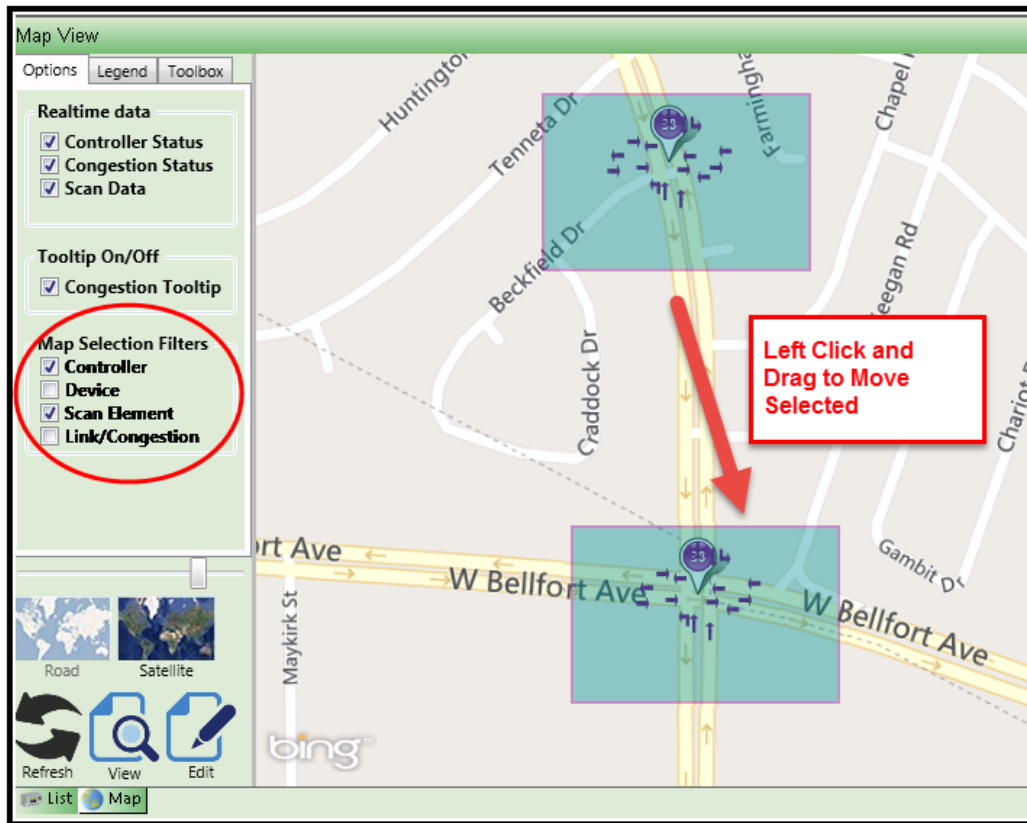




#### 4.4.9 Moving Selected Data

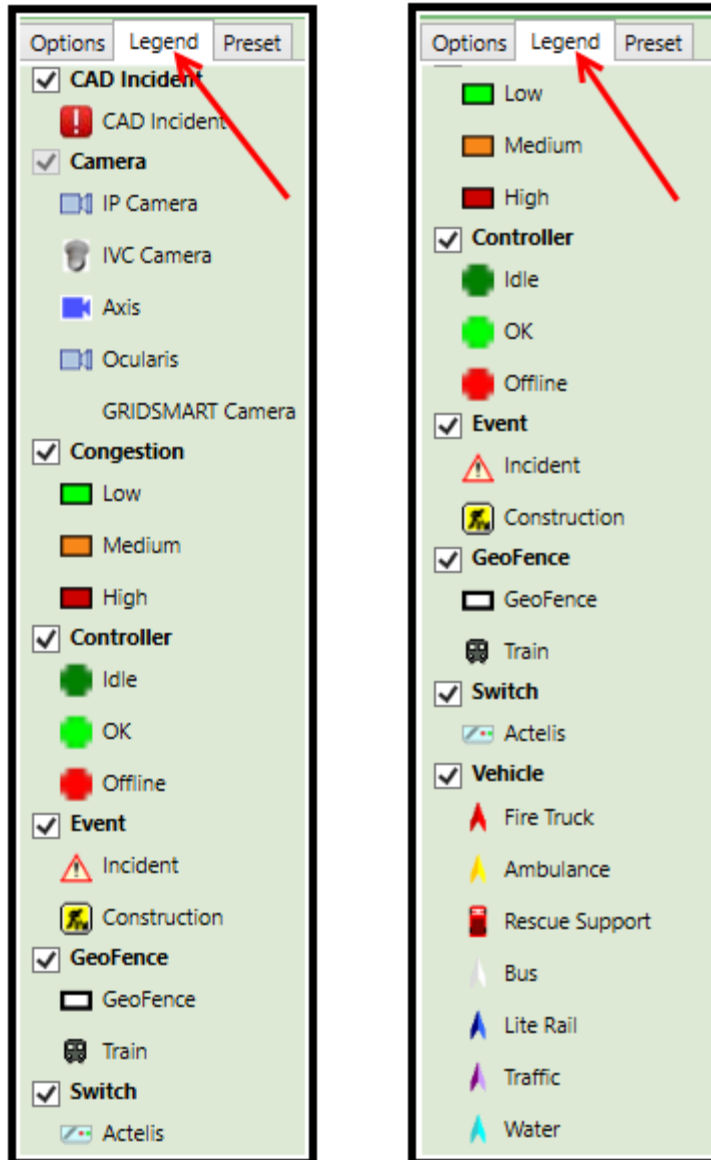
After selecting data you can easily move it on the Map by simply dragging the selected data to a new location.

- 1) Press the refresh icon to reset the Bing map view
- 2) Select the devices that you want to move by checking them on the Map selection filter
- 3) Hit the CTRL key on the keyboard and ‘rubber-band’ around the selected devices.
- 4) With the left mouse button depressed move the devices to the new location.



#### 4.4.10 Map Legend Area

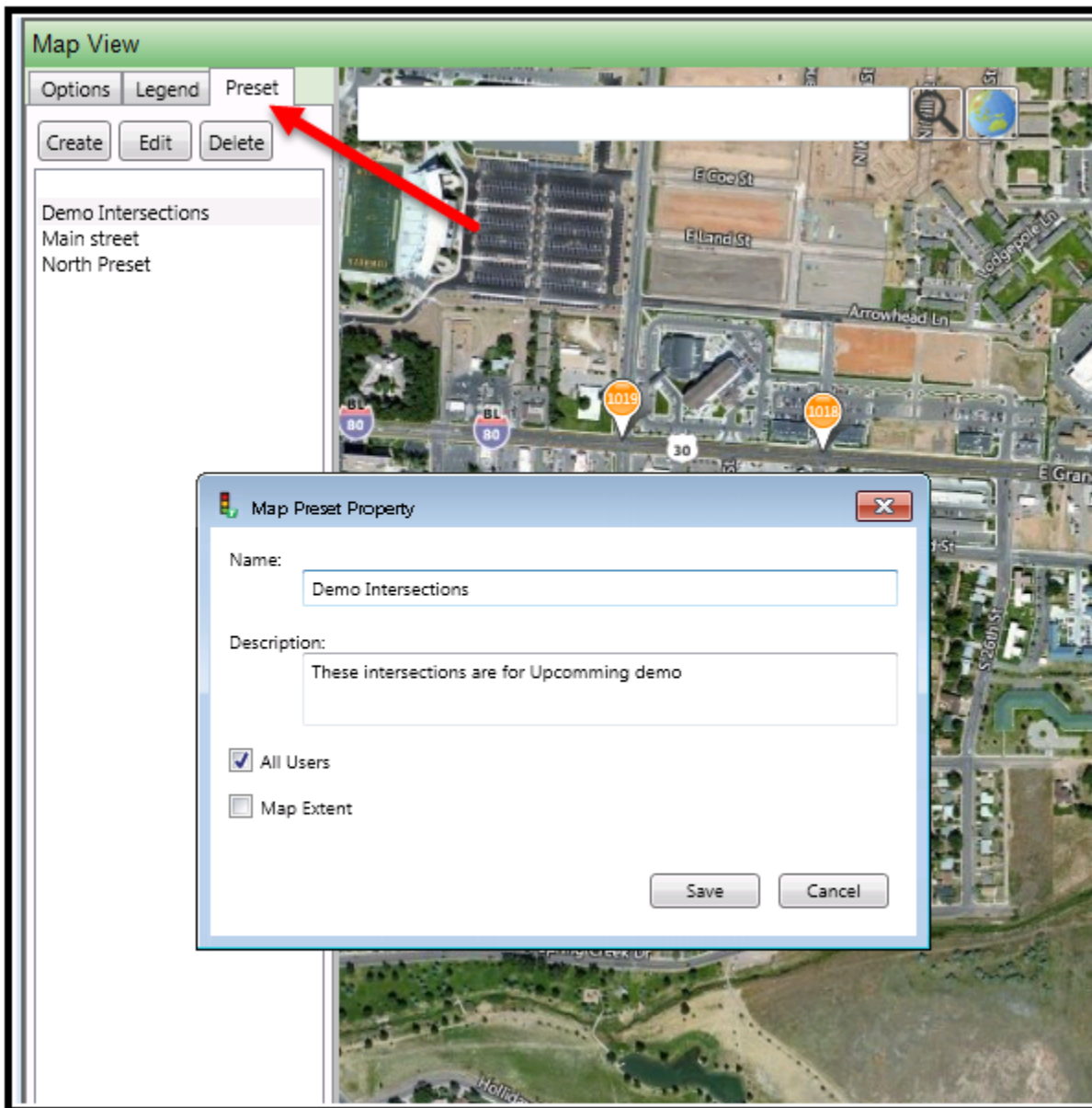
The Legend section allows the user to Map layers ON/OFF.



Once deselected, the map will not display the items when viewing the data.

#### 4.4.11 Bing Map Presets

This area allows the user to define their own Bing Map zoom level or define it for the entire agency. When selecting a Preset, the user must first go to the desired level on the map and create a preset. The preset will be named and can be selected from a list as shown below.



#### 4.4.12 Map Navigation Area

This area allows the user to navigate and Refresh the map. In addition the user can select viewing and editing features. Finally various Backgrounds can be selected.

##### Slider Bar

The slider Bar allows the user to Zoom-in and Zoom-out of the map.



##### Refresh Button

Refresh will force an update of the Bing Map.

**Note: Any actions or changes made in the Map screen will require a refresh to become active.**



##### View Button

The view button will allow the user to exit the edit mode and view all updated edited data.

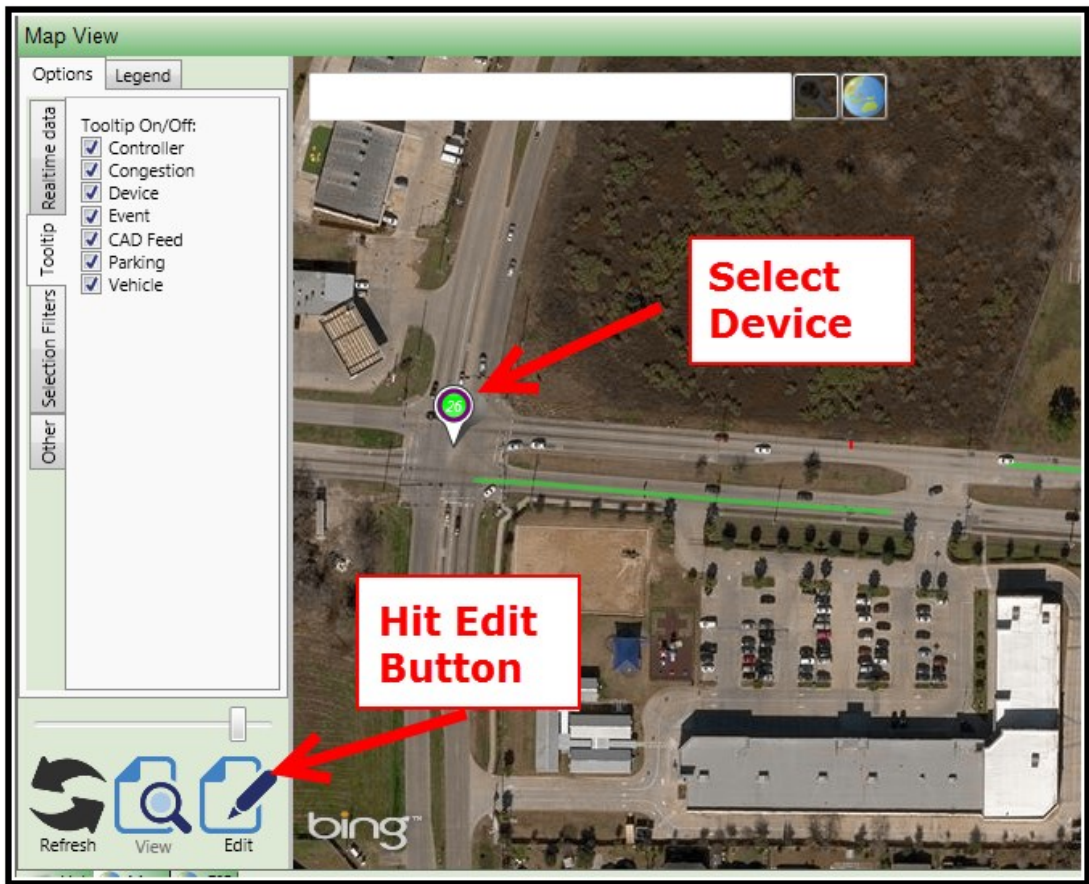


##### Edit Button

Edit allows the user to edit selected information about selected controllers, devices scan elements or congestion segments.

The user must first select a device (s) and then hit the Edit Button.





Once that is completed, the Options Area will add the Toolbox tab which will allow the user to edit data directly on the map.

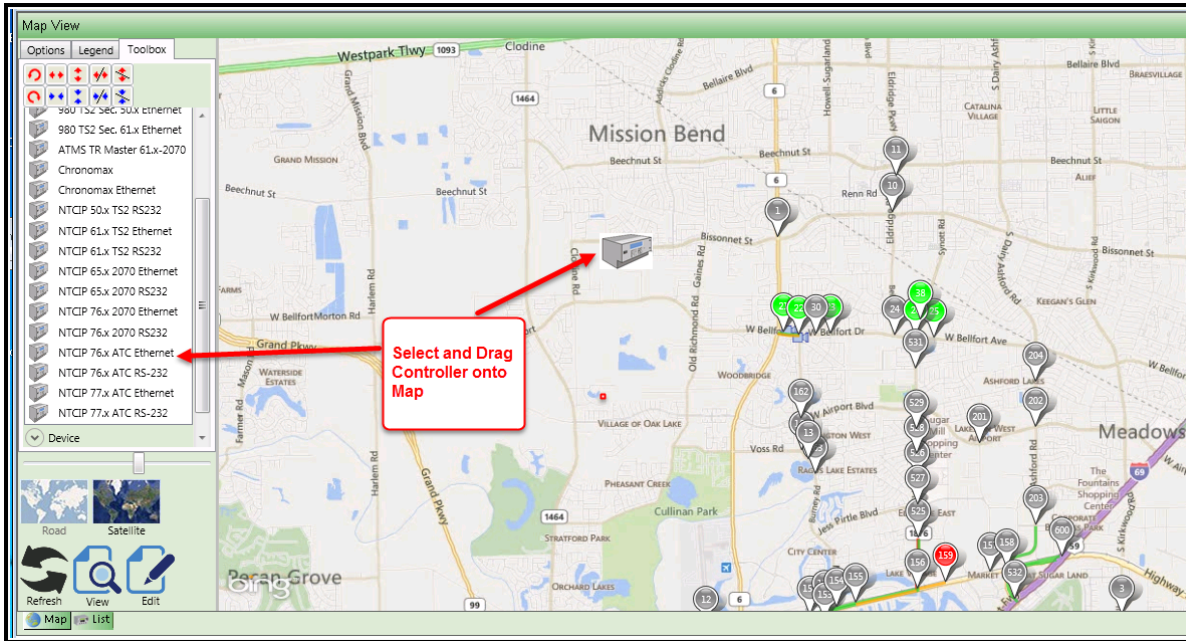


The user can place intersection controllers, devices or scan elements on the Map.

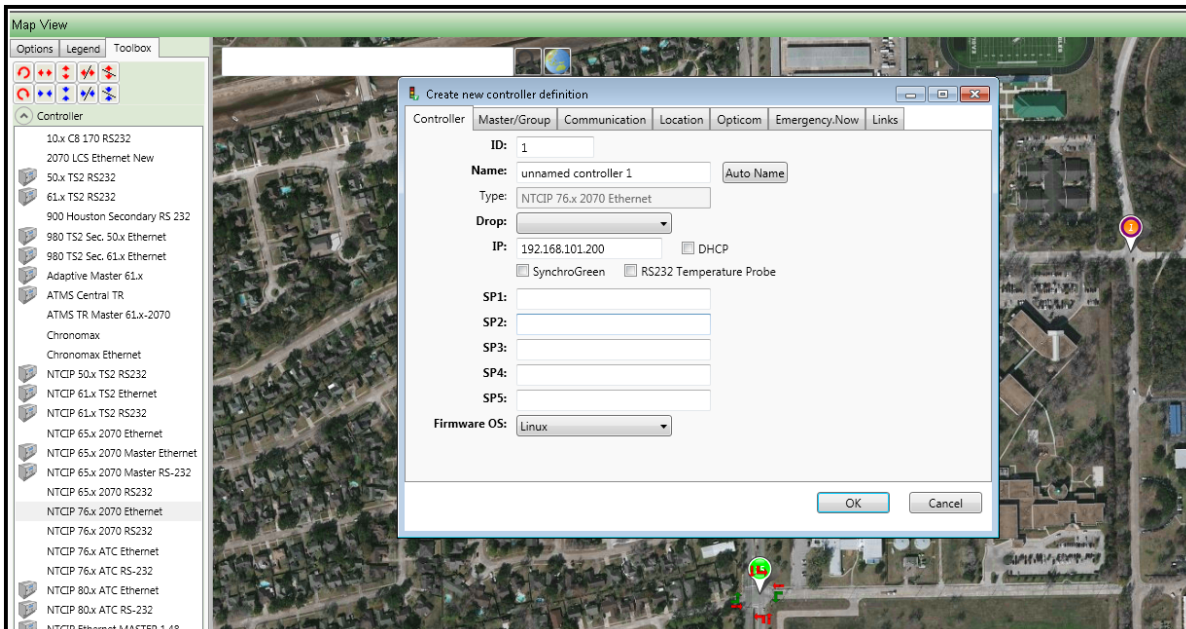
## Controllers, Devices, Events and Scan Elements

To add a controller to the map select **Controller** under the Toolbox. A drop down selection list of controllers will occur. Select the controller type that you want to add to the Map and left click it on your mouse. With the left mouse button depressed, drag the controller and place it on the map at the appropriate position.

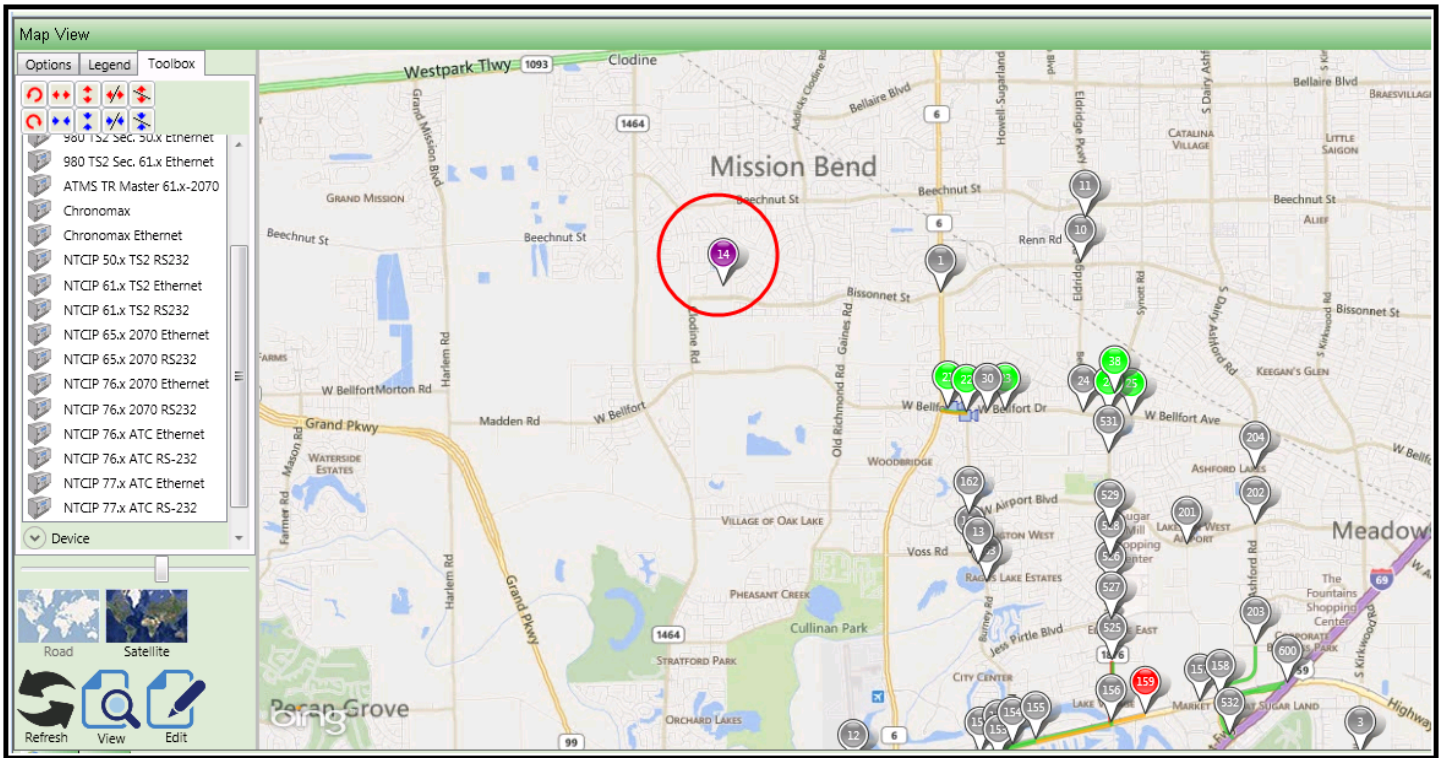
**Note: Controller pin must be placed in the center of the intersection to ensure affective intersection links for Time Space Diagram calculations.**



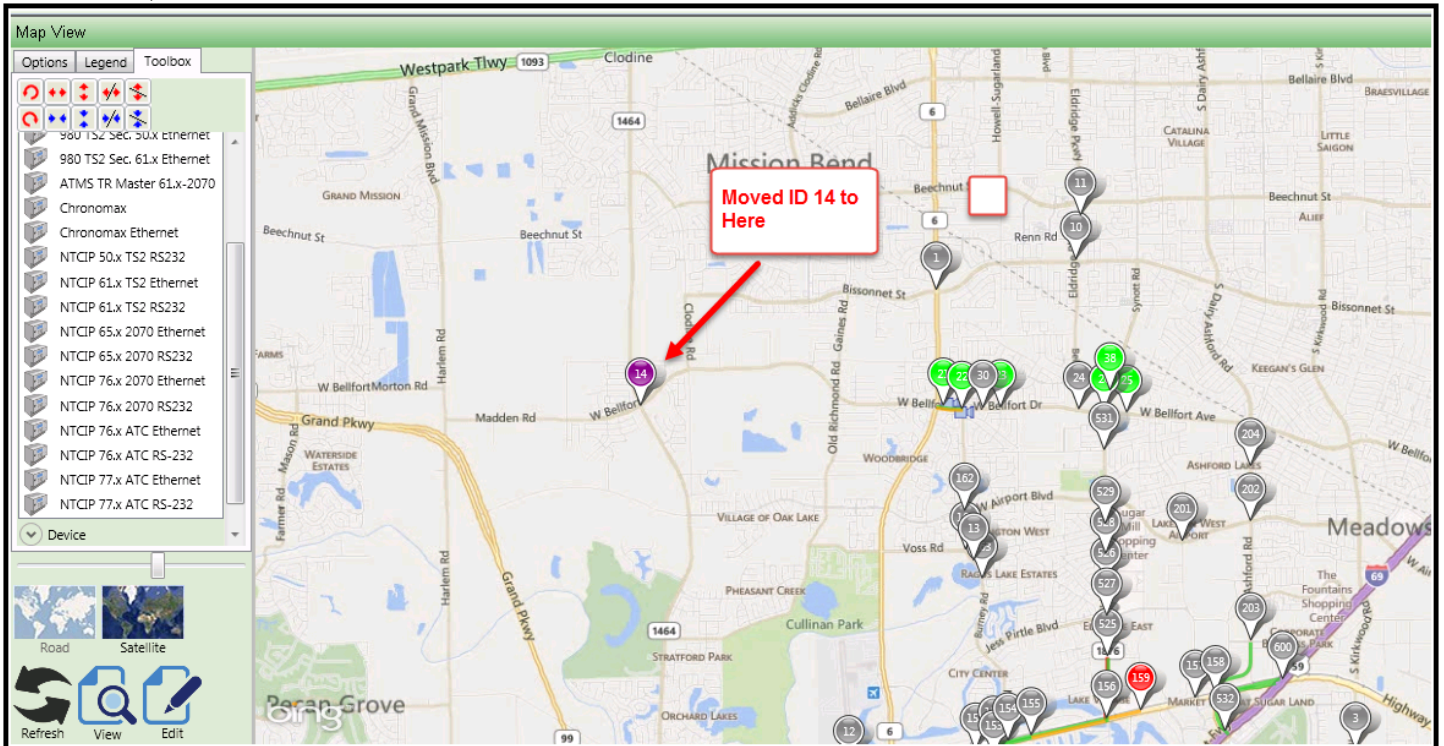
Once you un-click the left mouse button, the following configuration screen will be displayed.



This screen allows you to keep or reenter the controller Station ID, Name, Drop number, IP address and other configuration selections. . Once **OK** is depressed, the controller will be placed on the map.



By left-clicking the mouse and slowly dragging the icon, you can move it to the desired location (center of intersection).

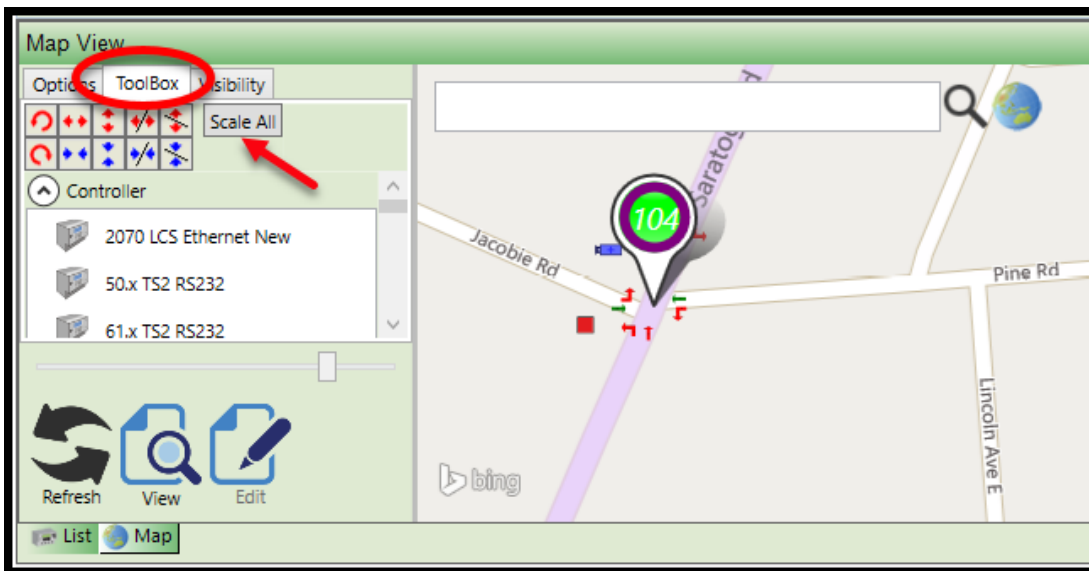


Below is the list of controllers that can be placed on the Map.

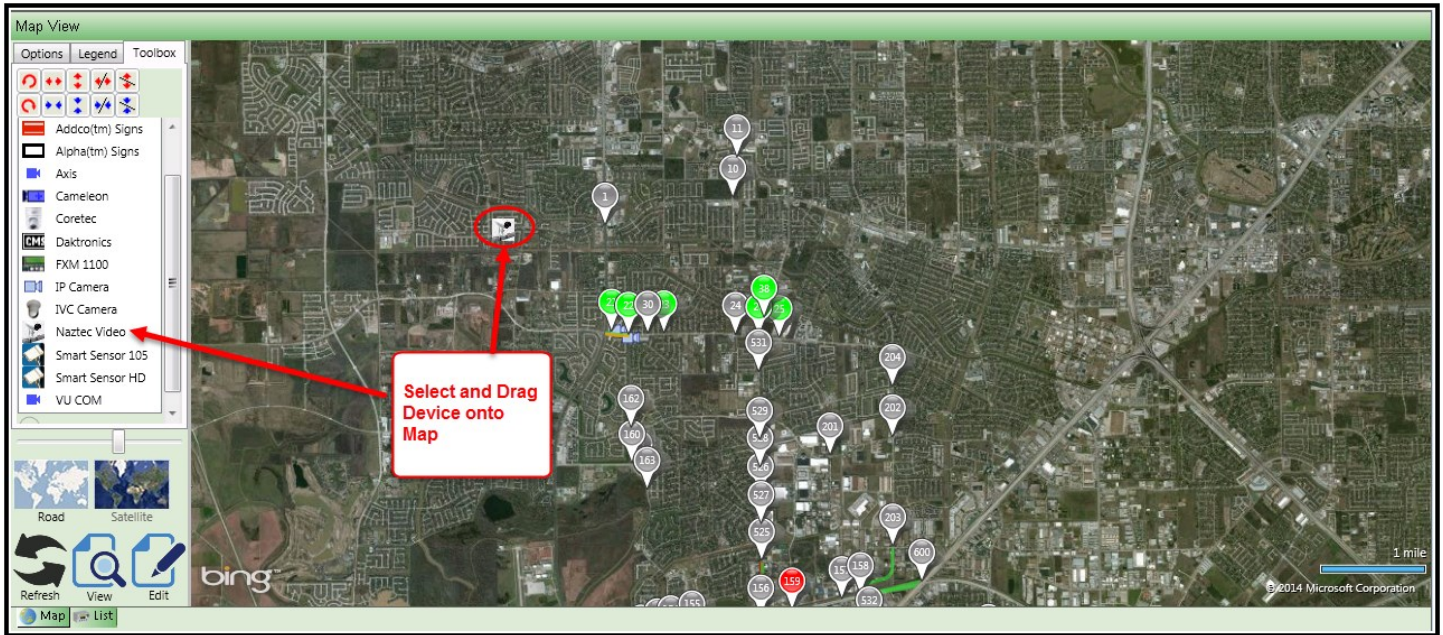




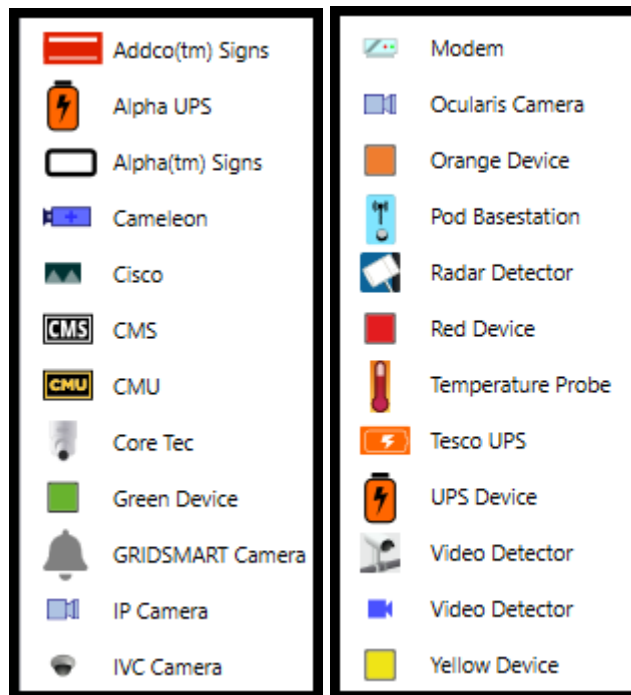
ATMS 2,14 has added the ability to scall all Controller Pushpins on the map to a user selected scale via the editing toolbox. Simply select a controller pushpin, resize it and hit the **Scale All** Button to resize.



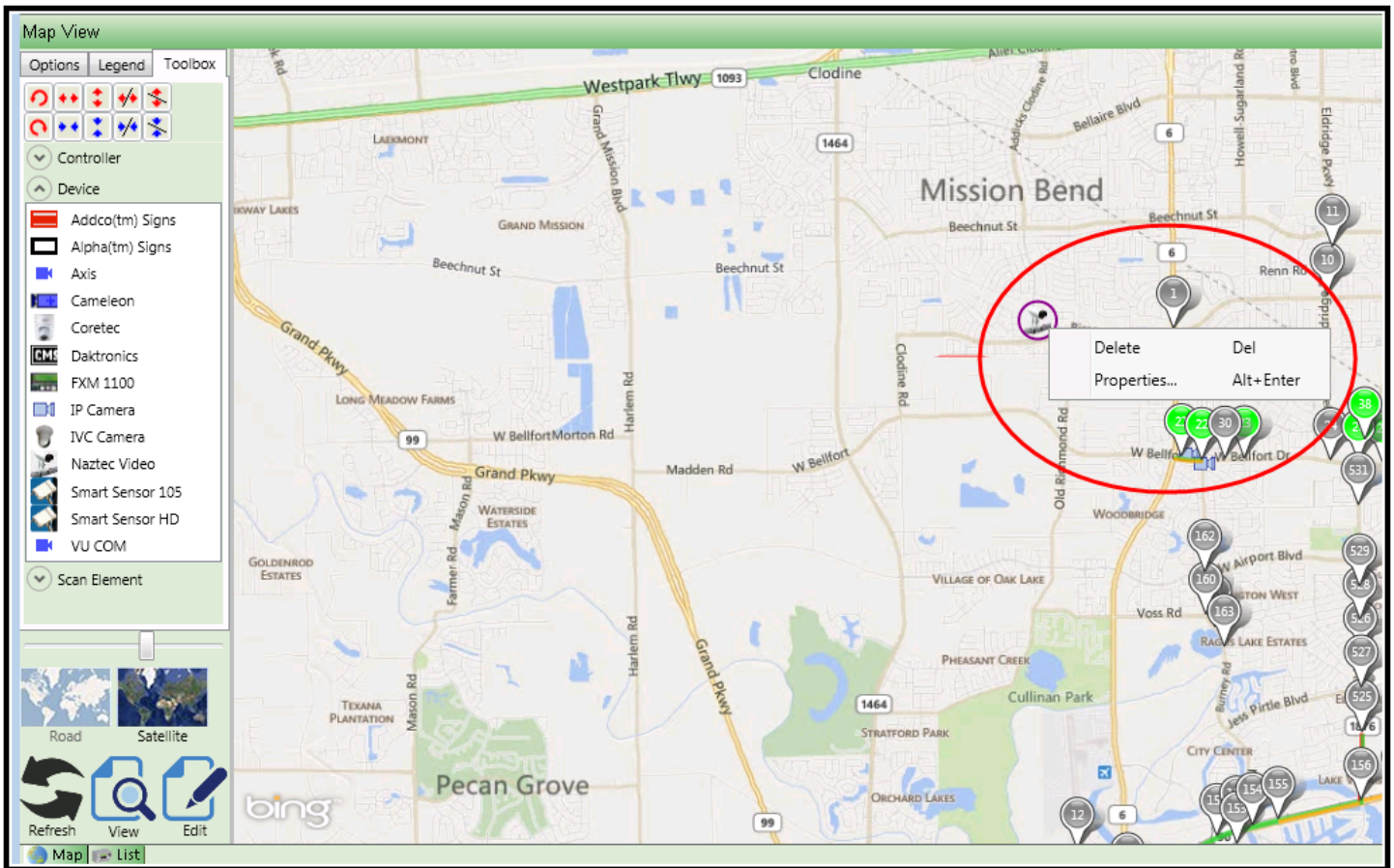
Devices work the same way as Controllers. To add a device to the map, select **Device** under the Toolbox. A drop-down selection list of Devices will occur. Select the device type that you want to add to the Map and left click it on your mouse. With the left mouse button depressed, drag the device and place it on the map at the appropriate position.



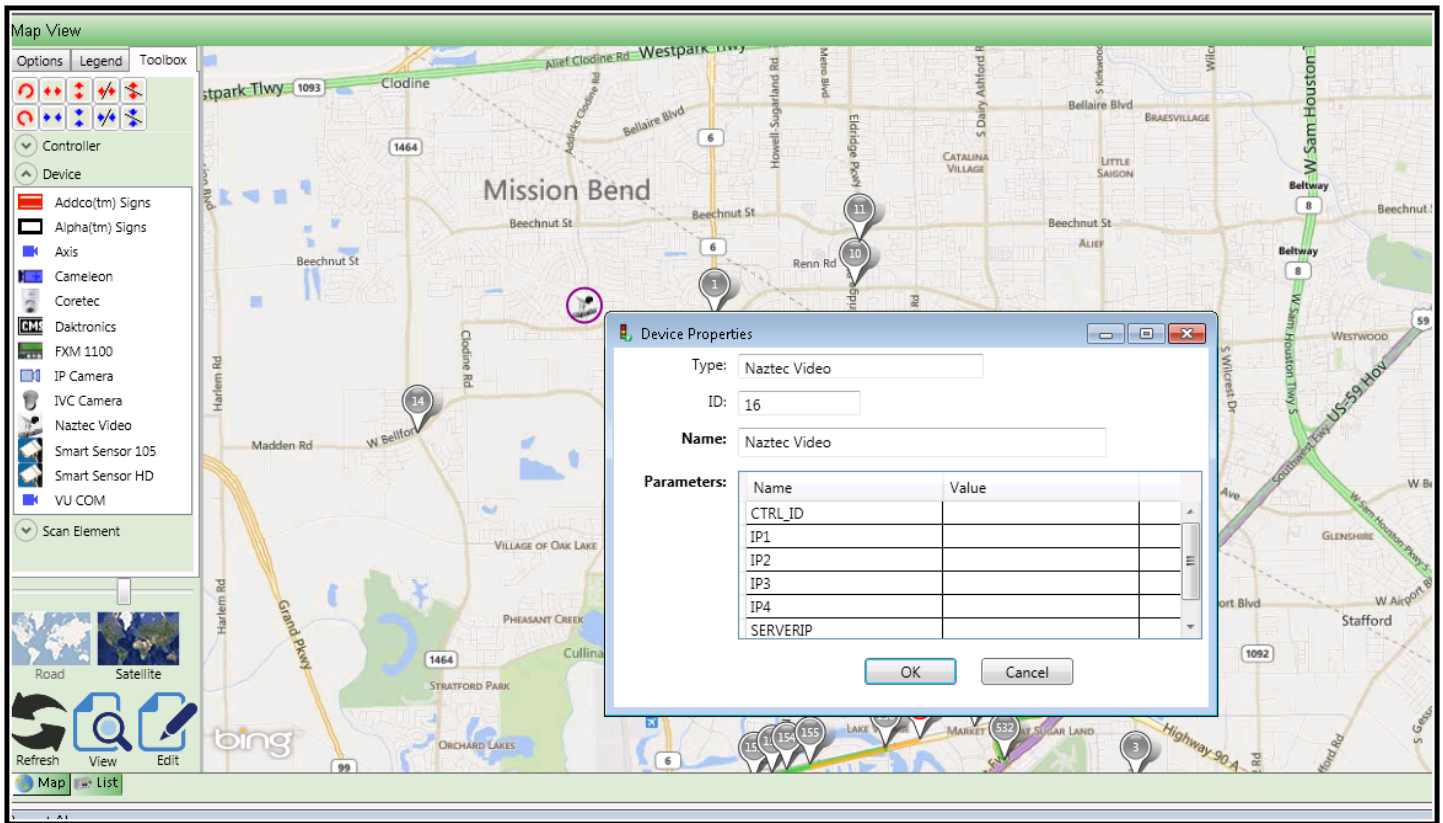
Some of the devices that can be placed on the map are shown below:



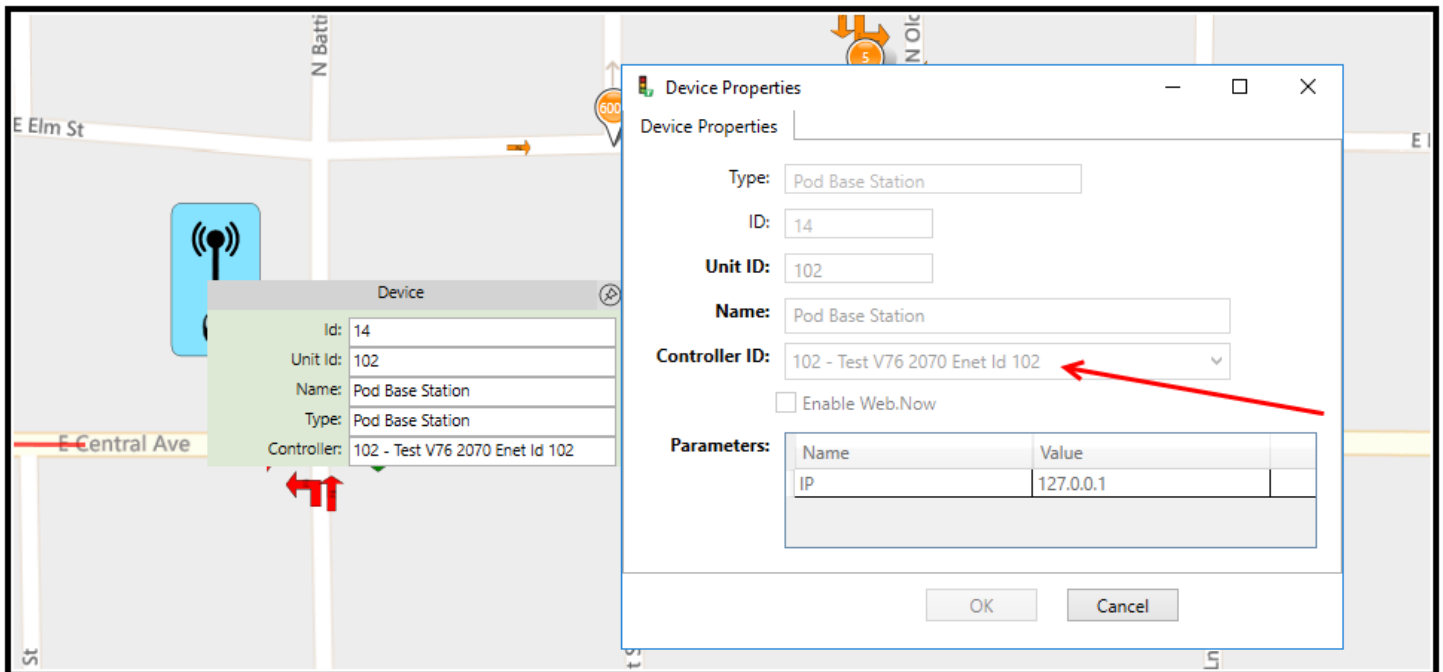
Once a device is selected you can Right-click your mouse and get the ability to delete or change the device properties.



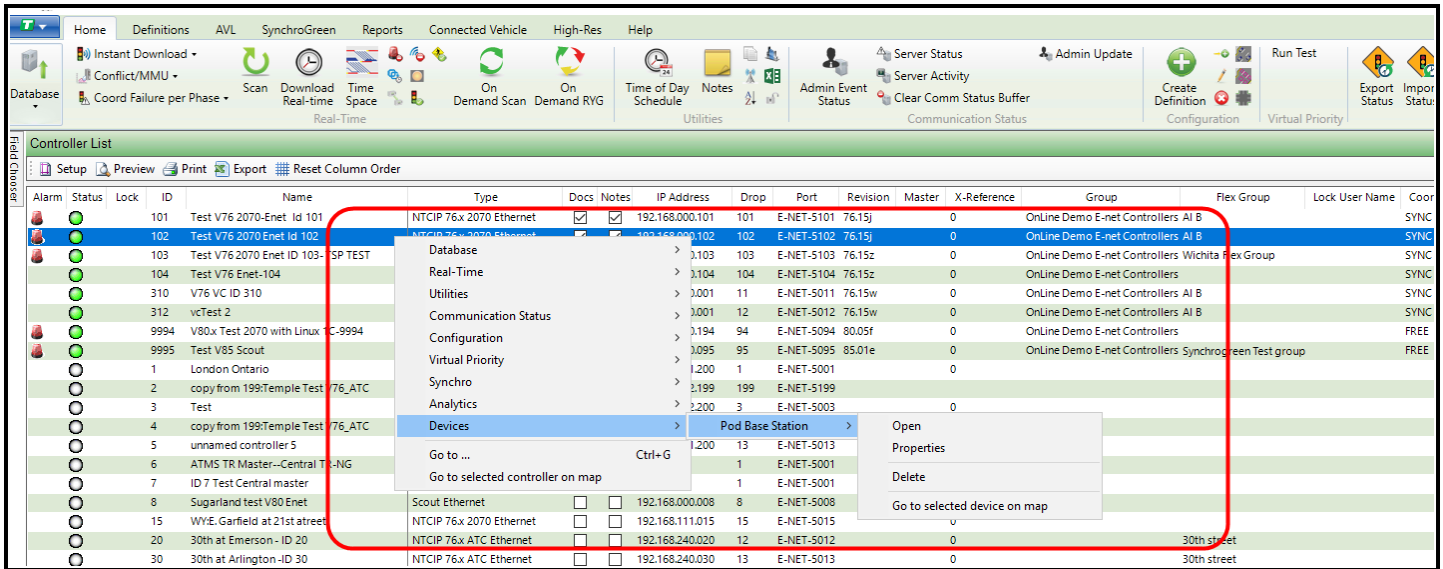
Below is a view when Properties are selected. The user can fill out the appropriate information for the selected device.



Beginning with ATMS 2.10.1, the user can associate a device with an intersection ID under the properties selection as shown below.

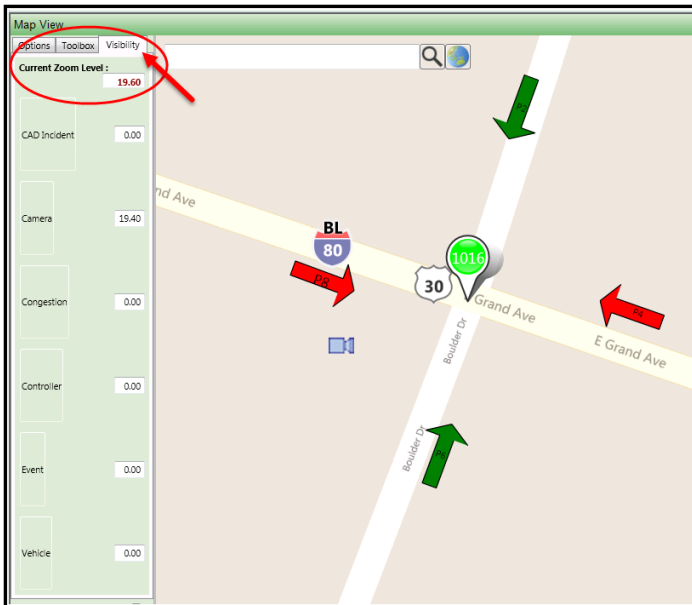


Once a device is associated with an intersection, the user can select the intersection under the List view and select or edit its properties by right clicking via a drop down menu.

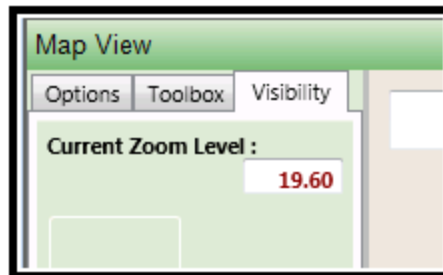


When adding a device to the map the user has the ability to set a Zoom level threshold. If this threshold is exceeded (i.e. zoom out greater than this level) then the device or event will no longer be displayed on the map.

Under the edit mode, select the Visibility tab as shown below. It will show the current zoom level.

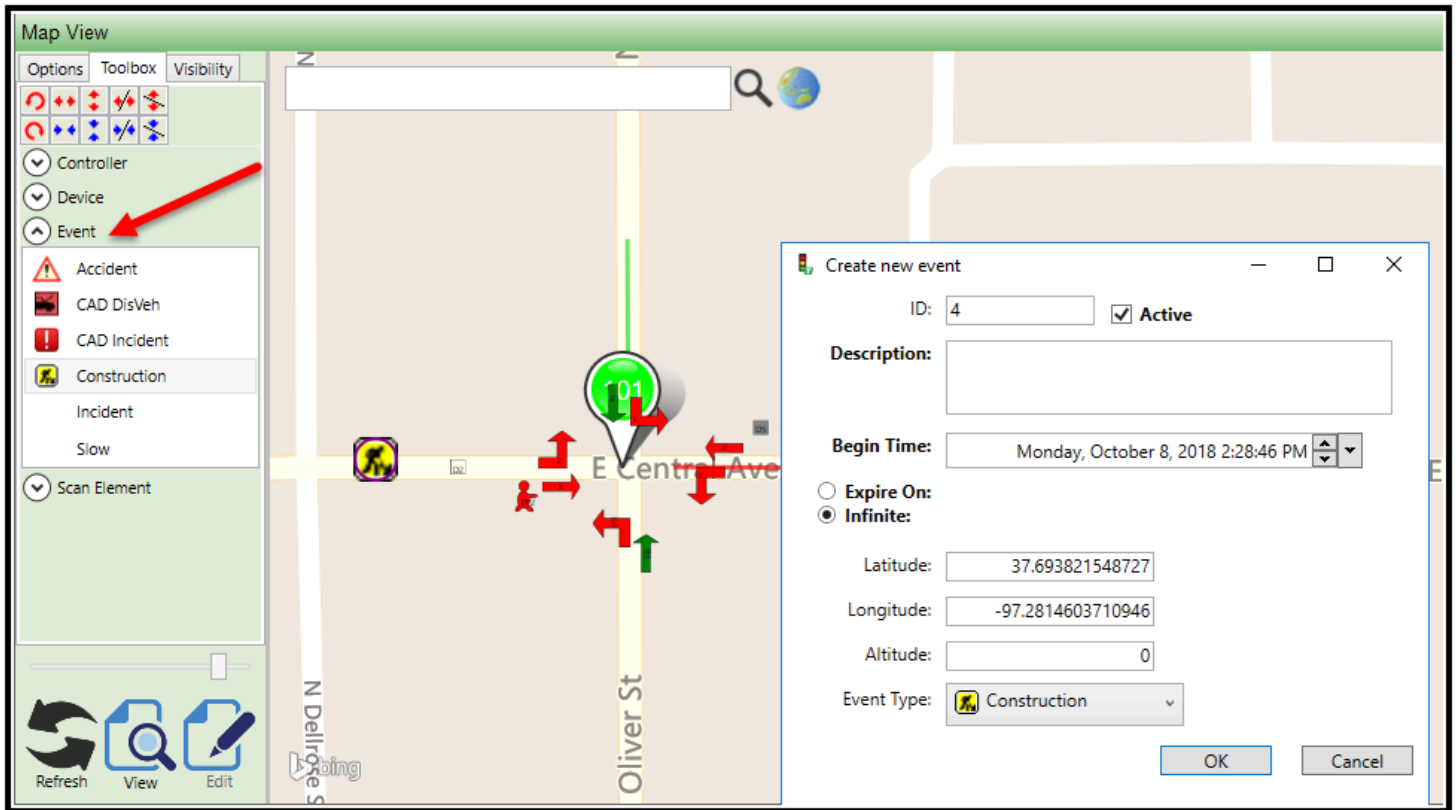


The current zoom level can be changed by simply zooming in/out on the map. Zoom to the desired level and click on the specific device or event to set the zoom level as shown below:



**Starting with ATMS 2.7, Blue Toad integration to show travel time, current speed, historical speed and speed limit is available. Contract your Trafficware representative for further information.**

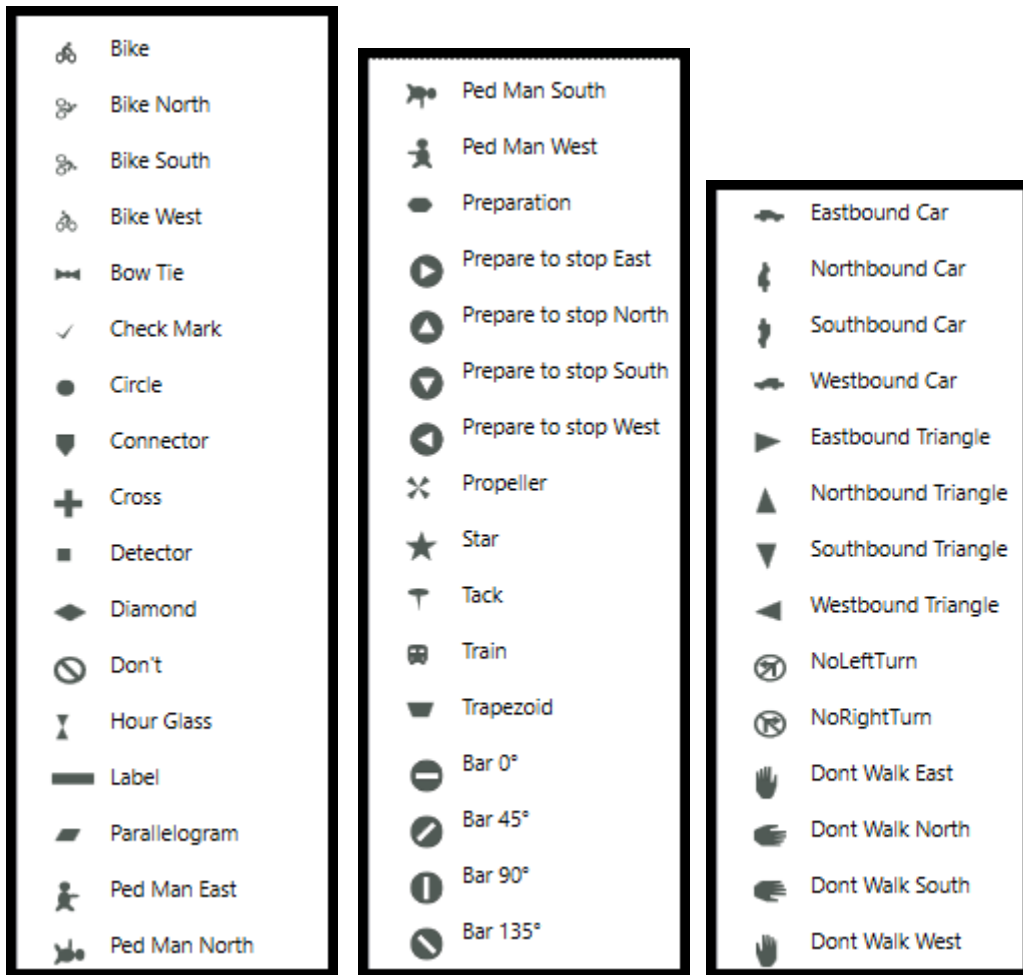
Events can also be added to the Bing maps from the toolbar as shown below. These include Accidents, CAD Events, Construction and Incidents.



Below is a list of Events that can be placed on the Bing map.



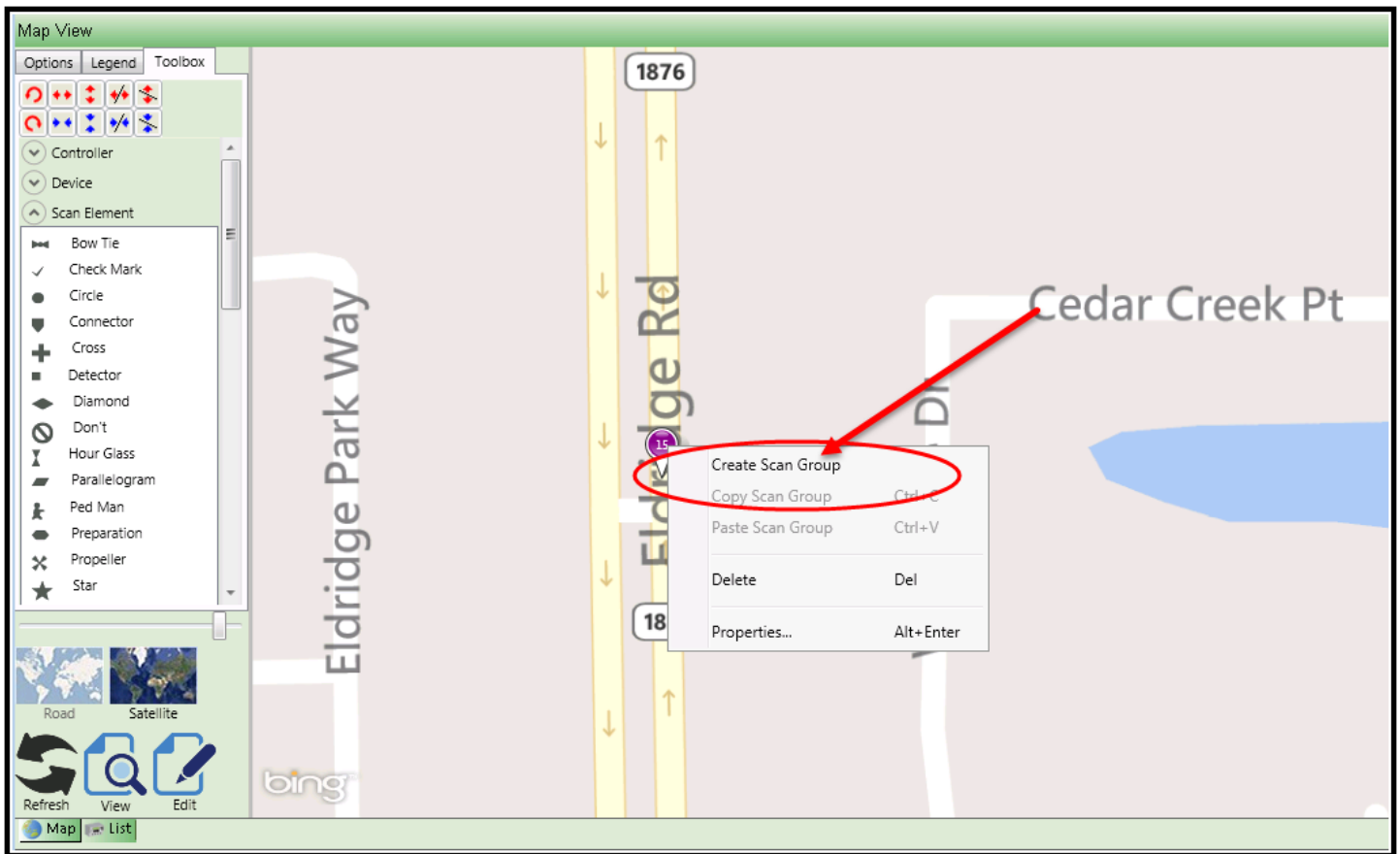
Scan Elements are used for individual controllers to display information concerning intersection control such as RYG Phase status, detector, pedestrian information, etc. The user should zoom into the intersection via the slider bar or mouse thumbwheel before dropping Scan Elements on the map. Then Click on the intersection to select it so that the Scan Elements association can be created. Next, you can drag individual Scan Elements or utilize the utility named Create Scan Group, which drops STD8 phase scan elements around the selected intersection. The scan elements are shown below:



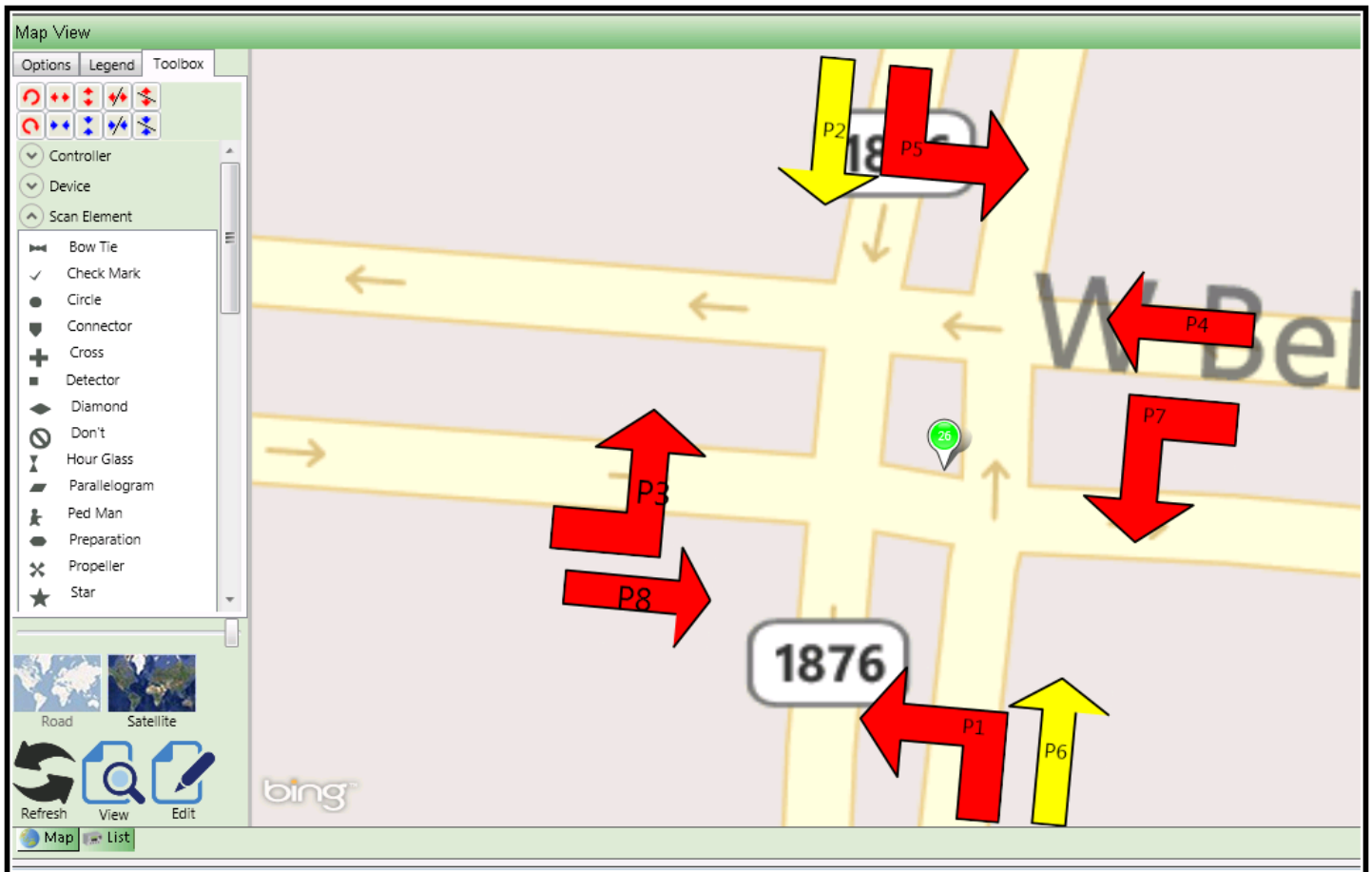
**Starting with ATMS 2.9, Directional arrows are created using the *Configuration->Intersection Layout* tool. Details of this tool are described in chapter 5 of this manual.**



The Create Scan Element Utility is available when you right click the mouse as shown below.

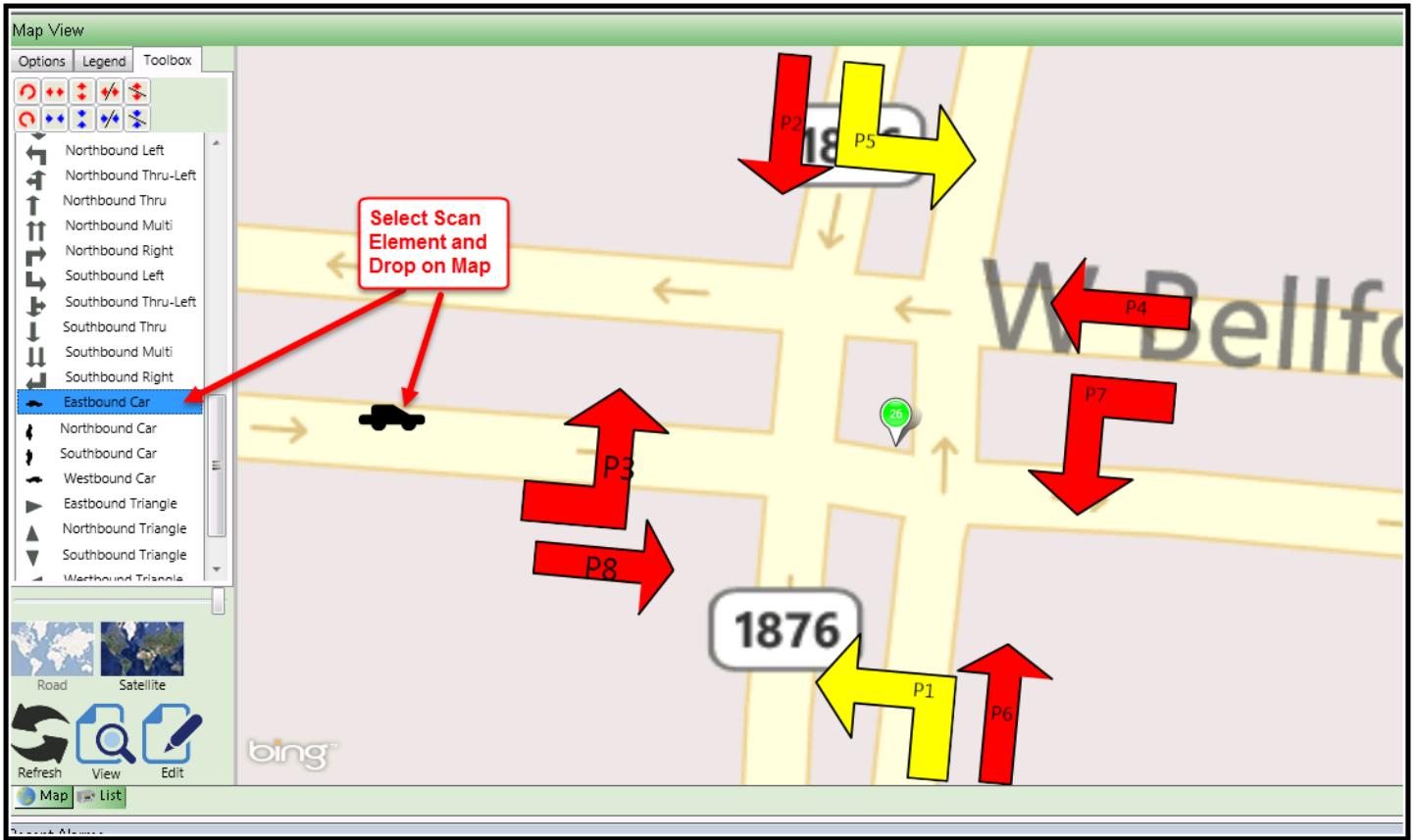


Once that is selected the RYG Phase Scan elements are dropped on the map. **It is recommended to use the Intersection Layout Tool. See Intersection Layout**

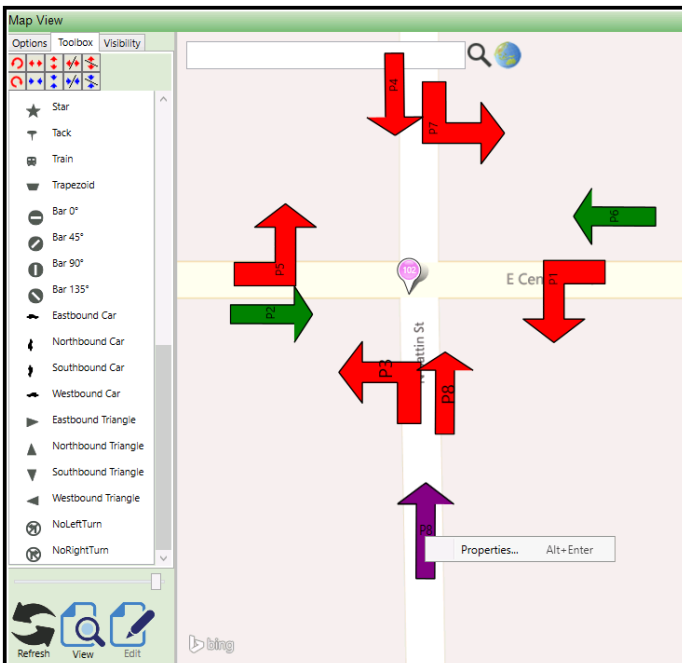


Scan Elements work the same way as Controllers. To add a device to the map select **Scan Element** under the Toolbox. A drop down selection list of Scan Elements will occur. Select the Scan Element type that you want to add to the Map and left click it on your mouse. With the left mouse button depressed, drag the Scan Element and place it on the map at the appropriate position.

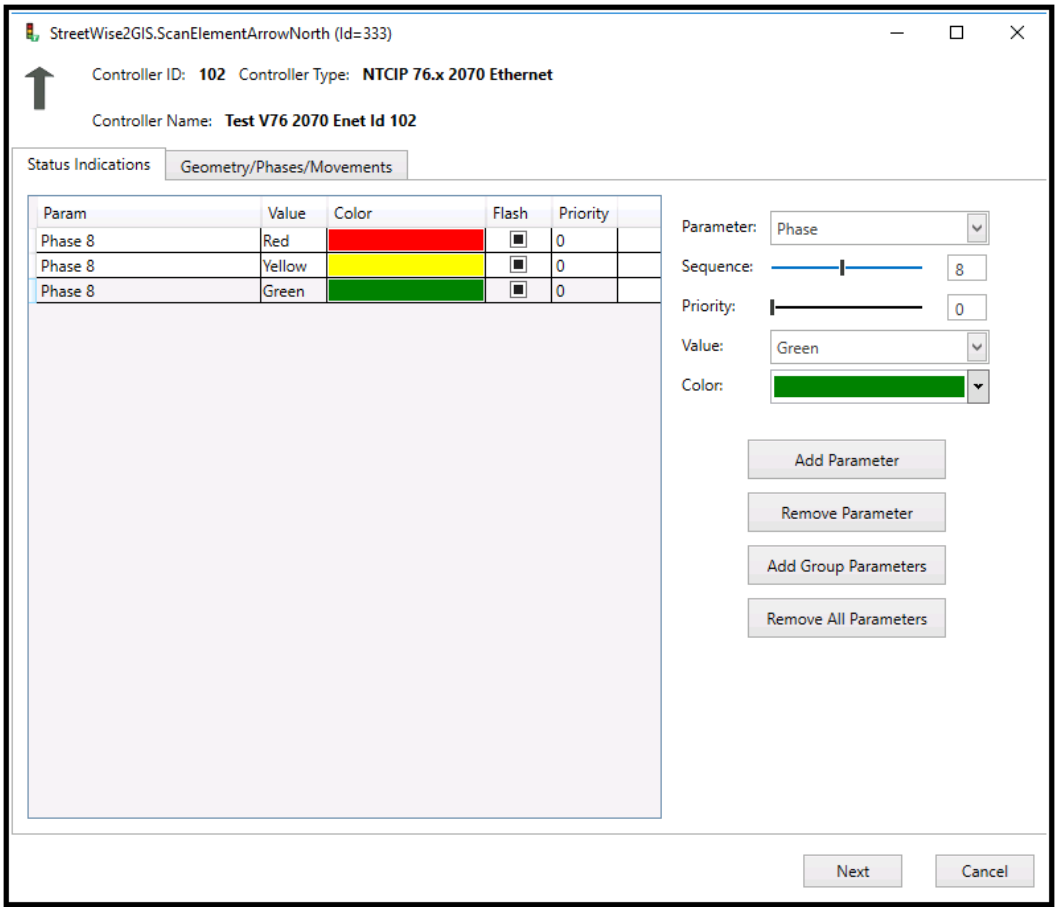
**NOTE:** Users **must** use the Intersection Layout tool (*Configuration->Intersection Layout*) if the user wants to add and display scan elements, such as detectors on the ATMS Map view. Without setting up an Intersection Layout, any user added scan elements will not be displayed properly.



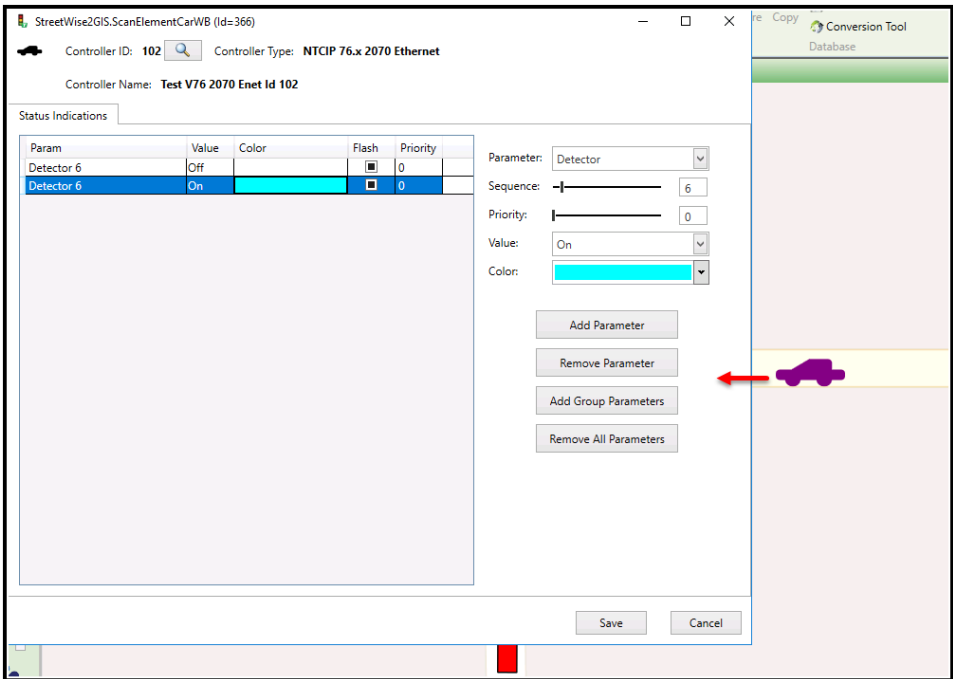
Once placed on the Map the user can select it and by clicking on it a drop down menu will be shown



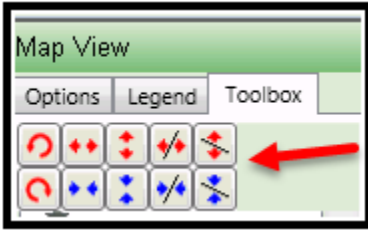
Select Properties to edit the scan element. The screen below shows the properties for a Phase 8 Northbound Arrow



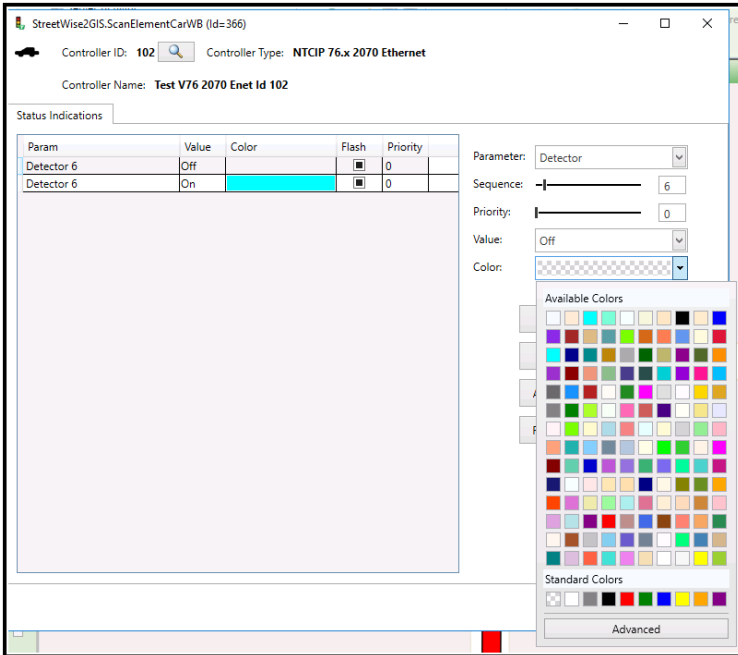
The screen below is associated the scan element to be displayed when a Phase 6 Eastbound vehicle call is shown on the controller.



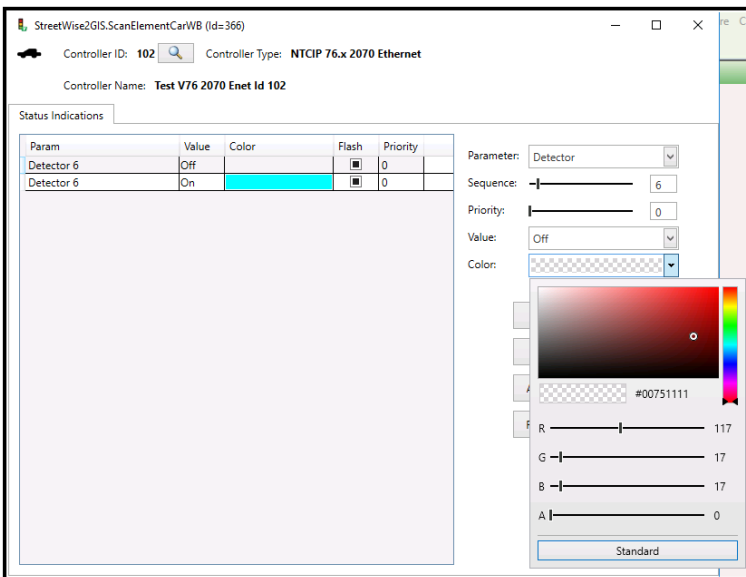
Scan elements can be sized, rotated, mirrored, etc. vial the scan tool bar.



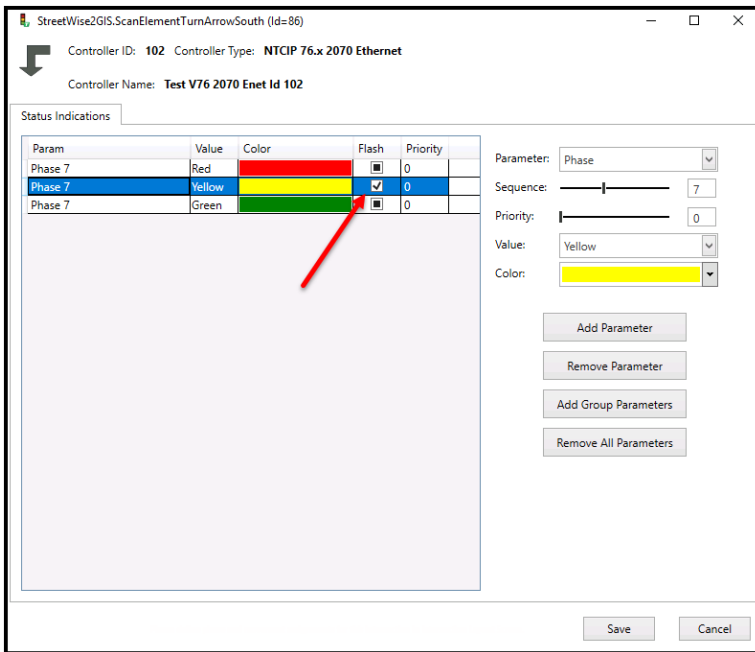
Colors for scan elements can be selected using the color drop-down menu.



An extended color palette can be chosen via the advanced button:

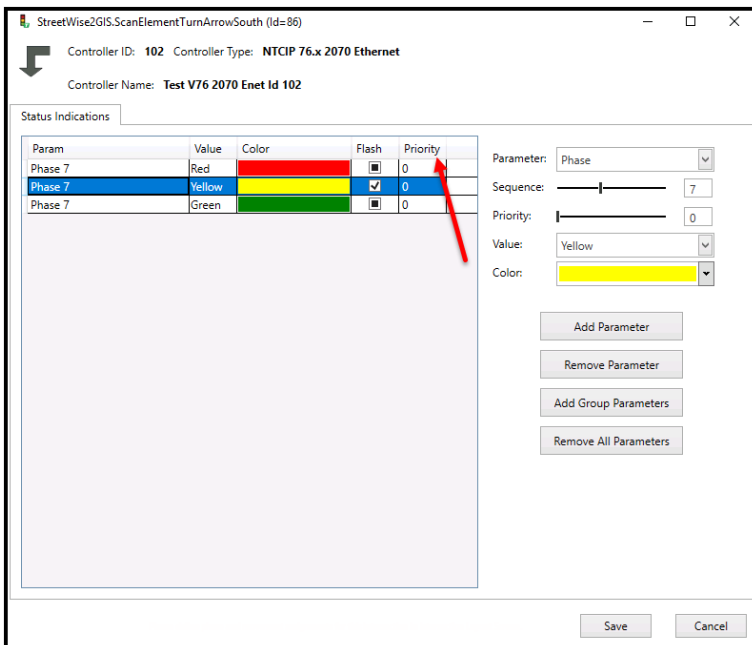


In addition, any scan element may be flashed on the map by simply selecting flash as shown below:



This can be useful in displaying flashing yellow arrows, etc.

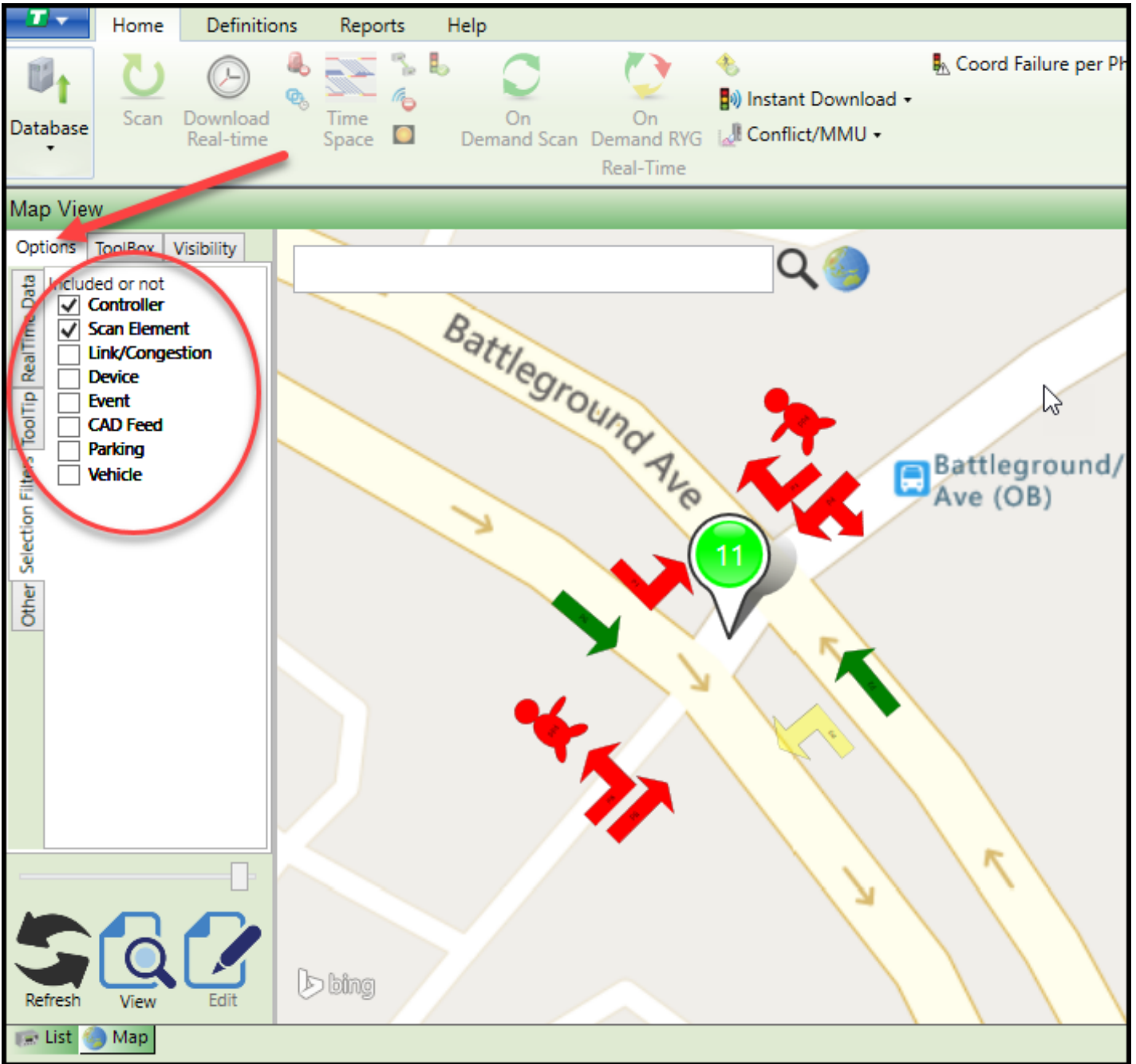
In addition a display priority number is also available to prioritize the display of an individual parameter if the user has an elements that may want to be displayed at the same time. Priority levels go from 0-16 where 16 is the lowest priority display and 0 is the highest priority display.



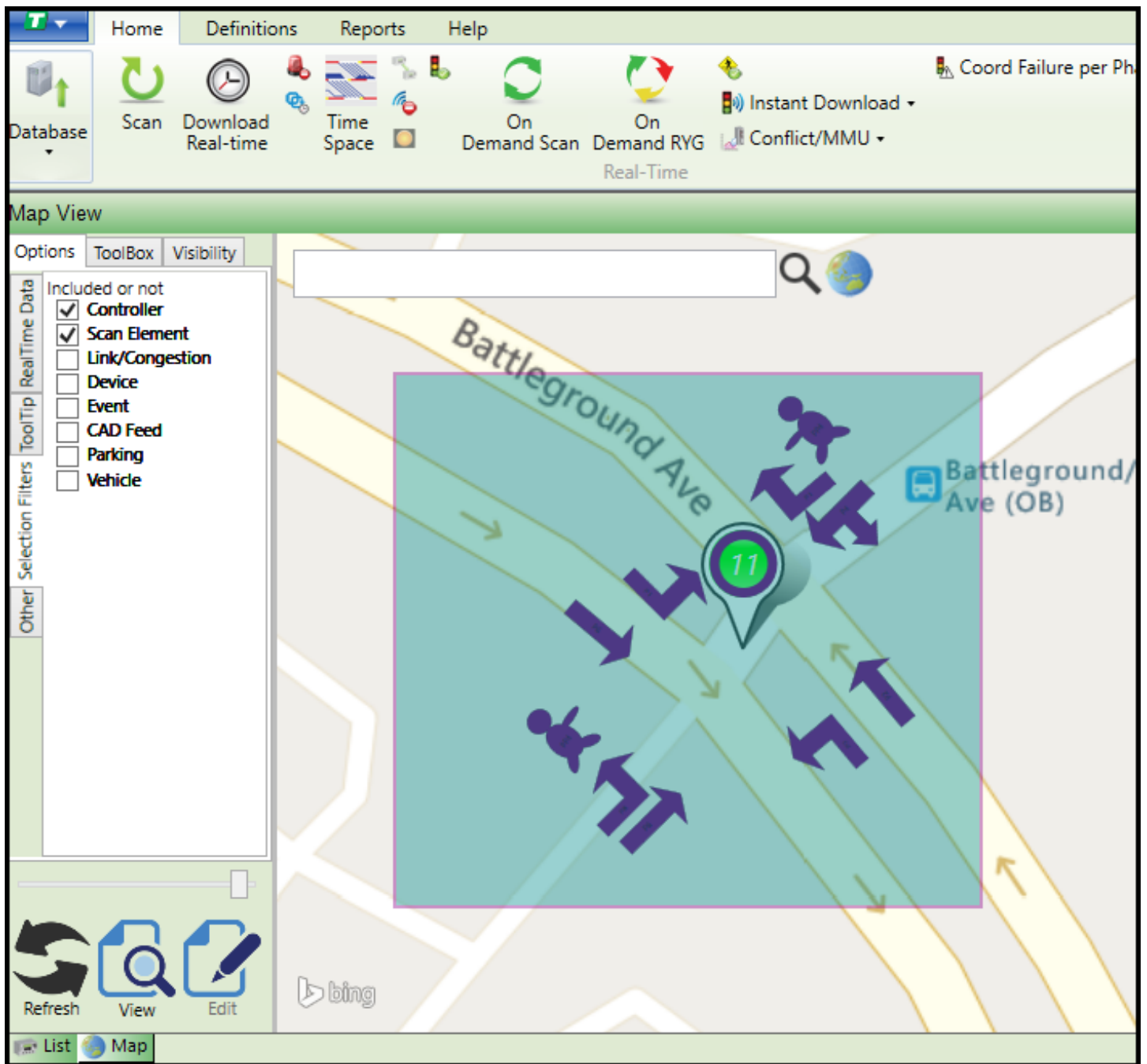
For GIS Scan elements, please refer to Section 6.20 of this manual.

### 4.4.13 Group Copy/Paste/Delete Controllers and Scan Elements from Bing Map

The user has the ability to copy, paste, or delete controller or its scan elements from the Bing Map. The user must first select the group of items that they want to group together using the Options Tab on the Map legend. In the example below we would like to create a new controller on the Bing Map by copying existing controller ID 11 and its scan elements. First select **Edit Mode** on the legend and the Options Tab. Next go to the **Map Selection Filters** area and select **Controller** and **Scan Element**.

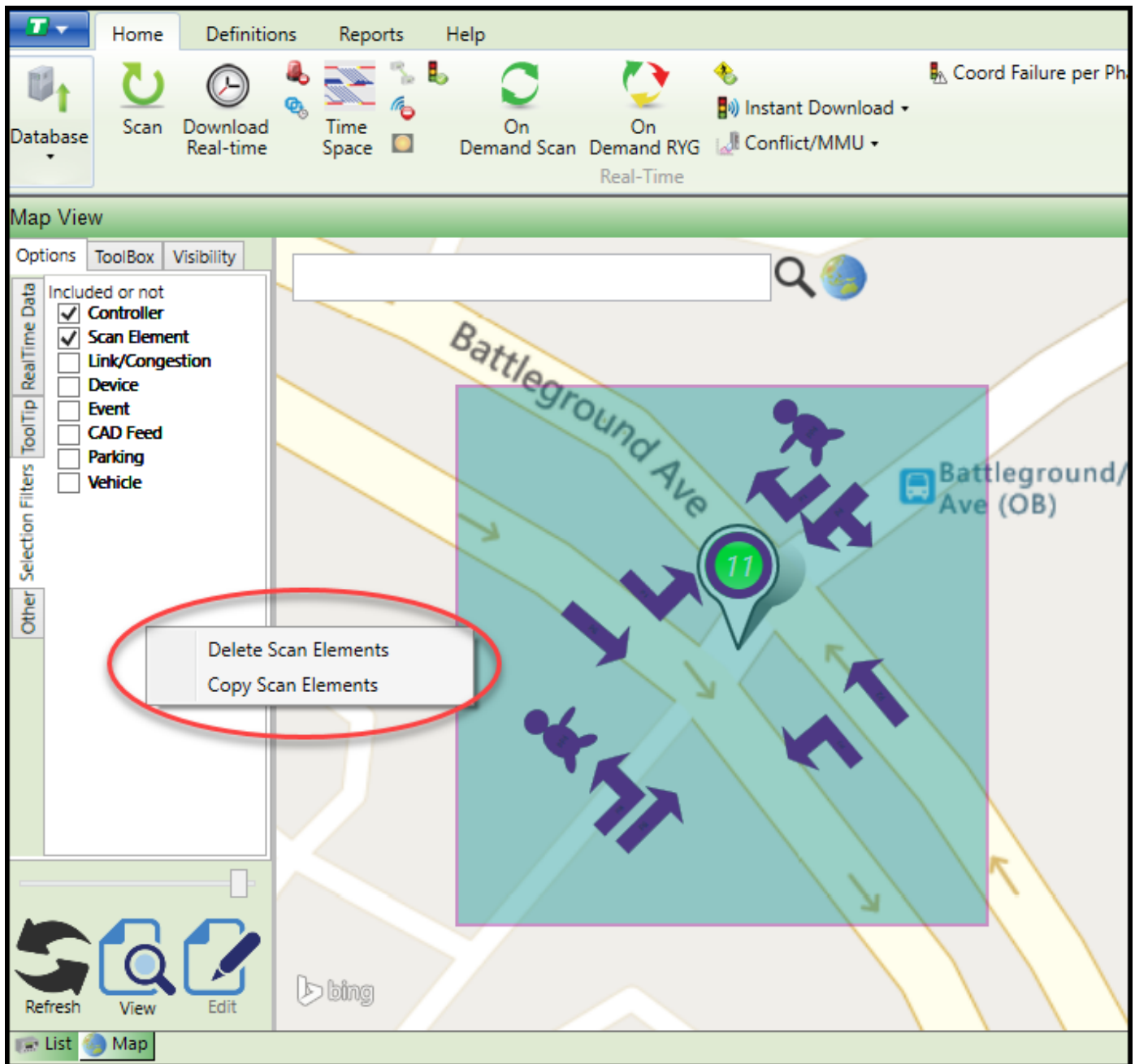


Using the CTRL key and right clicking the mouse you can select Controller ID 11 and its Scan elements.

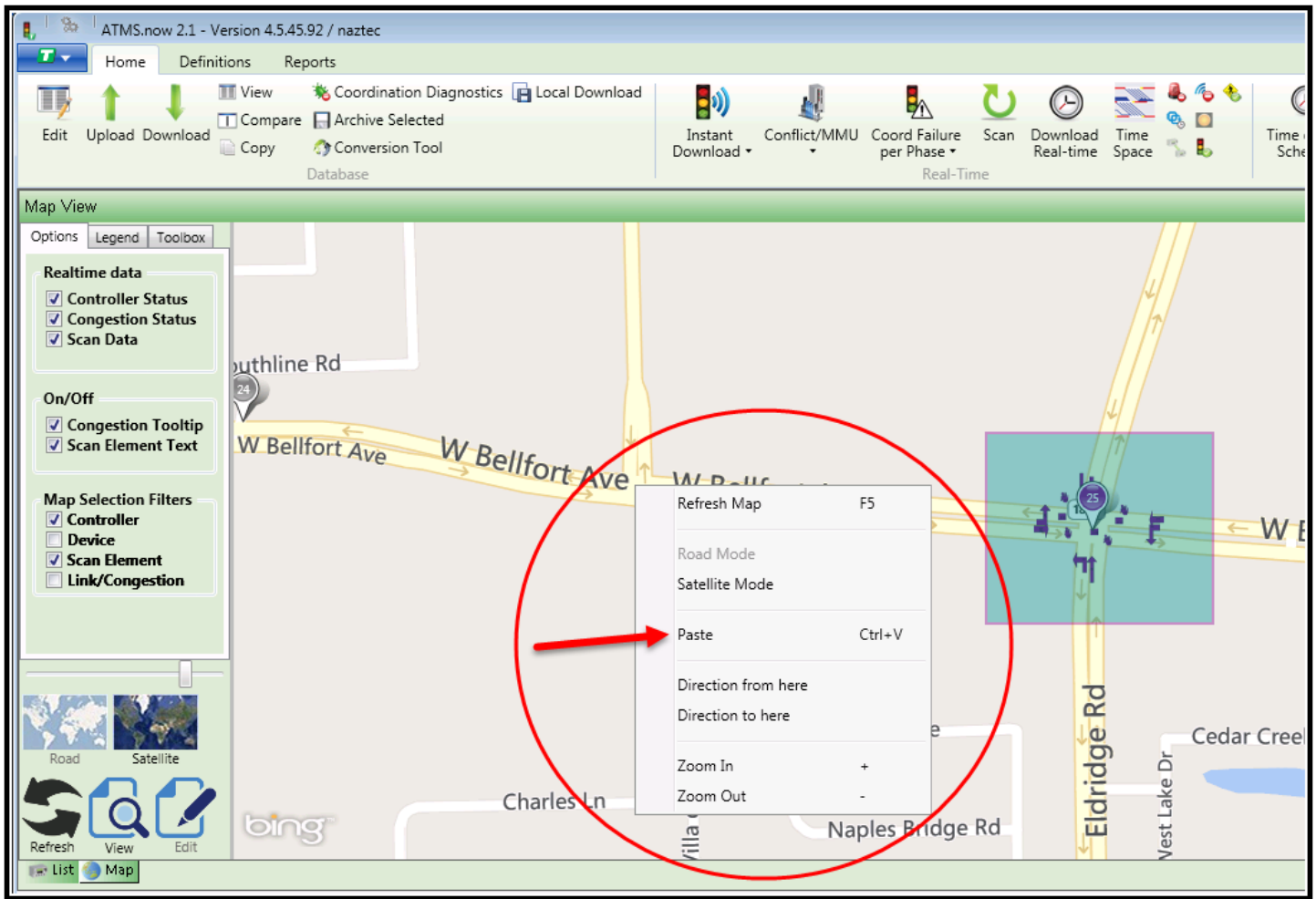


Next Right click the mouse and the following selection screen will come up.

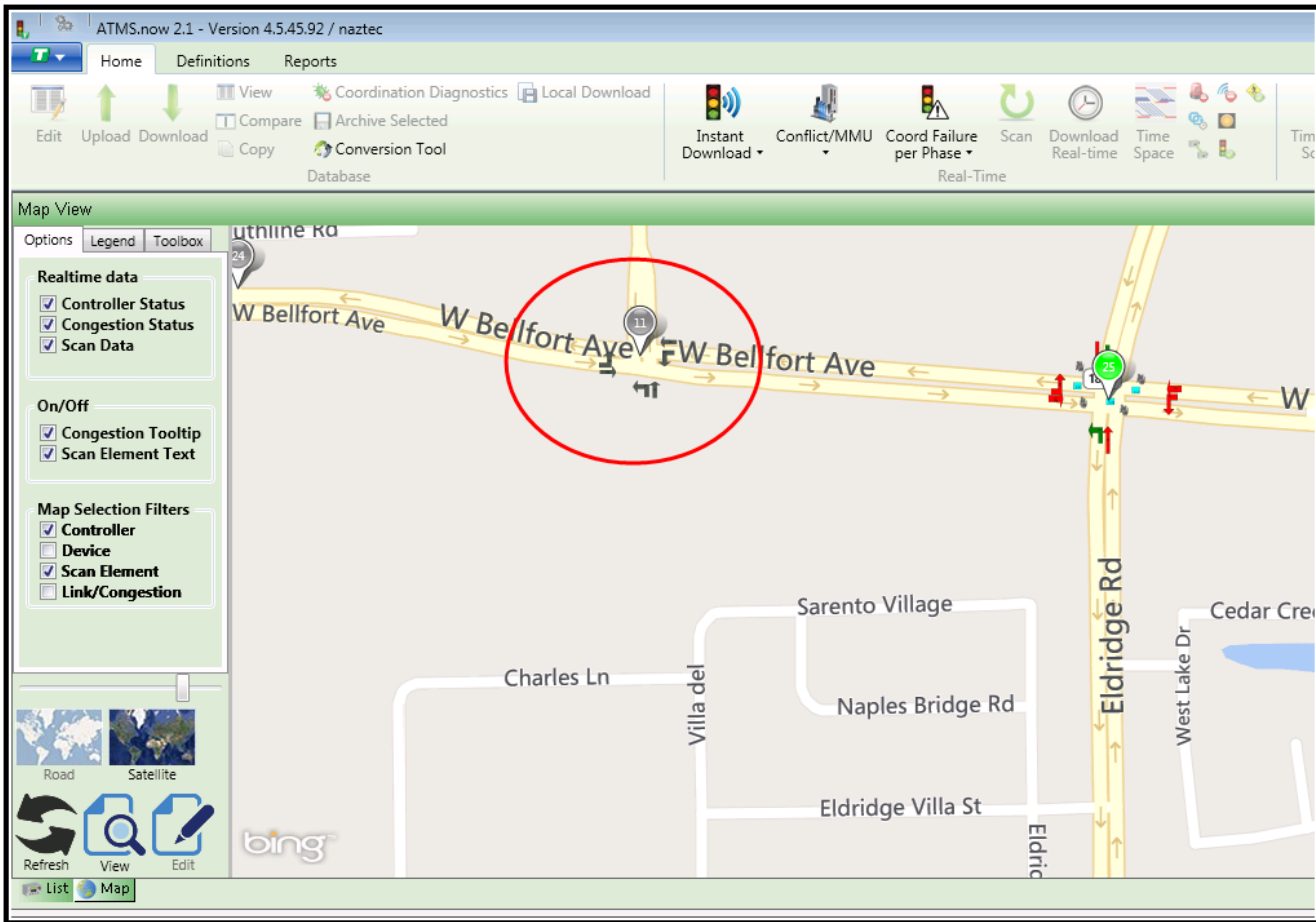




Select Copy to copy. Next move the mouse pointer to the location that you want to paste the new Controller and its Scan Elements to. Right click the mouse and you will see the following screen.



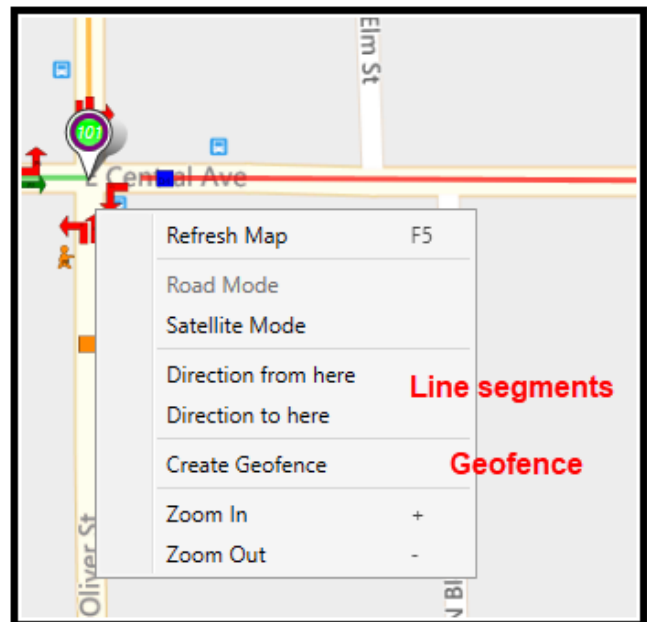
Select Paste and the controller and its Scan Elements will be placed on the Map. The Controller will be given the first unused ID Number.



Please note that only the Controller Definition and scan elements will be copied on the map.

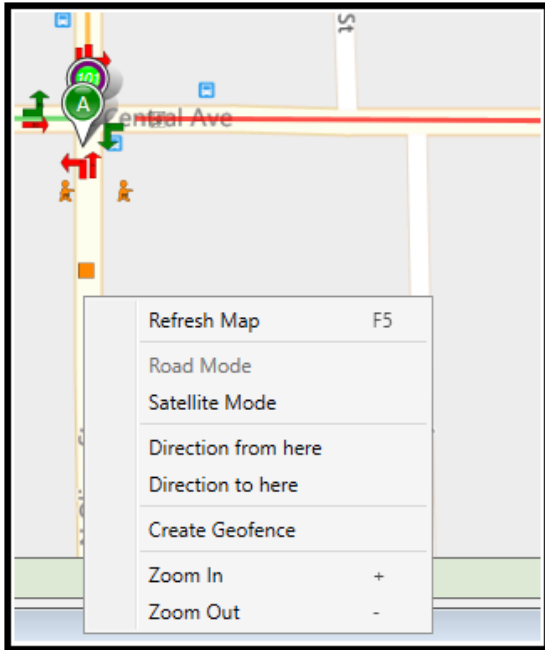
#### 4.4.14 Segments and Geofences

Editing segments for Line Segments (Congestion lines) and Geofences (Rail Adaptive Module) can be easily done on the Bing Map under edit mode. Select the controller and then go to the Map edit mode. Right click and you will see the following selection menu:

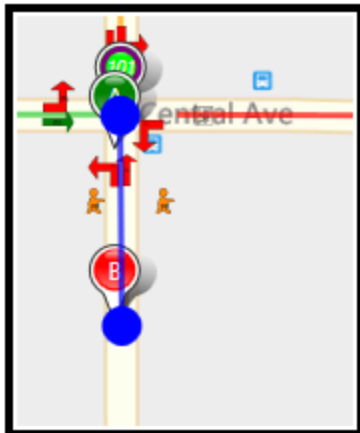


## For line segments:

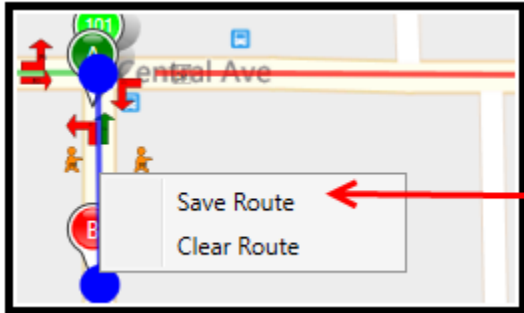
- 1) Select the intersection
- 2) Point your mouse at the starting point
- 3) Right click and with the left mouse button click on “*Direction From Here*”. You will see a pushpin with an “*A*” be displayed.



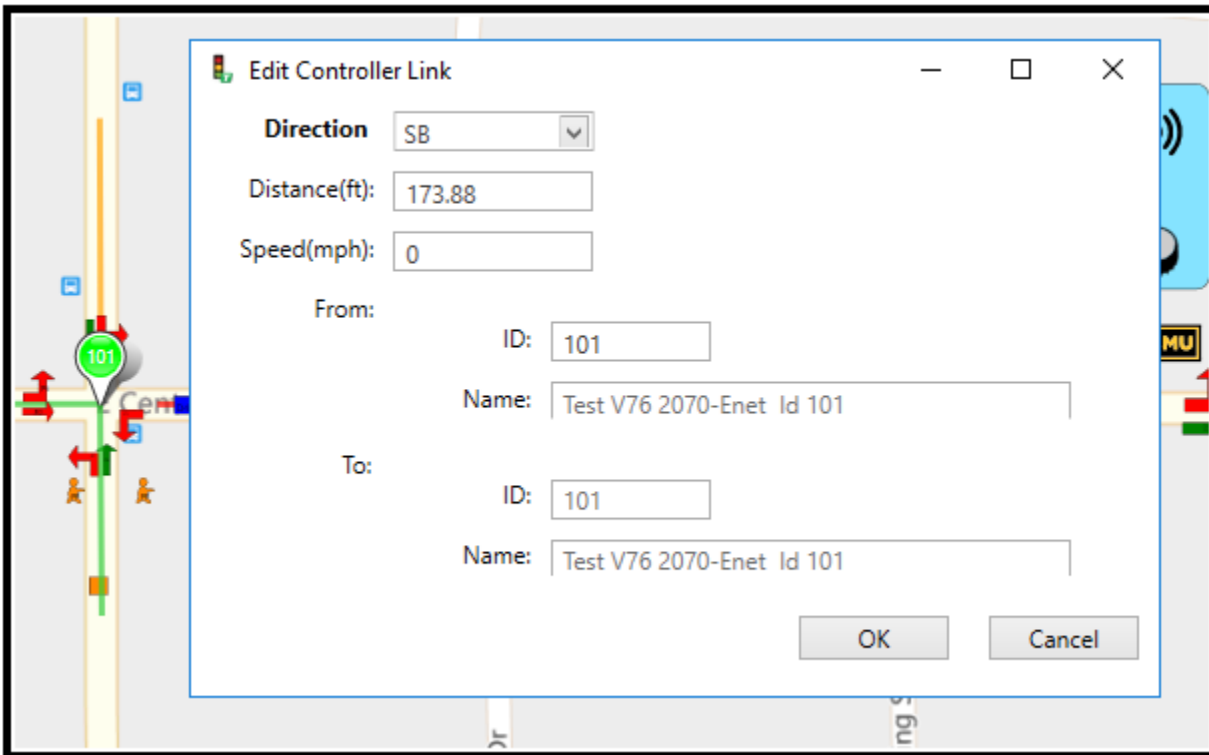
- 4) Point your mouse at the ending point
- 5) Right click and with the left mouse button click on “*Direction To Here*”. You will see a pushpin with an “*B*” be displayed.



- 6) Click on the segment and choose “*Save Route*”.



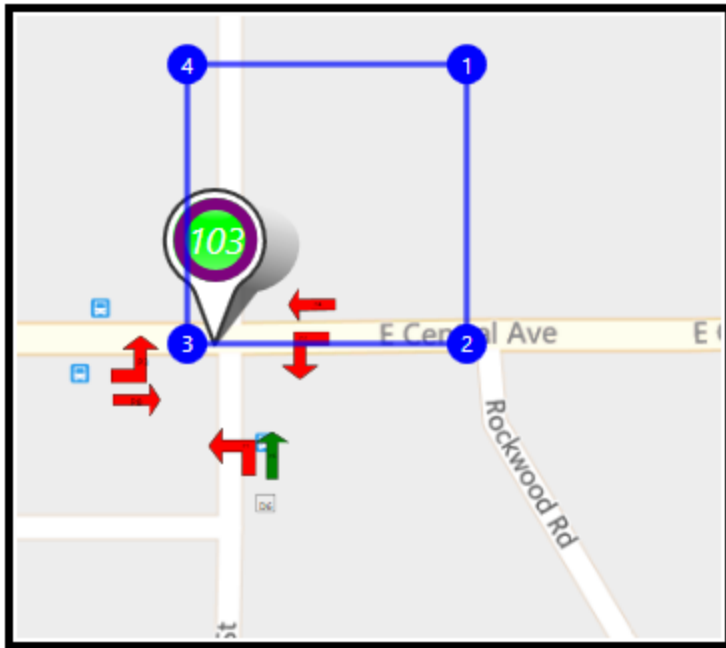
- 7) Go to the View Mode
- 8) You can then right Click on the line segment and choose Properties to select the data.



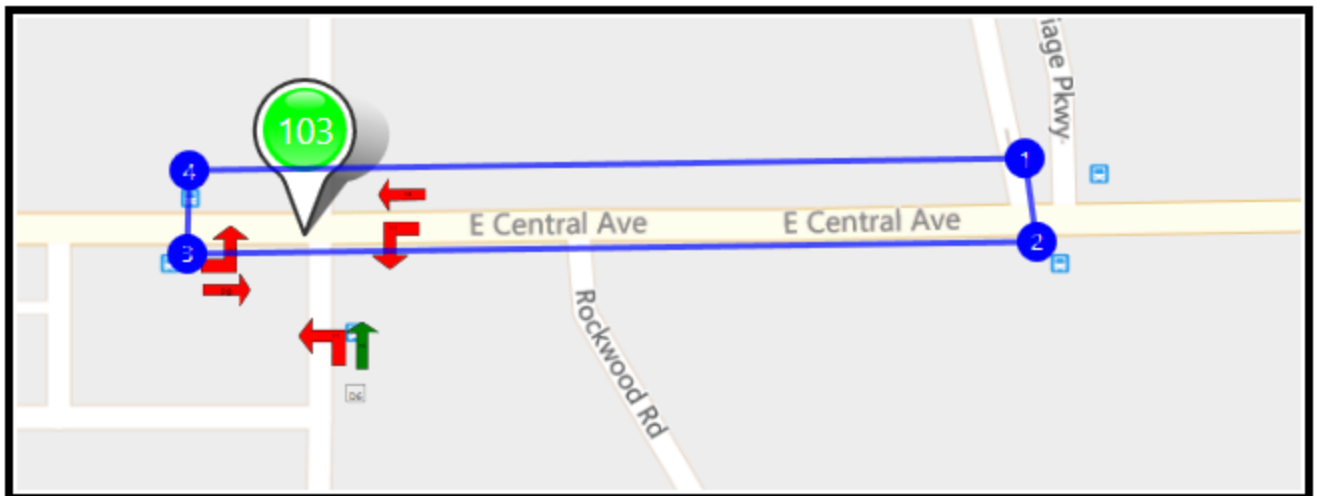
- 9) Once controllers are linked refer Section 5.6.7 to the “*Intersection Layout*” tool and select “*Congestion Threshold*”

### For GeoFences:

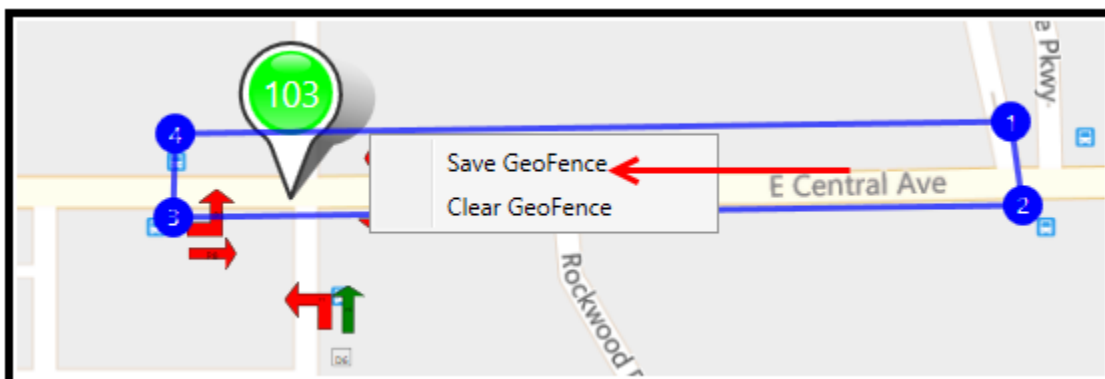
- 1) In Edit mode select the intersection
- 2) Point your mouse at the starting point
- 3) Right click and with the left mouse button click on “*Create Geofence*”. You will see a 4 Pushpins that create a fence.



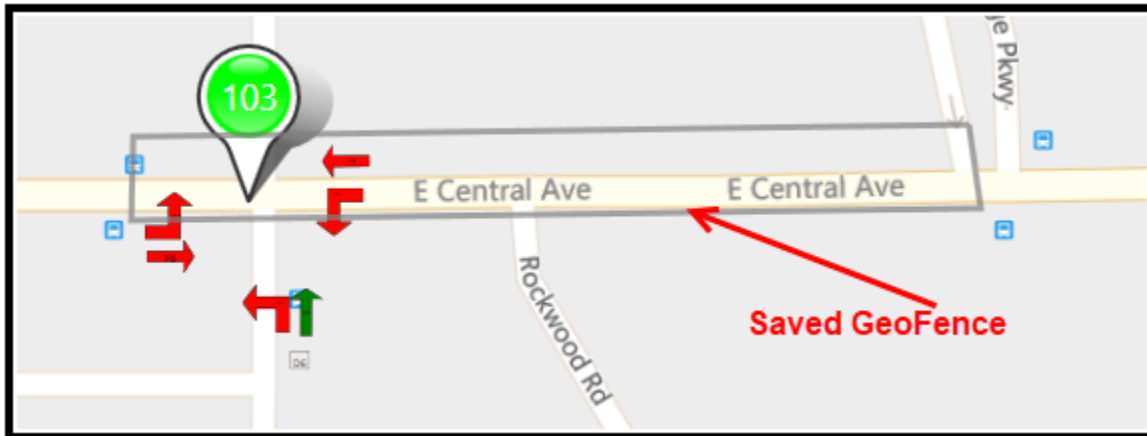
- Point your mouse at each Point and modify the fence layout to create the area that is valid for the Rail adaptive vehicle to travel through.



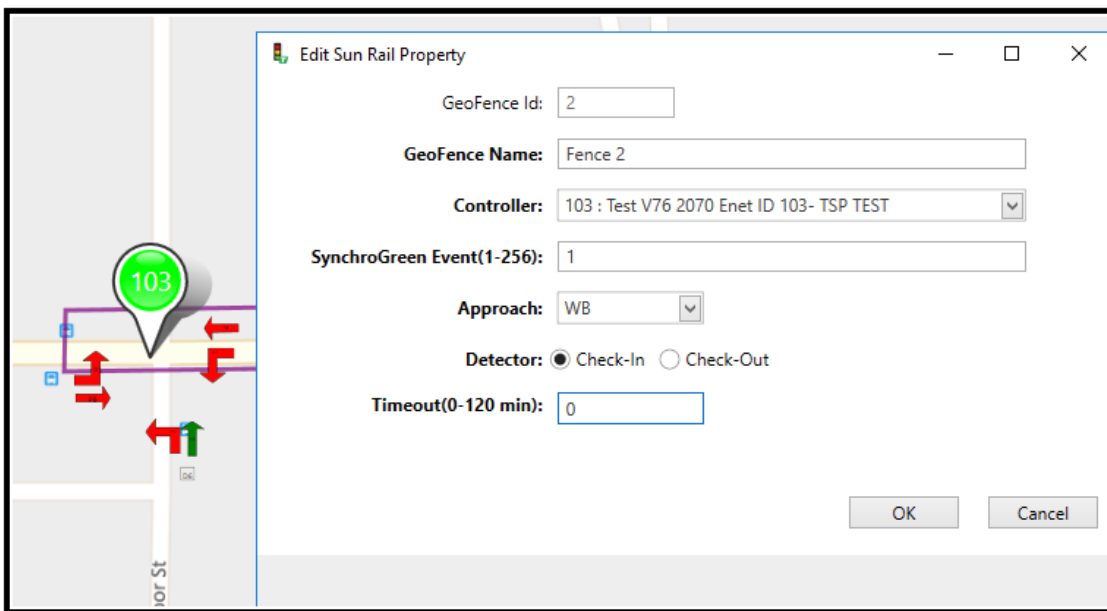
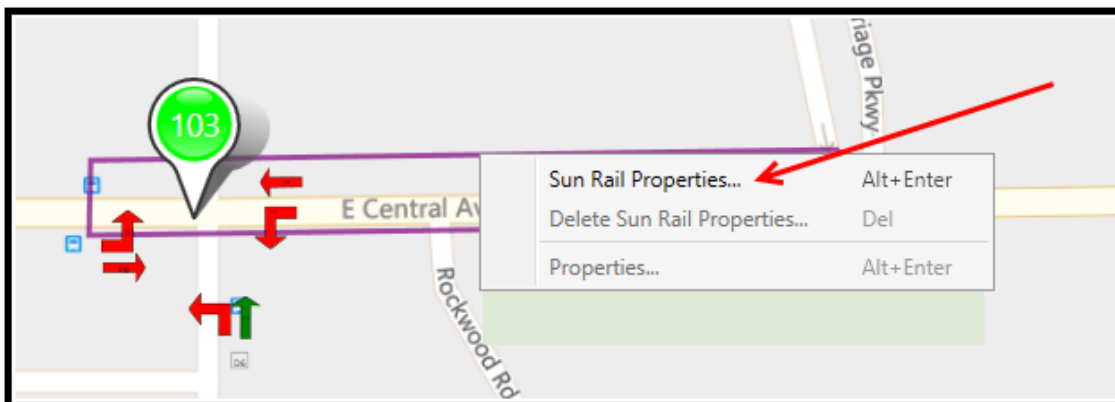
- Click on the segment and choose “*Save GeoFence*”.



6) Go to the View Mode



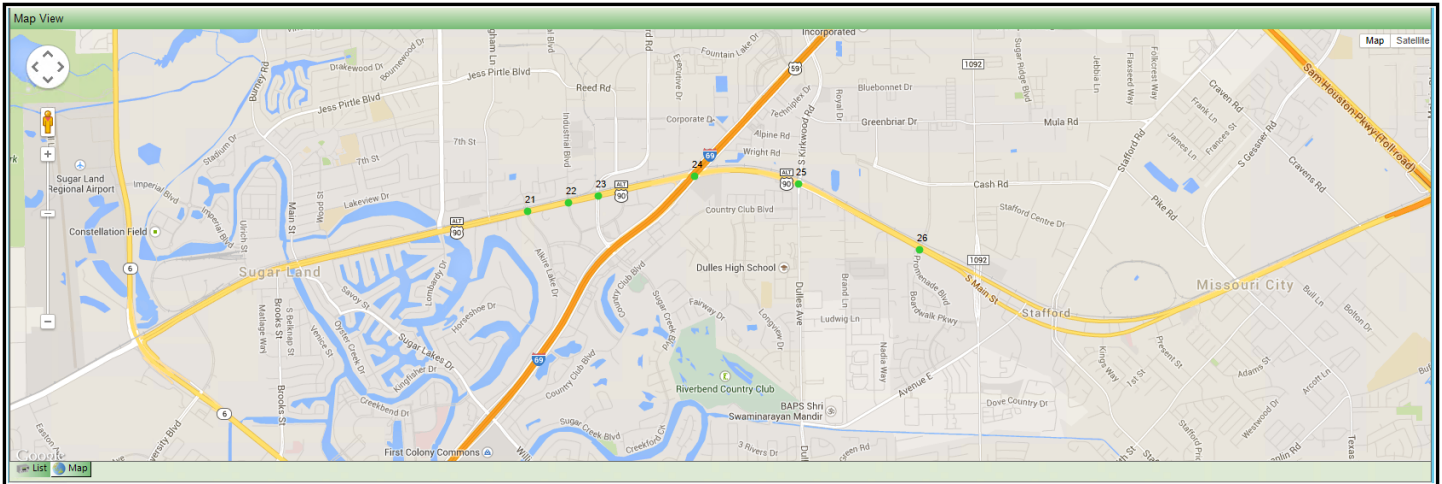
7) You can then right Click on the geofence and choose Sun Rail Properties to edit the data.



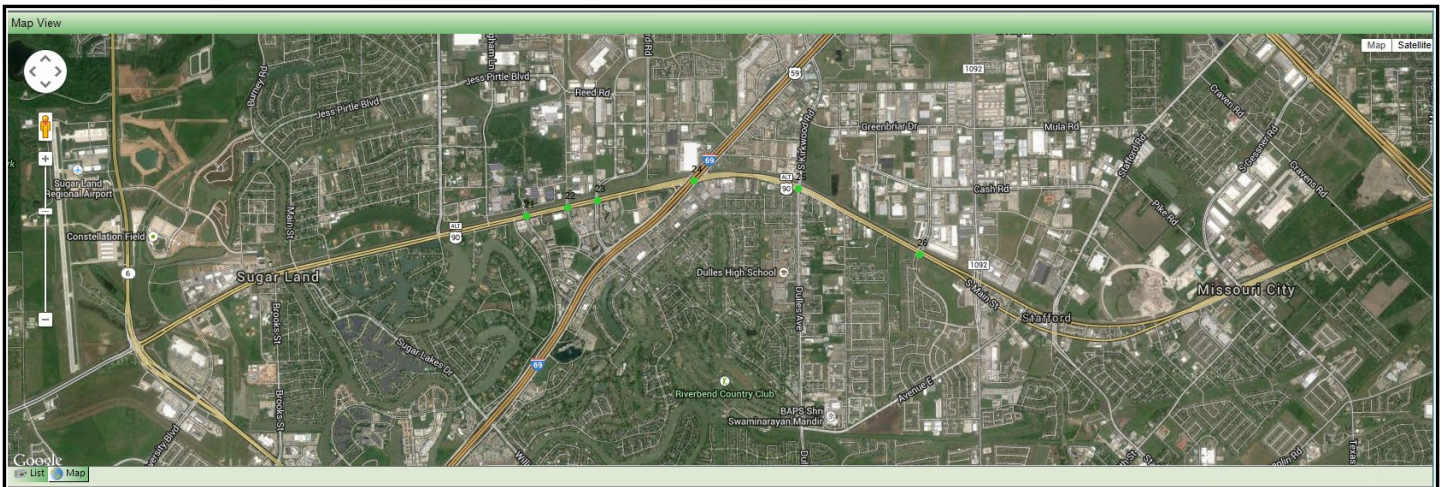
## 4.5 Google Map Interface

Google Maps are available if the agency desires. The agency should contact their Cubic | Trafficware representative for further information in acquiring this interface. Access to the internet is required as well as running the Proxy Server to see real-time data on the Map.

The Map view is shown below.

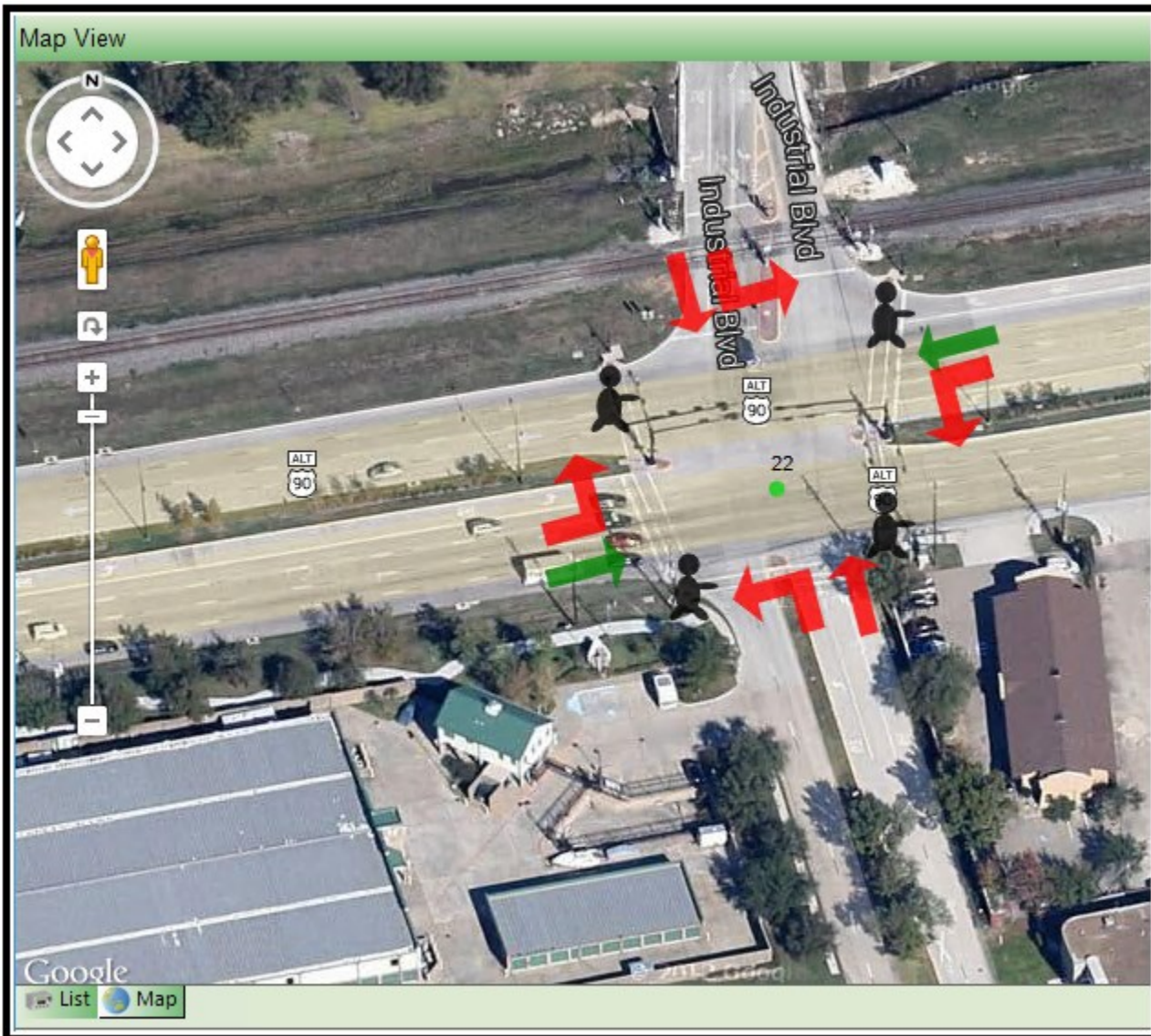


The Satellite View is shown below:



The Google interface take its data elements such as scan data from the GIS Map or Bing Map as the zoomed in view shows below.

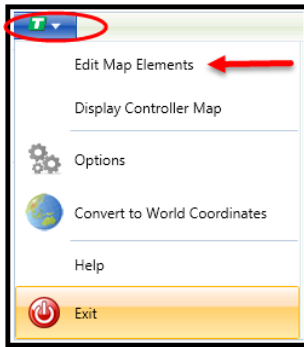




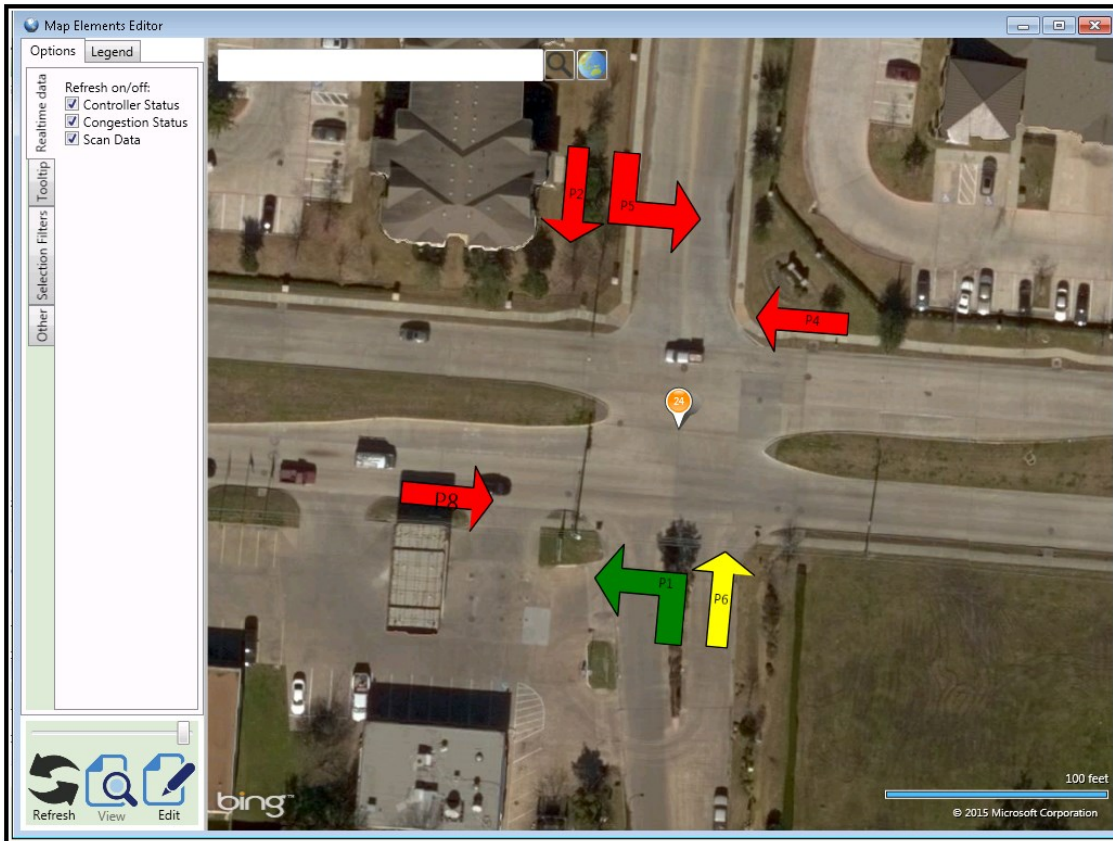
Due to the fact that Google Maps are browser based, the user will need to utilize the Scan Builder that is available in the in the Google Map editor to build scan screens. In addition, devices and new controllers can be added via the Google Map editor described below.

#### 4.5.1 Google Map Editor

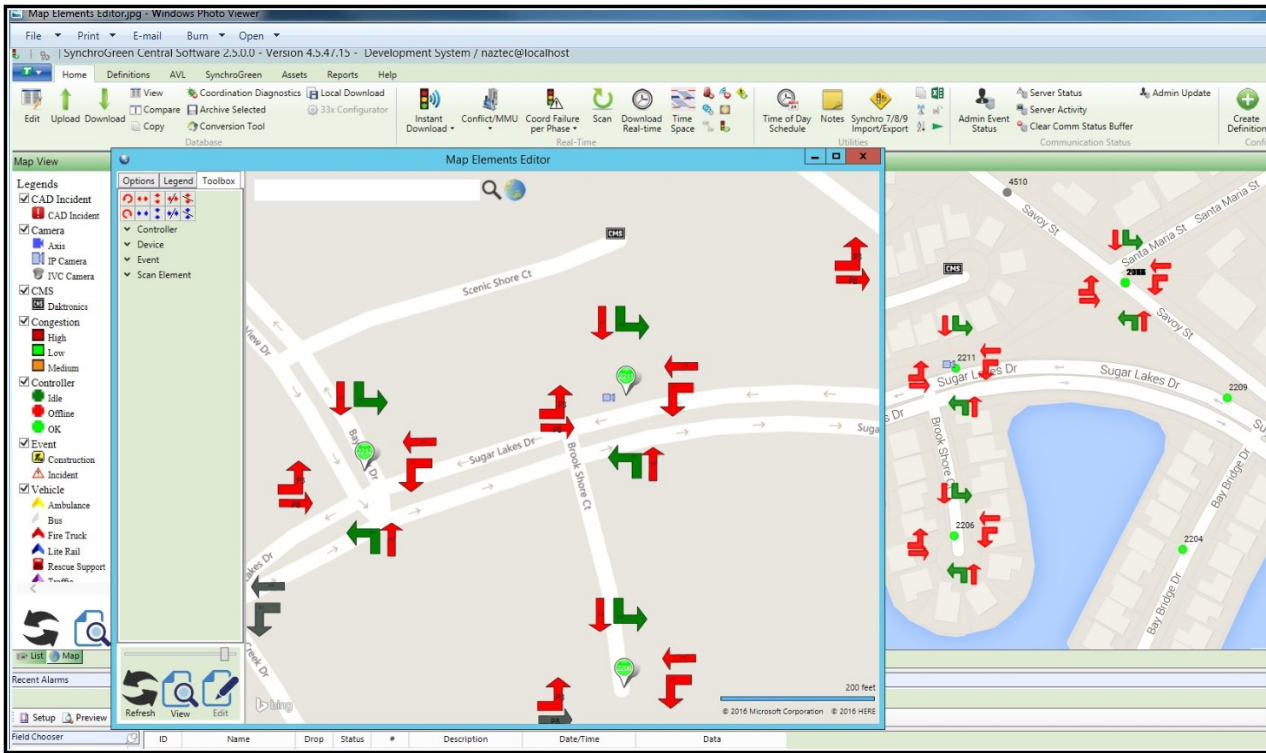
The Google Map editor is a user friendly way to add scan elements to the Google map browser interface. To access the Google Map Editor select “Edit Map Elements: via the Cubic | Trafficware Icon on the top left of the screen.



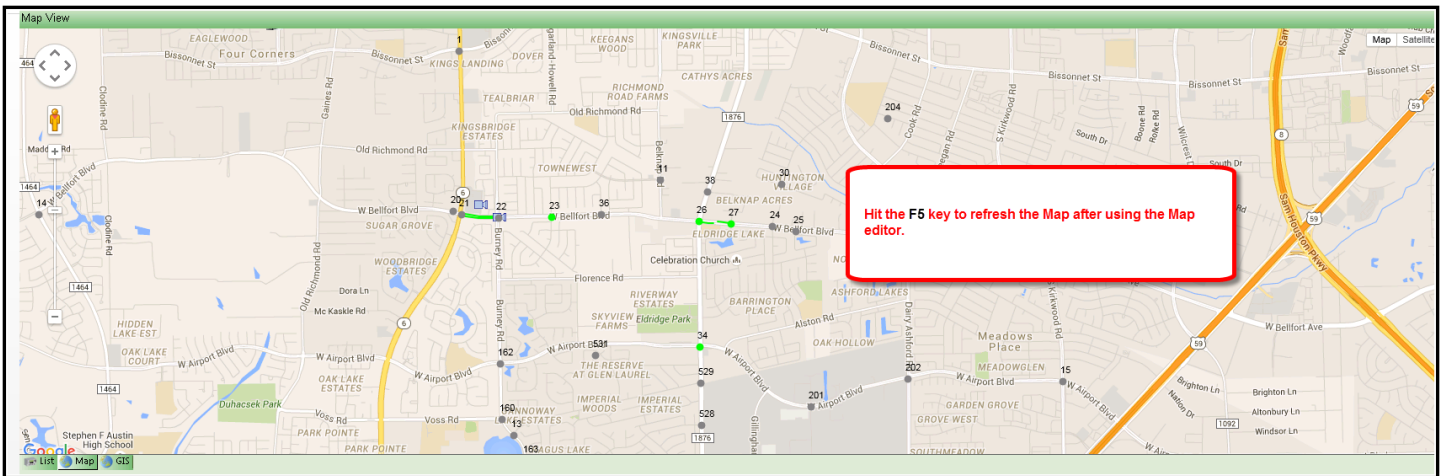
This will bring up the Google Map Editor as shown below.



The editor uses the Bing Map interface to add Controllers, Devices and scan elements to the Google Map. By utilizing the Bing Map editor, the user can use the same interface and tools as described in sections 4.4.11 and 4.4.12.



After editing the Google Map interface you can go to the Map tab on the overview screen. To refresh the Map Hit the **F5** key on your keyboard.



## 4.6 Detail Pane

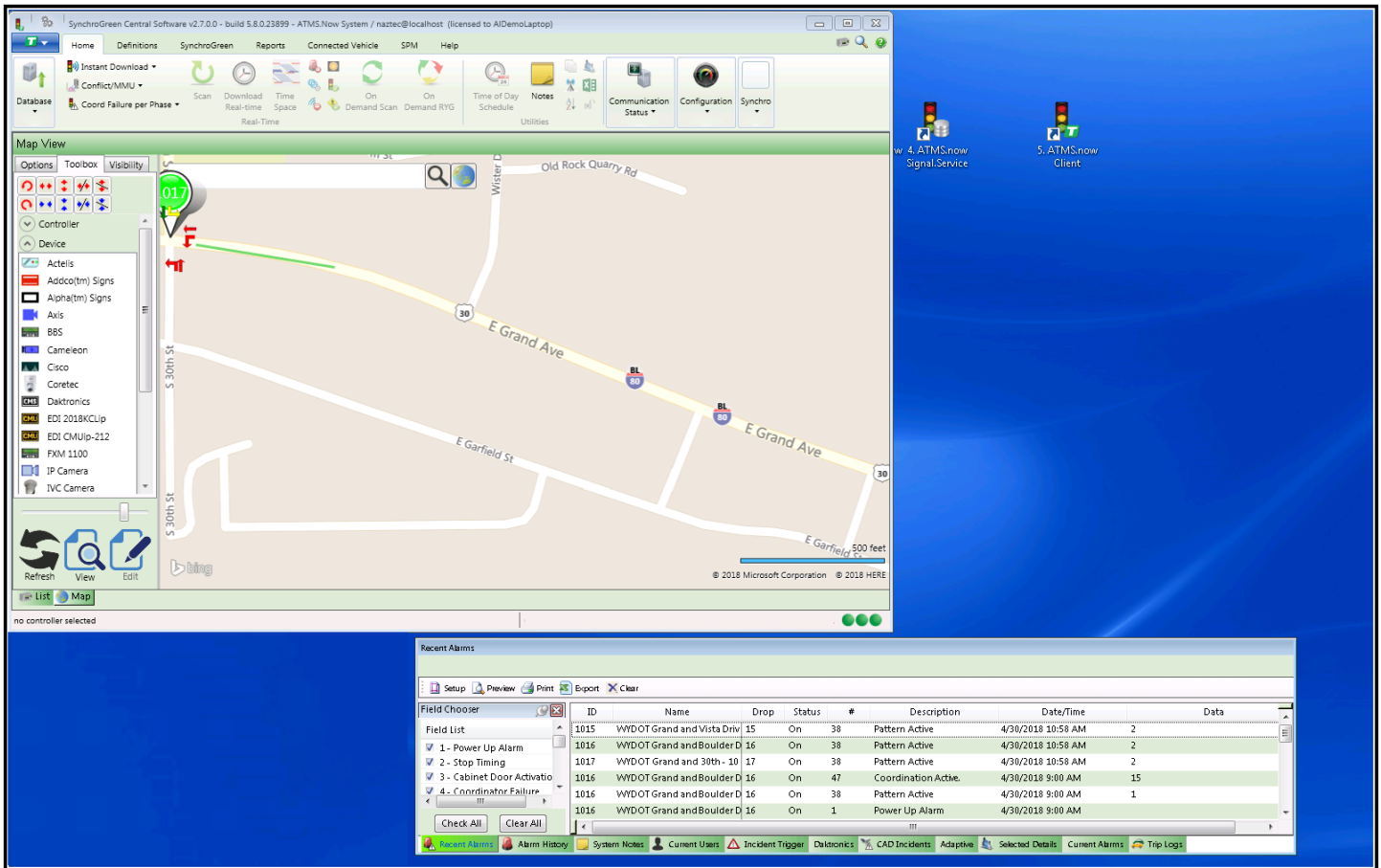
The *Detail* pane of the *Home* page is located on the bottom of the *Home* page as shown below. This pane displays real-time secondary system information and tools for the user, such as detailed alarm information, weather updates, split monitoring, and viewing of indexed document information by intersection.

The *Detail* pane offer the same “tuck-in” and “pin-up” features that the *Field Chooser* offers, allowing the user to maximize the use of the screen space. If the user chooses to “un-pin” the *Detail* pane, it will move down and tuck under the bottom of the **ATMS** *Home* page, causing the main Overview pane to re-size and display in that space. To access the “tucked-in” *Detail* pane, simply place the mouse over the detail bar on the bottom, and the *Detail* pane will “pop-up”. Use the push pin to “pin” the pane back up. The *Detail* pane also offers a common “pane re-sizing bar” with the *Overview* pane, which contains the *List* and *GIS* views. When the *Detail* pane is pinned this bar is present. To re-size the panes, simply click and drag the bar to the desired pane size.

The screenshot displays the ATMS.now 2.0 software interface. The top menu bar includes Home, Definitions, SynchroGreen, and Reports. Below the menu is a toolbar with various icons for database, notes, and system management. The main content area is divided into two panes. The top pane, titled "Controller List", contains a table with 10 columns: Alarm, Status, ID, Name, Notes, Revision, Drop, Port, Flex Group, Group, Type, IP Address, Free, Coord State, Coord Src, Pattern, TBC, Local Counter, Cycle, and Offset. Three rows are visible, corresponding to alarms 21, 22, and 25. The bottom pane, titled "Selected Details", displays a bar chart for alarm 21. The chart has 8 groups of bars on the x-axis, labeled 1 through 8. Each group contains three bars: red (Actual), green (Programmed), and yellow (Avg of Last 5). The y-axis ranges from 0 to 72. The chart shows that the actual and programmed values are generally consistent, but the average of the last 5 cycles is significantly higher in groups 2 and 6. At the bottom of the interface is a "Tab Layers" bar with icons for Recent Alarms, Alarm History, System Notes, Current Users, Incident Trigger, Daktronics, Adaptive, Selected Details, and Current Alarms. Two red arrows point to the "Push Pin" icon in the bottom right of the Controller List pane and the "Tab Layers" bar.

Alarm	Status	ID	Name	Notes	Revision	Drop	Port	Flex Group	Group	Type	IP Address	Free	Coord State	Coord Src	Pattern	TBC	Local Counter	Cycle	Offset
21	Green	21	Bench 2070 V76 ENET - 21		76.8h	1	E-NET-5001	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.191	COORD	SYNC	S-TBC	1	9	4	100	5
22	Green	22	Bench 2070 V76 ENET - 22		76.8k	2	E-NET-5002	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.192	COORD	SYNC	S-TBC	1	25	20	100	5
25	Green	25	Bench V76 ATCENET-ID 25		76.8f	5	E-NET-5005	Bench Controllers		NTCIP 76.x ATC Ethernet	192.168.104.195	FREE	FREE		0	0	0		

**Note: Beginning with ATMS 2.8, the user can detach the detail pane or any of its tabs from the ATMS overview screens to a separate screen or area.**

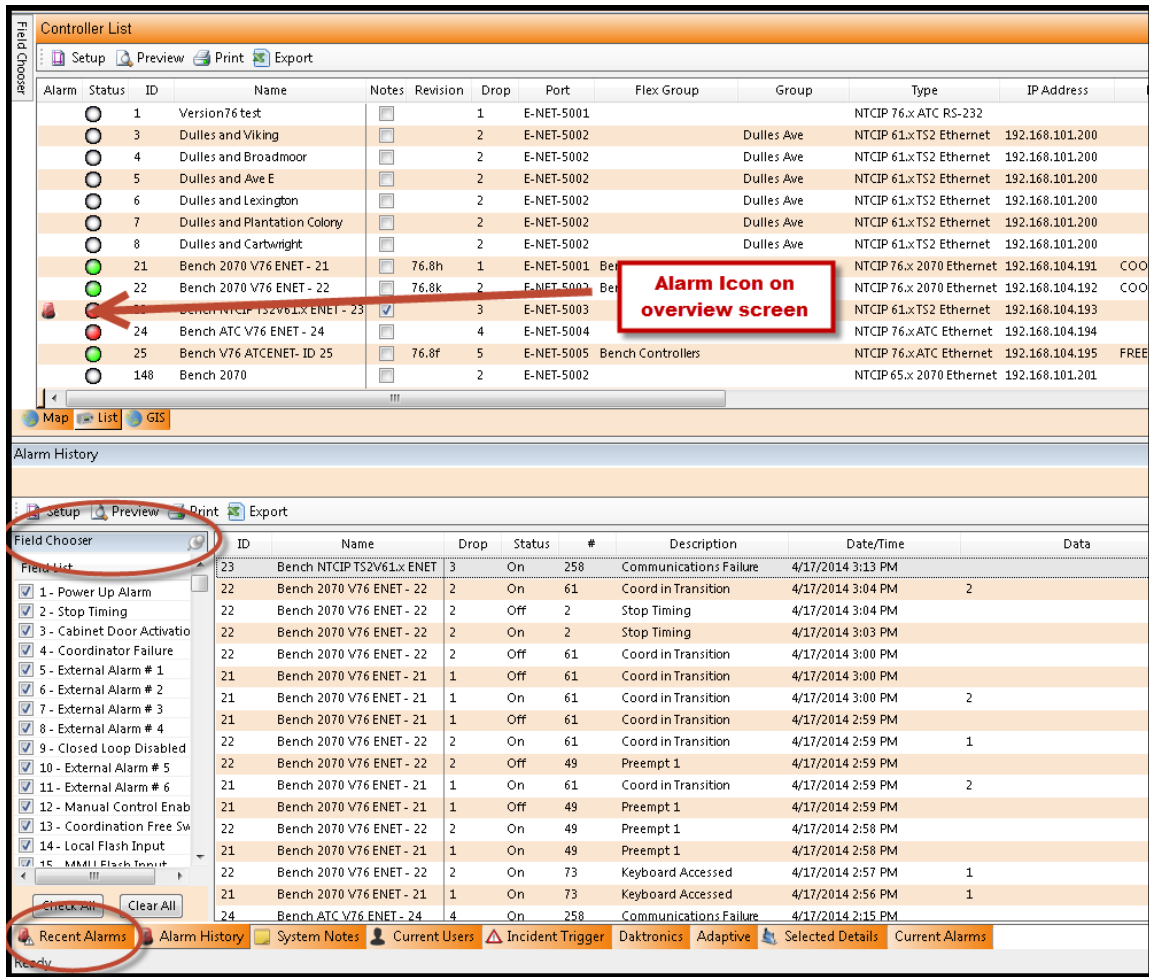


The *Detail* pane presents two layers of tabs. The first layer of tabs only will appear at first. To open the second layer of *Detail* tabs, select the “*Selected Details*” tab. This opens controller-specific functions of the *Detail* pane.

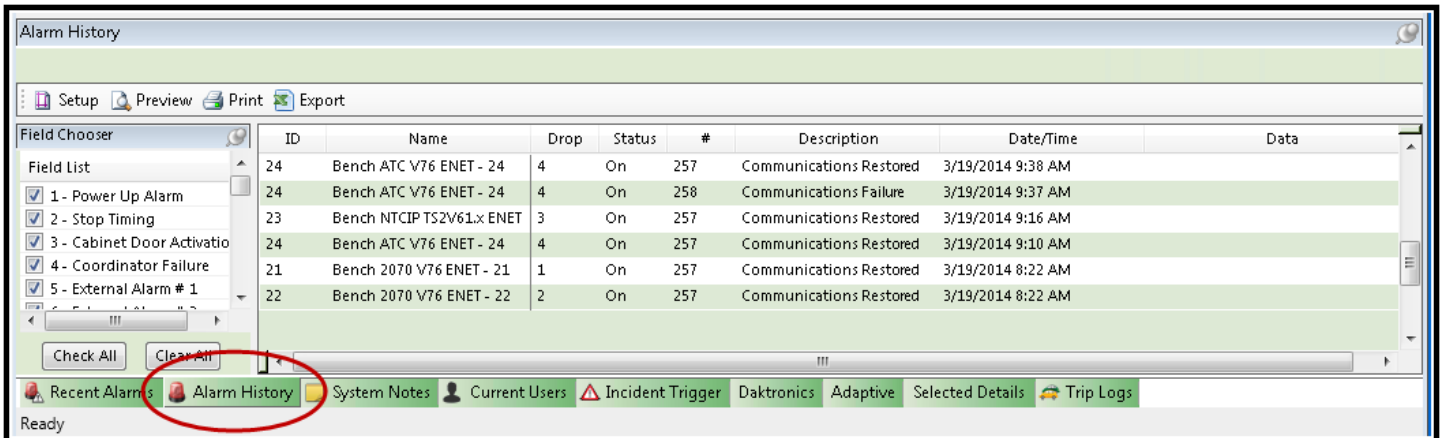


The tabs in the first layer are NOT controller specific, but general system-based information categories. These tabs include *Recent Alarms*, *Alarm History*, *System Notes*, *Incident Triggers*, *Current Users* and other fields as shown above. The tab labeled *Selected Details*, opens up the second layer of tabs. This second layer of tabs are *Splits*, *Detailed Splits*, *Notes*, *Documents*, *Alarms*, and *Conflict/MMU* and provide intersection-specific information in real-time.

The figure below shows the first layer of available tabs on the *Detail* pane. This illustration specifically shows how **ATMS** can provide real-time Alarm History to each user:




The figure below shows how opening the *Selected Details* opens the second layer of tabs available on the *Detail* pane:



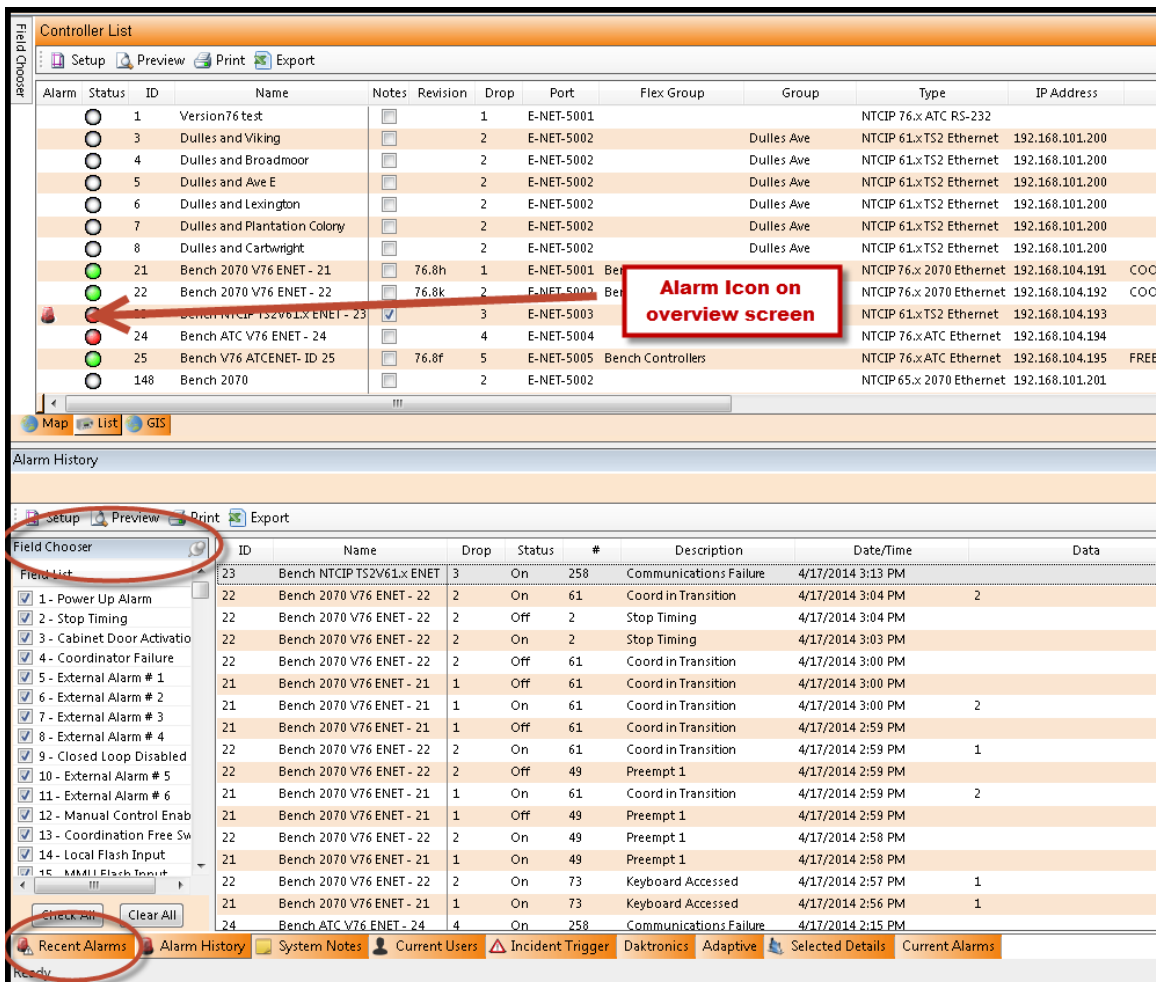
## 4.6.1 Recent Alarms Tab

*Recent Alarms* provides real-time controller alarm information as programmed in each controller. *Recent Alarms* are not recordable events in the **ATMS** database, but serve as temporary notification of Alarm activity since the user has logged in. By default, if the alarms are not set up in the controller, the only reported alarms are “Communication Restored” and “Communication Failure” (alarms 257 & 258 respectively). The client will report these communications alarms after the number of attempts as programmed in the system by the factory.

The *Recent Alarms* tab provides a “*Field Chooser*” to control the specific alarms that are displayed. Displayed alarms can be controlled by checking or un-checking each box in the *Field Chooser*. The “stickiness” feature of **ATMS** will remember the desired field preferences for each user based on the last settings.

When an inbound alarm is received, detailed information such as intersection ID#, name, date, time, and alarm type will appear in the *Recent Alarm* tab window. Simultaneously, an alarm icon  will appear to the left of the corresponding controller on the controller *List View* pane. The alarm information and alarm icon will remain until the alarm is acknowledged by highlighting the controller with the alarm and navigate to *Actions...Real Time...Clear Alarms*. This will clear the alarm icon from the *List* but the alarm details will remain displayed in the *Recent Alarms* tab until the user is logged off.

If this is performed and the alarm icon is still present, then browse the alarm list for additional alarms for that controller.



The screenshot displays the ATMS software interface with two main sections: **Controller List** and **Alarm History**.

**Controller List Table:**

Alarm	Status	ID	Name	Notes	Revision	Drop	Port	Flex Group	Group	Type	IP Address
1	<input type="radio"/>	1	Version76 test			1	E-NET-5001			NTCIP 76.x ATC RS-232	
3	<input type="radio"/>	3	Dulles and Viking			2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
4	<input type="radio"/>	4	Dulles and Broadmoor			2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
5	<input type="radio"/>	5	Dulles and Ave E			2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
6	<input type="radio"/>	6	Dulles and Lexington			2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
7	<input type="radio"/>	7	Dulles and Plantation Colony			2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
8	<input type="radio"/>	8	Dulles and Cartwright			2	E-NET-5002		Dulles Ave	NTCIP 61.x TS2 Ethernet	192.168.101.200
21	<input checked="" type="radio"/>	21	Bench 2070 V76 ENET - 21		76.8h	1	E-NET-5001	Bench		NTCIP 76.x 2070 Ethernet	192.168.104.191
22	<input checked="" type="radio"/>	22	Bench 2070 V76 ENET - 22		76.8k	2	E-NET-5002	Bench		NTCIP 76.x 2070 Ethernet	192.168.104.192
23	<input checked="" type="radio"/>	23	Bench NTCIP 132V6LX ENET - 23			3	E-NET-5003			NTCIP 61.x TS2 Ethernet	192.168.104.193
24	<input checked="" type="radio"/>	24	Bench ATC V76 ENET - 24			4	E-NET-5004			NTCIP 76.x ATC Ethernet	192.168.104.194
25	<input checked="" type="radio"/>	25	Bench V76 ATCENET-ID 25		76.8f	5	E-NET-5005	Bench Controllers		NTCIP 76.x ATC Ethernet	192.168.104.195
148	<input type="radio"/>	148	Bench 2070			2	E-NET-5002			NTCIP 65.x 2070 Ethernet	192.168.101.201

**Alarm History Table:**

ID	Name	Drop	Status	#	Description	Date/Time	Data
23	Bench NTCIP TS2V6LX ENET	3	On	258	Communications Failure	4/17/2014 3:13 PM	
22	Bench 2070 V76 ENET - 22	2	On	61	Coord in Transition	4/17/2014 3:04 PM	2
22	Bench 2070 V76 ENET - 22	2	Off	2	Stop Timing	4/17/2014 3:04 PM	
22	Bench 2070 V76 ENET - 22	2	On	2	Stop Timing	4/17/2014 3:03 PM	
22	Bench 2070 V76 ENET - 22	2	Off	61	Coord in Transition	4/17/2014 3:00 PM	
21	Bench 2070 V76 ENET - 21	1	Off	61	Coord in Transition	4/17/2014 3:00 PM	2
21	Bench 2070 V76 ENET - 21	1	On	61	Coord in Transition	4/17/2014 2:59 PM	
22	Bench 2070 V76 ENET - 22	2	On	61	Coord in Transition	4/17/2014 2:59 PM	1
22	Bench 2070 V76 ENET - 22	2	Off	49	Preempt 1	4/17/2014 2:59 PM	
21	Bench 2070 V76 ENET - 21	1	On	61	Coord in Transition	4/17/2014 2:59 PM	2
21	Bench 2070 V76 ENET - 21	1	Off	49	Preempt 1	4/17/2014 2:59 PM	
22	Bench 2070 V76 ENET - 22	2	On	49	Preempt 1	4/17/2014 2:58 PM	
21	Bench 2070 V76 ENET - 21	1	On	49	Preempt 1	4/17/2014 2:58 PM	
22	Bench 2070 V76 ENET - 22	2	On	73	Keyboard Accessed	4/17/2014 2:57 PM	1
21	Bench 2070 V76 ENET - 21	1	On	73	Keyboard Accessed	4/17/2014 2:56 PM	1
24	Bench ATC V76 ENET - 24	4	On	258	Communications Failure	4/17/2014 2:15 PM	

The interface includes a **Field Chooser** on the left side of the Alarm History table, which allows users to select which alarm types are displayed. The **Recent Alarms** button is highlighted in the bottom navigation bar.

## 4.6.2 Alarm History Tab

*Alarm History* provides a history log of controller Alarms and Events as programmed in each controller. Both cleared and un-cleared alarms will appear in this tab. Upon log in, **ATMS** will populate the *Alarm History* tab with the most current 100 system alarms from midnight of the current day. Alarms that appear in the *Alarm History* are written to the system database for future report generation.

The screenshot displays the ATMS software interface, divided into two main sections: **Controller List** and **Alarm History**.

**Controller List:** This section features a table with columns for Alarm, Status, ID, Name, Notes, Revision, Drop, Port, Flex Group, Group, Type, and IP Address. The table lists various controllers, including 'Version76 test', 'Dulles and Viking', 'Dulles and Broadmoor', 'Dulles and Ave E', 'Dulles and Lexington', 'Dulles and Plantation Colony', 'Dulles and Carwright', and several 'Bench' controllers (e.g., Bench 2070 V76 ENET - 21, Bench 2070 V76 ENET - 22, Bench NTCIP TS2V61.x ENET - 23, Bench ATC V76 ENET - 24, Bench V76 ATCENET- ID 25, Bench 2070). Each row includes a status indicator (radio button or colored circle) and a 'Drop' value.

**Alarm History:** This section features a table with columns for ID, Name, Drop, Status, #, Description, Date/Time, and Data. The table lists various alarms, including 'Bench NTCIP TS2V61.x ENET', 'Bench 2070 V76 ENET - 22', 'Bench 2070 V76 ENET - 21', 'Bench 2070 V76 ENET - 24', and 'Bench ATC V76 ENET - 24'. Each row includes a status indicator (radio button or colored circle) and a 'Drop' value.

At the bottom of the interface, there is a navigation bar with several tabs: **Recent Alarms**, **Alarm History** (highlighted with a red circle), **System Notes**, **Current Users**, **Incident Trigger**, **Daktronics**, **Adaptive**, **Selected Details**, and **Current Alarms**. The status bar at the very bottom indicates 'Ready'.



## 4.6.3 Current Alarms Tab

This option will display a tab which allows users to display the active Alarms 1 through 290 for all controllers.

The screenshot shows the ATMS.now 2.0 software interface. The top window displays a 'Controller List' with the following data:

Alarm	Status	ID	Name	Notes	Revision	Drop	Port	Flex Group	Group	Type	IP Address	Free	Coord State	Coord Src	Pattern	TBC	Local Count
1		Version76 test			1	E-NET-5001				NTCIP 76.x.ATC RS-232						0	0
3		Dulles and Viking			2	E-NET-5002			Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200					0	0
4		Dulles and Broadmoor			2	E-NET-5002			Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200					0	0
5		Dulles and Ave E			2	E-NET-5002			Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200					0	0
6		Dulles and Lexington			2	E-NET-5002			Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200					0	0
7		Dulles and Plantation Colony			2	E-NET-5002			Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200					0	0
8		Dulles and Cartright			2	E-NET-5002			Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200					0	0
21		Bench 2070 V76 ENET - 21			76.8h	1	E-NET-5001	Bench Controllers		NTCIP 76.x.2070 Ethernet	192.168.104.191	COORD	SYNC	S-TBC	2	81	71
22		Bench 2070 V76 ENET - 22			76.8h	2	E-NET-5002	Bench Controllers		NTCIP 76.x.2070 Ethernet	192.168.104.192	COORD	SYNC	S-TBC	2	98	88
23		Bench NTCIP TS2V61.x ENET - 23				3	E-NET-5003			NTCIP 61.x.TS2 Ethernet	192.168.104.193					0	0
24		Bench ATC V76 ENET - 24				4	E-NET-5004			NTCIP 76.x.ATC Ethernet	192.168.104.194					0	0
25		Bench V76 ATCENET- ID 25			76.8f	5	E-NET-5005	Bench Controllers		NTCIP 76.x.ATC Ethernet	192.168.104.195	FREE	FREE		0	0	0
148		Bench 2070				2	E-NET-5002			NTCIP 65.x.2070 Ethernet	192.168.101.201					0	0

The bottom window displays a grid of 'Current Alarms' with columns for ID, Name, and a series of columns labeled A38 through A57. A red oval highlights the 'Current Alarms' tab in the bottom window's navigation bar.

#### 4.6.4 Controller Specific Alarms

ATMS will display specific controller alarms. Below is an explanation of the specific controller alarms generated in **ATMS**.

Event Alarm # /	Alarm Name	Comments
1	Power Up / Long Power Outage	Always active when power is applied to the controller. Transitions between power-up and power-downs of 500 ms or greater are logged and the controller will reset when power is restored.
2	Stop Timing	Indicates that one of the stop time inputs is active.
3	Cabinet Door Activation	This is brought into the NEMA input called "lamps" or "indicator". This input is typically used for the cabinet door switch in TS1 cabinets.
4	Coordination Failure	This alarm indicates that coordination is failed. There are two ways in which coordination may fail: 1) The TS2 method in which two cycle faults have occurred during coordination, but not when coordination is inactive. 2) A serviceable call has not be serviced in 3 cycles. This is the traditional method, which predates the NEMA TS2 method.
5	External Alarm # 1	
6	External Alarm # 2	
7	External Alarm # 3	
8	External Alarm # 4	
9	Closed Loop Disabled	This alarm, when active, indicates that the Closed-loop Enable parameter is set to OFF.
10	External Alarm # 5	
11	External Alarm # 6	
12	Manual Control Enable	Alarm active when <i>Police Push Button</i> is ON
13	Coordination Free Switch Input	Alarm active when System/Free Switch is FREE
14	Local Flash Input	Asserted by monitor or cabinet switch when in flash
15	CMU or MMU Flash Input	Alarm is active when the controller receives an SDLC message from the MMU that it is in flash
16	MMU Fault	Indicates a Conflict Monitor Fault has occurred when CVM is NOT asserted by the controller and Stop-Time is applied.

17	Cycle Fault	TS2 Alarm. It indicates that a serviceable call has not been serviced in approximately two cycle times and coordination was active at the time.
18	Cycle Failure	TS2 Alarm. It indicates that a serviceable call has not been serviced in approximately two cycle times and that coordination was not active at the time.
19	Coordination Fault	Indicates that a cycle fault occurred during coordination.
20	Controller Fault	Intersection is in Flash due to a critical controller fault. This fault includes Field Check, Response Frames, Proc Diagnostics.
21	Detector SDLC Fault	Indicates SDLC communication with at least one of the Detector BIUs is faulted. This is a non-critical fault and will not cause the intersection to flash.
22	MMU SDLC Fault	SDLC communication with the MMU has experienced a Response Frame Fault. This is a critical fault and will cause the controller to flash.
23	Terminal Facility (cabinet) SDLC Fault	SDLC communication with one or more of the Terminal and Facilities BIUs is faulted. This is a critical fault and will cause the controller to Flash.
24	SDLC Response Frame Fault	Report from SDLC interface
25	EEPROM CRC Fault	The background EEPROM diagnostic has detected an unexplained change in the CRC of the user-programmed database.
26	Detector Diagnostic Fault	One of the controller detector diagnostics (No Activity, Max Presence or Erratic Count) has failed. Refer to section 13.1 of the controller training manual for further details.
27	Detector Fault From SDLC	One or more local detectors have been reported to be faulted by the Loop Amplifier and BIU. These faults include open loop, shorted loop, excessive inductance change, and watch-dog time-out.
28	Queue Detector alarm	Associated with the queue detector feature. Data indicates which queue detector is generating the alarm.
29	Ped Detector Fault	A ped detector is faulted due to user program limits being exceeded. These include <i>No Activity</i> , <i>Max Presence</i> and <i>Erratic Count</i> on screen MM->5->4.
30	Pattern Error / Coord Diagnostic Fault	Active when coord diagnostic has failed. Refer to section 13.1 of the controller training manual for further details
31	Cabinet Flash Alarm	Active after a delay timer expires (see MM->1->6->7) if the monitor, or a controller fault, causes the cabinet to flash.
32	Time Download Request	Requests Time Download from central system (see MM->6->4) Note: Used in V61.x controllers only

33	Street Lamp Failure	Street Lamp Failure (Channel A)
34	Street Lamp Failure	Street Lamp Failure (Channel B)
35	Ped Phase Extension	Activated when the Pedestrian phase is being extended due to user programming parameters.
36	Red Extension	Activated when the Red Clearance interval is being extended past the normal time. Deactivated once the alarm once Extended Red Clearance interval terminates
37	Download Request	Requests Download from central system (see MM->6->4
38	Pattern Change	Coordination Pattern changes are logged to the event and alarm buffers using this alarm number. The data byte stores the new pattern number.
39	Reserved Patriot	Reserved
40	Reserved Patriot	Reserved
41	Temperature Alert #1	Temp Alert 1 – High Temp
42	Temperature Alert #1	Temp Alert 1 – Low Temp
43	Temperature Alert #1	Temp Alert 1 – Status Alarm
44	Temperature Alert #2	Temp Alert 2 – High Temp
45	Temperature Alert #2	Temp Alert 2 – Low Temp
46	Temperature Alert #2	Temp Alert 2 – Status Alarm
47	Coord Active	Set when coordination is active (not free)
48	Preempt Active	Set when any preempt is active
49	HP Preempt 1	High-Priority Preempt 1 (Rail Preempt 1)
50	HP Preempt 2	High-Priority Preempt 2 (Rail Preempt 2)
51	HP Preempt 3	High-Priority Preempt 3
52	HP Preempt 4	High-Priority Preempt 4
53	HP Preempt 5	High-Priority Preempt 5
54	HP Preempt 6	High-Priority Preempt 6
55	LP Preempt 1	Low-Priority or Transit Priority Preempt 1
56	LP Preempt 2	Low-Priority or Transit Priority Preempt 2
57	LP Preempt 3	Low-Priority or Transit Priority Preempt 3
58	LP Preempt 4	Low-Priority or Transit Priority Preempt 4

59	EEPROM Compare Fault	Checksum of firmware memory has changed
60	Coordination Failure	Alarm is ON when Coordination has failed
61	Sync Transition	Alarm is ON when coord is active and in transition for times over 3 seconds. Alarm is OFF when coord is active and in SYNC.
62	Light Rail / Transit	Alarm Rail Check
63	TSP Active Trigger	Used with ATMS to initiate download of TSP Data
64	Synchro Green Adaptive Active	Indicates that the agency has the Synchro Green Central Module and it is currently sending a Pattern to the local controller.
65	Light Rail / Transit	Advance/Check-in/Check-out Detector Stuck
66	Light Rail / Transit	Advance/Check-in/Check-out detector inputs are out of sequence
67	Light Rail / Transit	Failed to arrive at the Check-in Detector in the proper amount of time
68	Light Rail / Transit	Failure to arrive at the Check-out Detector
69	Reserved	
70	Internal Clock Jump	Occurs when the clock jumps by +/- 2 seconds
71	SIU Input SDLC error	Indicates SDLC communication with at least one of the Detector SIUs are faulted.
72	SIU Output SDLC error	SDLC communication with one or more of the Output file SIUs are faulted.
73	Controller Access	Active when a key is pressed until the <i>Display Time</i> expires (see Unit Parameters, MM->1->2->1)
74	User Key Login	Active when user enters security key – records the User # in the data byte
75	“Disk” File Access Error	The software could not access the files on “disk” devices such as Flash RAM, RAM, SD card or USB device
76	Database Change Notification	Database is edited in a controller by a Logged in User is reported to ATMS
77	Emergency Priority	Emergency Priority Activation (ON/OFF)
78	SIU CMU SDLC Fault error	SDLC communication with the CMU has indicated a Fault condition.
79	SIU CMU SDLC error	SDLC communication with the CMU has failed. This is a critical fault and will cause the controller to flash.

80	CMU Channel Conflict	Conflict detected between SIU CMU channels
81	FIO Changed Status	FIO Status has changed
82	UPS On Battery	Indicates that the cabinet is running under UPS Power
83	UPS Flash Input	Indicates the controller is in Flash due to the UPS Battery low power
84	Communications Failure	This alarm is set when the V80.x parameter FailTime (MM->6->1) expires (Controller received no communications)
85	Short Power Outage	Transitions between power-up and power-downs of less than 500 ms are logged and the controller will not reset. Used to track power brownouts
86	Reserved	
87	External Alarm # 7	
88	External Alarm # 8	
89	External Alarm # 9	
90	External Alarm # 10	
91	External Alarm # 11	
92	External Alarm # 12	
93	External Alarm # 13	
94	External Alarm # 14	
95	External Alarm # 15	
96	External Alarm # 16	
97-113	Reserved	
114	HP Preempt 7	High-Priority Preempt 7
115	HP Preempt 8	High-Priority Preempt 8
116	HP Preempt 9	High-Priority Preempt 9
117	HP Preempt 10	High-Priority Preempt 10
118	HP Preempt 11	High-Priority Preempt 11
119	HP Preempt 12	High-Priority Preempt 12
120	Reserved	

121	Special Function Output	Special Function #1
122	Special Function Output	Special Function #2
123	Special Function Output	Special Function #3
124	Special Function Output	Special Function #4
125	Special Function Output	Special Function #5
126	Special Function Output	Special Function #6
127	Special Function Output	Special Function #7
128	Special Function Output	Special Function #8

#### 4.6.5 ATMS Specific Alarms

ATMS keeps track of up to 265 alarms. Alarms 1-128 are controller specific alarms. Alarms 129-256 are specific to Master controllers. Alarms 257-267 are specific to **ATMS**. Below is an explanation of the specific alarms generated by **ATMS**.

Alarm #	Alarm Name	Description
256	TSP Error	TSP is not set up properly on the controller when the Priority request is triggered to execute.
257	Communications Restored	Communications between the controller and the <b>ATMS</b> communications server has been Restored
258	Communications Failure	Communications between the controller and the <b>ATMS</b> communications server has Failed
259	Repetitive Phase Max	The agency can set up a threshold in the admin.ini file to track the number of phase maxes that occur
260	Congestion Incident – N Bound	The High congestion threshold programmed by the agency has been reached for North bound traffic
261	Congestion Incident – S Bound	The High congestion threshold programmed by the agency has been reached for South bound traffic
262	Congestion Incident – E Bound	The High congestion threshold programmed by the agency has been reached for East bound traffic
263	Congestion Incident – W Bound	The High congestion threshold programmed by the agency has been reached for West bound traffic
264	Congestion Incident – N-E Bound	The High congestion threshold programmed by the agency has been reached for Northeast bound traffic
265	Congestion Incident – N-W Bound	The High congestion threshold programmed by the agency has been reached for Northwest bound traffic
266	Congestion Incident – S-E Bound	The High congestion threshold programmed by the agency has been reached for Southeast bound traffic
267	Congestion Incident – S-W Bound	The High congestion threshold programmed by the agency has been reached for Southwest bound traffic
268	Database differences occurred after latest StreetSync synchronization	A synchronization with StreetSync shows databases have been updated/changed.



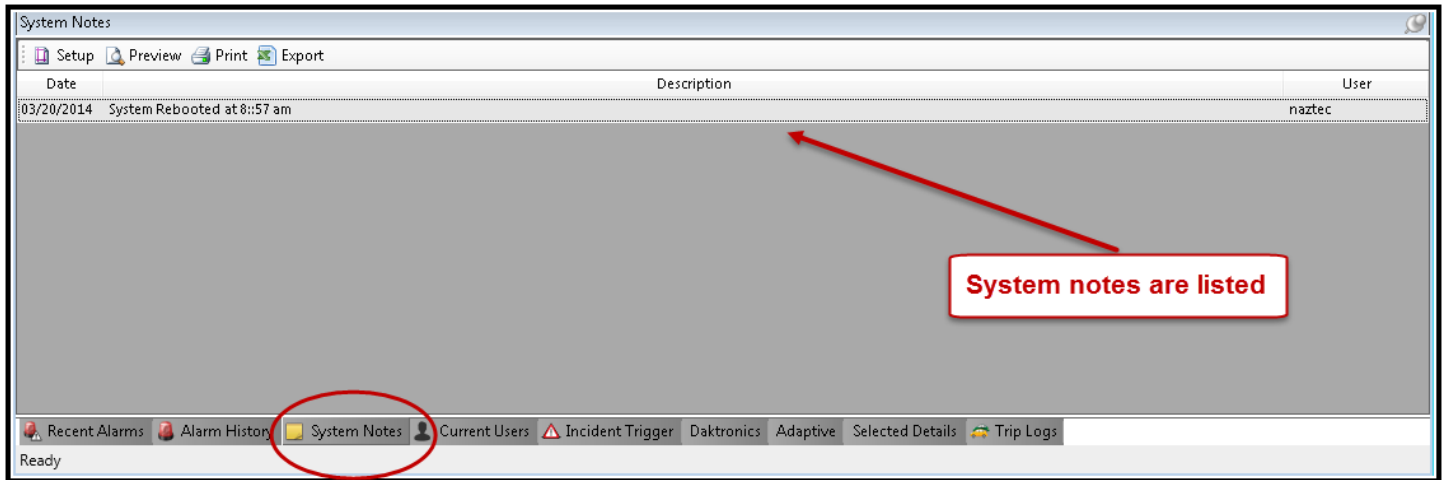
269	Train Inbound NB	Rail Adaptive Train heading Inbound from Northbound direction
270	Train Inbound SB	Rail Adaptive Train heading Inbound from Southbound direction
271	Train Inbound EB	Rail Adaptive Train heading Inbound from Eastbound direction
272	Train Inbound WB	Rail Adaptive Train heading Inbound from Westbound direction
273	Train Inbound NE	Rail Adaptive Train heading Inbound from Northeast bound direction
274	Train Inbound NW	Rail Adaptive Train heading Inbound from Northwest bound direction
275	Train Inbound SE	Rail Adaptive Train heading Inbound from Southeast bound direction
276	Train Inbound SW	Rail Adaptive Train heading Inbound from Southwest bound direction

277	Train Threshold Exceeded	Rail Adaptive Train Threshold Exceeded
278	Failed to connect to NextBus	Failed to connect to NextBus- Real-Time
279	Partial Real-Time Data with No Vehicle Positions	NextBus specific Event
280	Unreliable Real-Time Data entries	NextBus specific Event
281	Priority Requested but not confirmed	NextBus specific Event
282	Vehicle assigned but off route	NextBus specific Event
283	Failed to connect to NextBus	NextBus specific Event
284	Partial Static Data	NextBus specific Event
285	Unreliable Static Data entries	NextBus specific Event
286	Partial Real-Time Data for non-moving vehicles	NextBus specific Event
287	Unreliable Real-Time Data – Missing Speed with updated vehicle position	NextBus specific Event
288	Partial Real-Time data with No Trip updates	NextBus specific Event
289	Unreliable Real-Time Data – Trip does not exist	NextBus specific Event
290	Unreliable Real-Time Data – Shape does not exist	NextBus specific Event

To access a complete list of all system Alarms and Events, the user can generate an *Alarms* report from the *Reports* page of **ATMS**.

## 4.6.6 System Notes Tab

The *System Notes* tab displays universal, system-wide messages of any type to be displayed to all users. These messages can be specific to other users, general agency-wide statements, specific information, etc. Creating *System Notes* will be discussed in the **Notes section under Utilities** section of this chapter.



## 4.6.7 Incident Trigger Tab

The *Incident Trigger* tab replaces the *Camera/CMS Events* tab on earlier versions of **ATMS**. As of Build 1.5.43, **ATMS** can trigger based on intersection alarms or congestion thresholds. The *Incident Trigger* tab displays logged system-generated Controller, Camera and Changeable Message Sign activity that has been generated by the *Incident Trigger* feature in **ATMS**. This tab will display the Intersection ID#, Description of triggering event (Controller Alarm Trigger or Congestion Trigger), and Date/Time it occurred. Automated system-generated activity is programmed in the *Incident Trigger* section of the *Definitions* Module of **ATMS**. Manual device operation is not logged by **ATMS**.

The screenshot displays the ATMS software interface. The top section shows the 'Controller List' table with the following data:

Alarm	Status	ID	Name	Notes	Revision	Drop	Port	Flex Group	Group	Type	IP Address	Free	Coord State	Coord
1	○	Version76 test				1	E-NET-5001			NTCIP 76.x.ATC RS-232				
3	○	Dulles and Viking				2	E-NET-5002		Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
4	○	Dulles and Broadmoor				2	E-NET-5002		Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
5	○	Dulles and Ave.E				2	E-NET-5002		Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
6	○	Dulles and Lexington				2	E-NET-5002		Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
7	○	Dulles and Plantation Colony				2	E-NET-5002		Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
8	○	Dulles and Cartwright				2	E-NET-5002		Dulles Ave	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
21	●	Bench 2070 V76 ENET - 21			76.8h	1	E-NET-5001	Bench Controllers		NTCIP 76.x.2070 Ethernet	192.168.104.191	COORD	LONG +20	S-TBC
22	●	Bench 2070 V76 ENET - 22			76.8k	2	E-NET-5002	Bench Controllers		NTCIP 76.x.2070 Ethernet	192.168.104.192	COORD	LONG -86	S-TBC
23	●	Bench NTCIP TS2V61.x ENET - 23				3	E-NET-5003			NTCIP 61.x.TS2 Ethernet	192.168.104.193			
24	●	Bench ATC V76 ENET - 24				4	E-NET-5004			NTCIP 76.x.ATC Ethernet	192.168.104.194			
25	●	Bench V76 ATCENET- ID 25			76.8f	5	E-NET-5005	Bench Controllers		NTCIP 76.x.ATC Ethernet	192.168.104.195	COORD	LONG +8	S-TBC
148	○	Bench 2070				2	E-NET-5002			NTCIP 65.x.2070 Ethernet	192.168.101.201			
149	○	Bench TS2				1	E-NET-5001			NTCIP 61.x.TS2 Ethernet	192.168.101.102			
150	○	90A and SH6				3	E-NET-5003		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
151	○	90A and Ulrich				3	E-NET-5003		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
152	○	90A and Brooks				3	E-NET-5003		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
153	○	Brooks and Guenther				3	E-NET-5003		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
154	○	90A and Bayview				3	E-NET-5003		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
155	○	90A and Savoy				1	E-NET-5001		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
156	○	90A and Eldridge				2	E-NET-5002		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
157	○	90A and Industrial				3	E-NET-5003		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			
158	○	90A and Dairy Ashford				3	E-NET-5003		Hwy 90 System	NTCIP 61.x.TS2 Ethernet	192.168.101.200			

The bottom section shows the 'Incident Trigger' tab with the following data:

ID	Description	Date/Time
1	Stop Timing Incident	4/17/2014 4:55 PM

A red arrow points to the entry in the 'Incident Trigger' table, and a red circle highlights the 'Incident Trigger' tab in the bottom navigation bar.

## 4.6.8 Adaptive Tab

The optional *Adaptive* tab is used to get real-time information from systems and controllers that have the Adaptive software module. Information such as Degree of Saturation, Optimal Cycle length, Optimal Split times, etc. will be displayed.

The screenshot displays the ATMS.now software interface, version 4.5.45.23. The main window is titled "Controller List" and shows a table of 75 found controllers. The table includes columns for Alarm, Status, Lock, ID, Name, Notes, Revision, Drop, Port, Master, Flex Group, Group, Type, IP Address, DHCP IP, and X-Reference. Below the table, there are buttons for "List" and "Map".

The "Adaptive" tab is selected and active, showing a "Field Chooser" on the left with a list of fields to be displayed. The fields listed are: ID, Name, Date/Time, Status, Optimal Cycle, Pattern, Prog DOS 1, Prog DOS 2, Prog DOS 3, Prog DOS 4, Prog DOS 5, Prog DOS 6, Prog DOS 7, Prog DOS 8, Prog Split 1, and Prog Split 2. The main area of the Adaptive tab is currently empty.

At the bottom of the interface, there is a navigation bar with several tabs: "Recent Alarms", "Alarm History", "System Notes", "Current Users", "Incident Trigger", "Daktroics", "Adaptive", "Selected Details", and "Trip Logs". The "Adaptive" tab is highlighted with a red circle.

Alarm	Status	Lock	ID	Name	Notes	Revision	Drop	Port	Master	Flex Group	Group	Type	IP Address	DHCP IP	X-Reference
3				Dulles and Viking			2	E-NET-5002			Dulles Ave	NTCIP 61.xTS2 Ethernet	192.168.101.200		0
4				Dulles and Broadmoor			2	E-NET-5002			Dulles Ave	NTCIP 61.xTS2 Ethernet	192.168.101.200		0
5				Dulles and Ave E			2	E-NET-5002			Dulles Ave	NTCIP 61.xTS2 Ethernet	192.168.101.200		0
6				Dulles and Lexington			2	E-NET-5002			Dulles Ave	NTCIP 61.xTS2 Ethernet	192.168.101.200		0
7				Dulles and Plantation Colony			2	E-NET-5002			Dulles Ave	NTCIP 61.xTS2 Ethernet	192.168.101.200		0
8				Dulles and Carwright			2	E-NET-5002			Dulles Ave	NTCIP 61.xTS2 Ethernet	192.168.101.200		0
21				Bench 2070 V76 ENET - 21		76.8h	1	E-NET-5001		Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.191		0
22				Bench 2070 V76 ENET - 22		76.8h	2	E-NET-5002		Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.192		0
23				Bench NTCIP TS2V61.x ENET - 23		61.12g	3	E-NET-5003		Bench Controllers		NTCIP 61.xTS2 Ethernet	192.168.104.193		0
24				Bench ATC V76 ENET - 24		76.10a	4	E-NET-5004		Bench Controllers		NTCIP 76.xATC Ethernet	192.168.104.194		0
148				Bench 2070			?	E-NET-500?				NTCIP 65.x 2070 Ethernet	192.168.101.201		0

## 4.6.9 Daktronics Tab

The optional *Daktronics* tab is used to get real-time information from Daktronics CMS devices that have been declared by the user. Message and Status information will be reported.

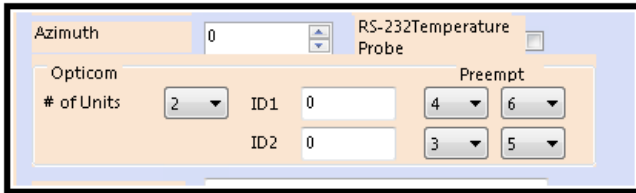
The screenshot shows the ATMS.now software interface. The top menu includes Home, Definitions, SynchroGreen, and Reports. The toolbar contains various icons for Database, Real-Time, Notes, Utilities, Server Status, Communication Status, and Configuration. The main area is a Map View showing a street map with blue lines and green markers. The legend on the left lists categories like Controller, BackgroundImage, Camera, and Centerline. The bottom navigation bar has several tabs: Recent Alarms, Alarm History, System Notes, Current Users, Incident Trigger, Daktronics (circled in red), Adaptive, Selected Details, and Trip Logs. The status bar at the bottom says 'Ready'.

This is a close-up of the Daktronics data table and navigation bar. The table has the following structure:

Name	Message 1	Message 2	Message 3	Message Status	Comm Status	Last Date/Time
Daktronic						3/20/2014 11:44 AM
Daktroni						3/20/2014 11:44 AM

The bottom navigation bar includes tabs for Recent Alarms, Alarm History, System Notes, Current Users, Incident Trigger, Daktronics (circled in red), Adaptive, Selected Details, and Trip Logs. The status bar at the bottom says 'Ready'.

## 4.6.10 Opticom Tab



Azimuth: 0  
RS-232 Temperature Probe:   
Opticom # of Units: 2  
ID1: 0  
ID2: 0  
Preempt: 4, 6, 3, 5

The *Opticom* tab (Only available in ATMS 1.x) displays system-generated Opticom log retrieval activity for all intersections. **ATMS** generates this log retrieval by defining an incoming general preemption alarm (#48) from the controller to initiate an automated log retrieval from the Opticom discriminator card(s) to **ATMS**. A special serial cable for communications between the Opticom card(s) and the serial port of the controller is required for this feature. Contact your Cubic | Trafficware representative for this cable.

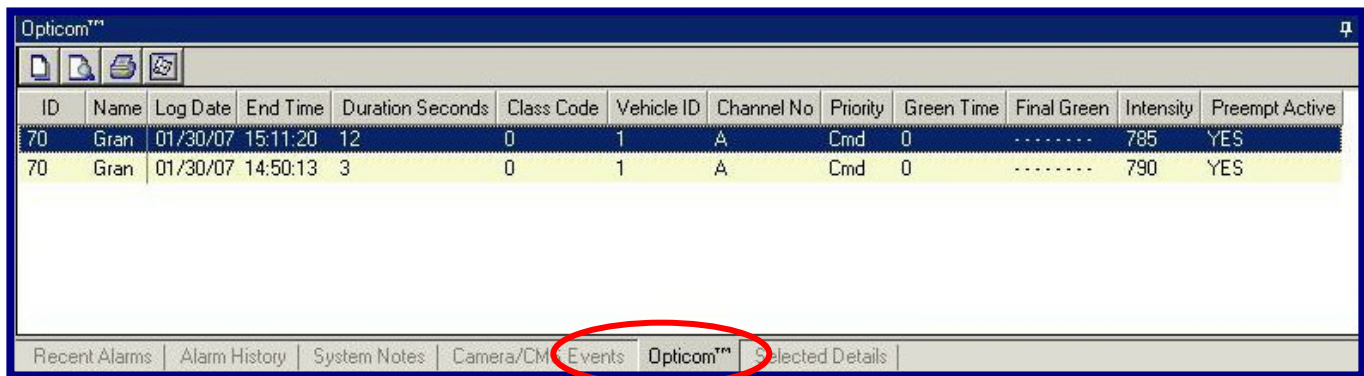
The automated system-generated activity is programmed in the *Action* pane under *Configuration...Edit Definition* screen for Controller set up as shown above. The Opticom box notifies the system that when incoming preemptions are received by **ATMS**, the system will automatically generate a log retrieval process for the corresponding device. The user can set up two Opticom two channel cards (ID1 and ID2) along with the preemptions (one preemption per channel) that each card will call.

Next, verify the proper serial connection between the controller serial port and the Opticom EVP cards. Program the controller serial port for *Opticom*. For the 900 series controller, set the “PC Print” port for “CMU” under MM>6>1. For the 2070, define the “Opticom” setting for the appropriate serial port (Async1-4) under “Port Bindings” (MM>6>6).

Set the serial port to the appropriate serial rate. (The default Opticom serial settings are 9600 baud). For both the 2070 and the 980 series controllers, go to MM>6>2. For the 2070, set the “FCM” to 6. The 2070 requires a power cycle to initiate the Port Binding changes.

Enable EVENT #48 (MM>1>6>1) and ALARM #48 (MM>1>6>4) in the controller. This flags a general “Preempt Active” alarm to be sent to **ATMS** during “Full Status” polling of the controller.

Lastly, enable “Preempt Events” in the controller. In both controllers, this is located at MM>1>6>7>1.



ID	Name	Log Date	End Time	Duration Seconds	Class Code	Vehicle ID	Channel No	Priority	Green Time	Final Green	Intensity	Preempt Active
70	Gran	01/30/07	15:11:20	12	0	1	A	Cmd	0	-----	785	YES
70	Gran	01/30/07	14:50:13	3	0	1	A	Cmd	0	-----	790	YES

After programming at the controller and **ATMS** is complete, all incoming Preempt Alarms will result in a real-time log retrieval of the event. An example of this is shown below. This automated feature of log retrieval only gathers the most recent logged event, not the entire log on the Opticom EVP card.

## 4.6.11 Current Users

The *Current Users* tab displays all of the users that are actively logged onto the system. This feature helps in situations such as to determine which other users can be contacted through the *Broadcast Message* feature, or who is logged into the system when the server needs to be shut down for updates, etc.

Session	User Name	Login Date/Time	Last Date/Time	Host Name	ATMS.nowVersion
1	naztec	3/20/2014 11:31 AM	3/20/2014 12:03 PM	Naztec-PC	4.5.45.23
2	Atraffictedh	3/20/2014 12:02 PM	3/20/2014 12:02 PM	Naztec-PC	4.5.45.23



## 4.6.12 Selected Details Tabs

The *Selected Details* tab opens a second layer of tabs that provide specific intersection(s) information:

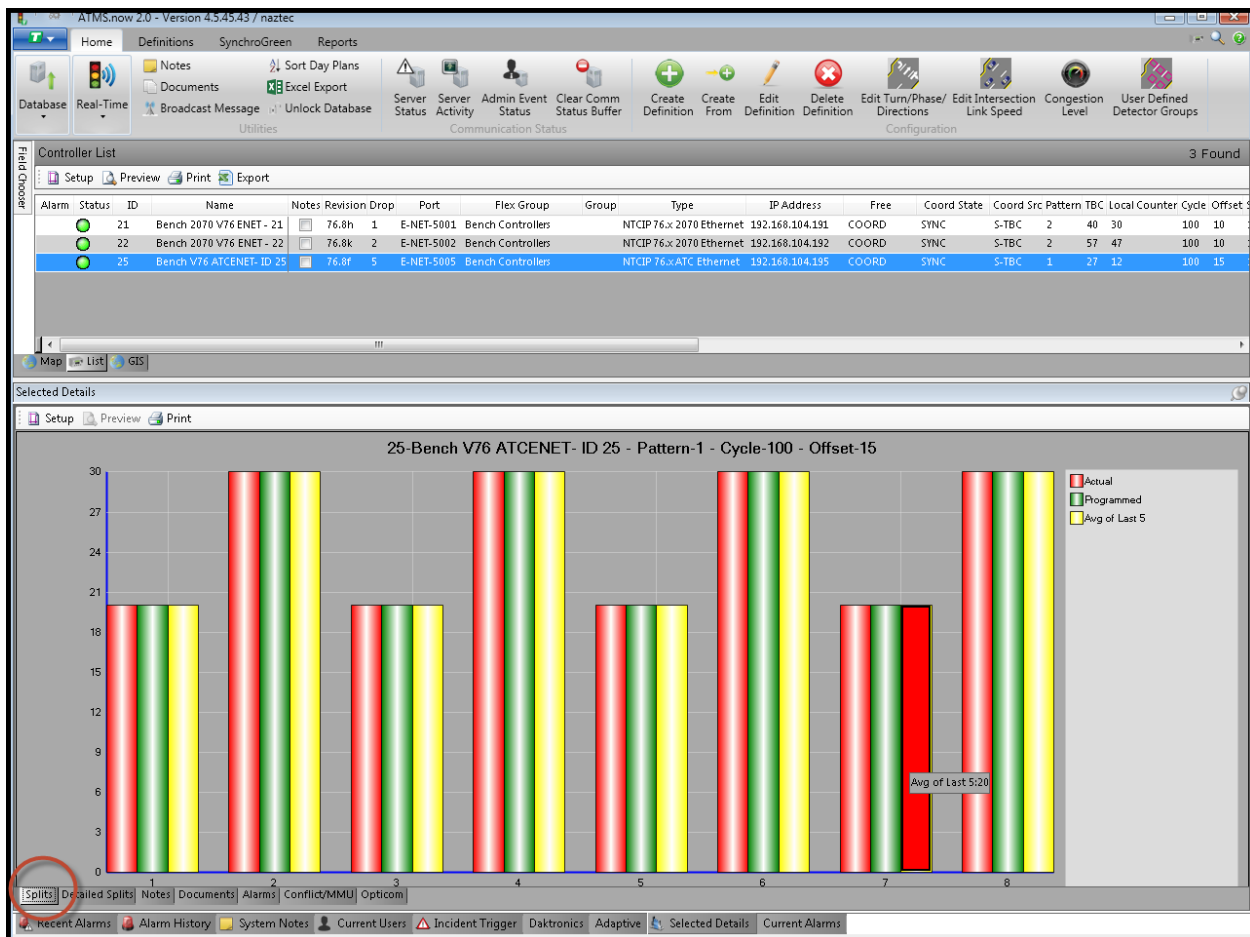
### Splits Tab

The *Splits* tab provides real-time graphical split monitoring for a single controller based on controller selection from the *Controller List* or *GIS* pane. The split monitor graphically displays three values for each active phase:

- ACTUAL (real-time)
- PROGRAMMED
- AVERAGE OF 5 CYCLES

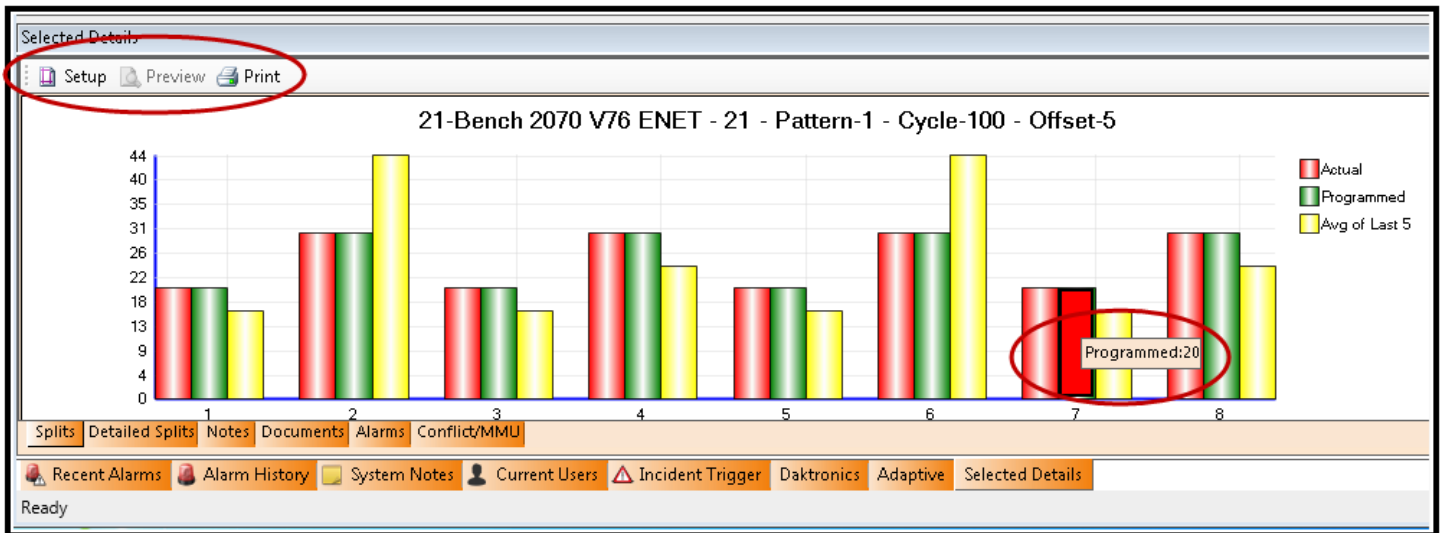
To view the *Split* monitor, highlight the desired controller from the *List* or *Map*, then select the *Splits* tab. If multiple controllers are selected, the *Split* monitor will display the first selected until another single selection is made.

The real-time split information is gathered during the system's "Full Status" activity for the programmed group(s) in the *Scheduler*, and historical reports for the Split data can be retrieved in the *Reports* module of **ATMS**.



**ATMS** provides saving and printing options by using the icons on the upper left of the screen.

An informational “Hover Balloon” will appear detailing the exact value of the split when positioning your mouse over the targeted split bar.



To make viewing of this split monitor easier, it is recommended to re-size the *Selected Details* pane by dragging the pane break upward.

The Split Monitor and Detailed Split Monitor can also monitor green time utilization while in “FREE” operation. However, this requires the local firmware in the controllers to be the following revisions for this feature to properly calculate for this feature: v61.3k or higher for 970/980/981 series NEMA controllers and v76 for 2070, ATC, and Scout controllers.

### Detailed Splits Tab

The *Detailed Splits* tab provides real-time numerical split monitoring for a single controller.

The *Detailed Splits* monitor will gather information for each intersection when the **ATMS** client is launched. This monitor only works for a single controller at a time.

To view the *Detailed Split* monitor, highlight the desired controller from the *List* or *Map*, then select the *Detailed Split* tab. If you wish to reset the collected data, select the “Reset” icon in the upper left of the *Detailed Split* window.

**ATMS** provides saving and printing options by using the icons on the upper left of the screen.

Selected Details

ID 21 Cycle Count 8 Cycle Length 113

Split per Phase (Avg of Last 5)

	1	2	3	4	5	6	7	8
Actual	28	30	25	30	28	30	25	30
Program	20	30	20	30	20	30	20	30
Util %	140	100	125	100	140	100	125	100
Avg Split	29	35	25	30	29	35	25	30
Avg Util %	245	216	225	100	245	216	225	100
Actual g/C %	24	26	22	26	24	26	22	26
Program g/C %	17	26	17	26	17	26	17	26
Avg Act g/C %	25	30	22	26	25	30	22	26

Reason for Termination Counts

	1	2	3	4	5	6	7	8
Force Off	1	2	2	0	1	2	2	0
Gap	0	0	0	0	0	0	0	0
Max	1	0	0	2	1	0	0	2

Phase Splits per Cycle

Time	1	2	3	4	5	6	7	8	Cycle
12:33:12	30	40	25	30	30	40	25	30	125
12:31:06	0	35	0	20	0	105	0	20	132
12:28:59	0	35	0	40	0	35	0	40	132
12:26:45	0	80	0	20	0	80	0	20	100
12:25:05	0	100	0	0	0	100	0	0	100
12:23:25	0	100	0	0	0	100	0	0	100

Split: Detailed Splits | Notes | Documents | Alarms | Conflict/MMU

Recent Alarms | Alarm History | System Notes | Current Users | Incident Trigger | Daktronics | Adaptive | Selected Details

Ready

Historical split information can be retrieved through the “Split History Report” in the Reports section. This report displays only the **GREEN** time of the split.

## Notes Tab

This tab displays controller-specific *Notes* when a controller is selected and this tab is open. **ATMS** displays the creation date of the *Note*, the message, and the author of the *Note*.

Creation of the *System Note* or *Note* (controller note) will be discussed in the **Notes section under Utilities** section of this manual.

The screenshot displays the ATMS software interface. The top menu bar includes Home, Definitions, SynchroGreen, and Reports. Below the menu bar is a toolbar with various icons for actions like Edit, View, Upload, Download, and Configuration. The main window is divided into two sections: "Controller List" and "Selected Details".

**Controller List**

Alarm	Status	Lock	ID	Name	IP Address	DHCP IP	X-Reference	Lock	User Name	TEAMS ID	Free	Coord State	Coord Src	Pattern	TBC	Local	Counter	Cycle	Offset	Sec
	●		21	Bench 2070 V76 ENET - 21	2.168.104.191		0				COORD	SYNC	B-TBC	1	61	56	100	5	1	
	●		22	Bench 2070 V76 ENET - 22	2.168.104.192		0				COORD	SYNC	B-TBC	1	62	62	100	0	1	
	●		23	Bench NTCIP TS2V61.x ENET - 23	2.168.104.193		0				CRDFREE	FREE	TBC	0	22	13			1	
	●		24	Bench ATC V76 ENET - 24	2.168.104.194		0				COORD	SYNC	TEST	1	63	48	100	15	1	

**Selected Details**

ID	Name	Date	Description	User
23	Bench NTCIP TS2V61.x ENET - 23	03/20/2014	Initialized 03/17/14	naztec
23	Bench NTCIP TS2V61.x ENET - 23	03/20/2014	Tested by AJB 3/20/14	naztec
23	Bench NTCIP TS2V61.x ENET - 23	03/20/2014	Installed in Field by GJ om 3/21/14	naztec

The "Notes" tab in the bottom navigation bar is circled in red. The "Selected Details" tab in the bottom right navigation bar is also circled in red.

## Documents Tab

This tab provides for **ATMS** to index and view *Documents* (files) such as .pdf, .dwg, .doc, .xls, .jpg, etc, by intersection. Using this feature enables your staff to quickly locate as-built drawings, cabinet prints, pictures and files by selecting the desired intersection, then double-clicking the desired document displayed in the *Documents* tab. **ATMS** will then open the selected document using the appropriate viewing program. Creating a *Document* will be discussed in the **ACTIONS** section of this chapter.

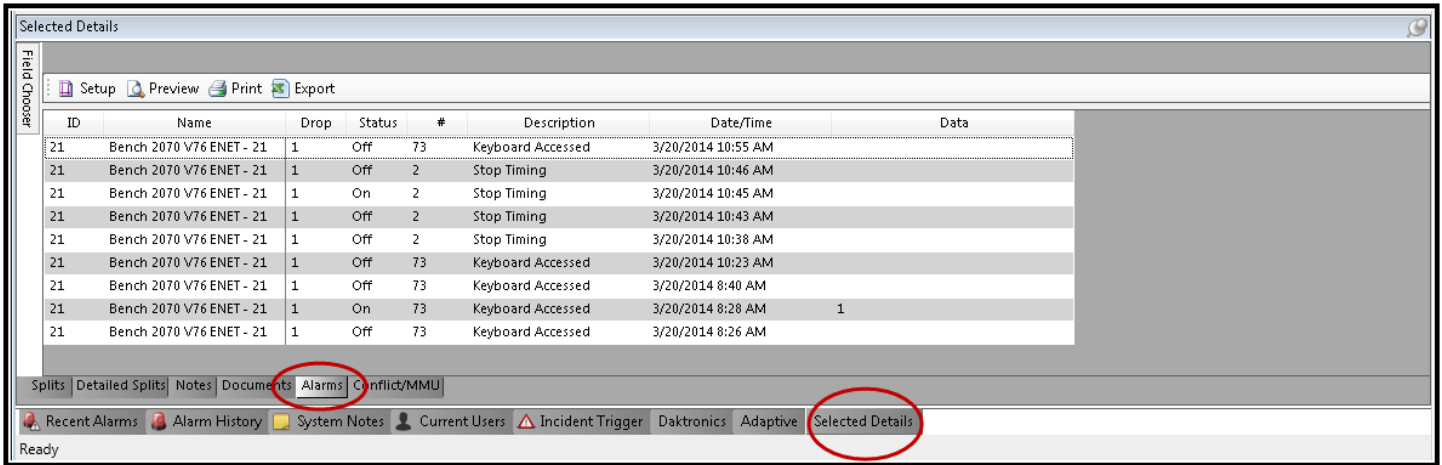
**ATMS** does not provide the viewing programs such as AutoCAD Viewer, Adobe Reader, and Microsoft programs to view specific files. Each local agency is responsible for providing licensed installations of each program for this feature to operate.

The screenshot displays the ATMS software interface. The main window shows a 'Controller List' table with columns for Alarm, Status, Lock, ID, Name, Notes, Revision, Drop, Port, Master, Flex Group, Group, Type, IP Address, DHCP IP, X-Reference, Lock, User Name, TEAMS ID, and Fre. A red box highlights the 'Documents' tab in the bottom navigation bar, with a red arrow pointing to a new Adobe Acrobat window that has opened, displaying a PDF document titled 'Signal Mod Plans - revised 10 29 13r Rev 3 Sheets Only.pdf'. The PDF content shows a complex technical drawing with various diagrams and tables.

Alarm	Status	Lock	ID	Name	Notes	Revision	Drop	Port	Master	Flex Group	Group	Type	IP Address	DHCP IP	X-Reference	Lock	User Name	TEAMS ID	Fre
			21	Bench 2070 V76 ENET - 21		76.8h	1	E-NET-5001	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.191		0				COORD	
			22	Bench 2070 V76 ENET - 22		76.8h	2	E-NET-5002	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.192		0				COORD	
			23	Bench NTCIP TS2V61.x ENET - 23		61.12g	3	E-NET-5003	Bench Controllers		NTCIP 61.x TS2 Ethernet	192.168.104.193		0				CRDFRE	
			24	Bench ATC V76 ENET - 24		76.10a	4	E-NET-5004	Bench Controllers		NTCIP 76.x ATC Ethernet	192.168.104.194		0				COORD	

## Alarms Tab (Controller)

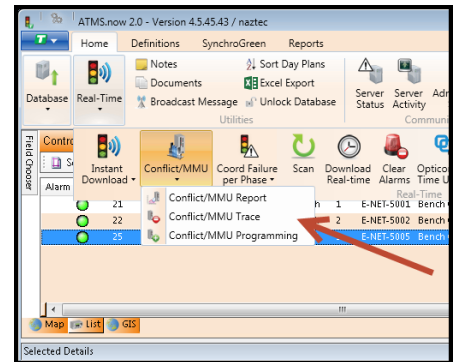
This tab provides controller-specific Alarm details for the selected controller on the *List* or *Map*. This information is a narrowed view from the general Alarm information on the *Recent Alarm* and *Alarm History* tabs. To view controller-specific alarms, select the targeted controller and navigate to the *Alarms* tab in the *Selected Details* tab. These alarms can be cleared from the list by navigating to *Actions...RealTime...Clear Alarms*.



## Conflict / MMU Tab

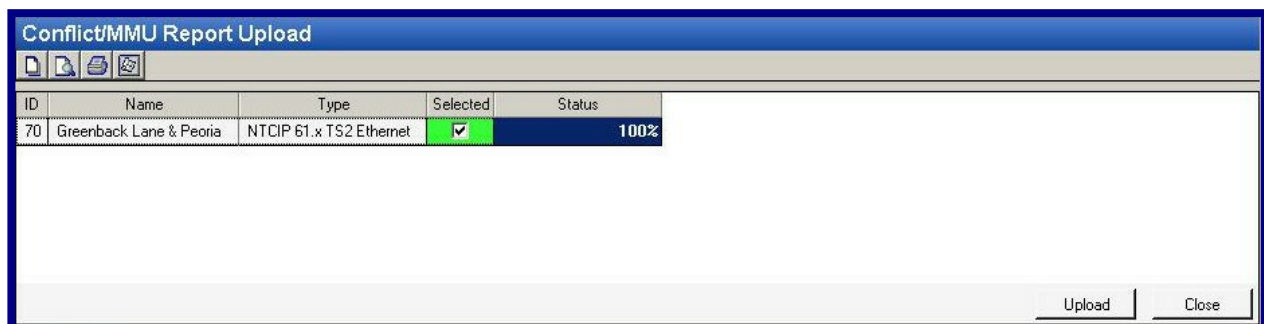
This tab records the log retrievals from Cubic | Trafficware CMU's and MMU's that are brought back to **ATMS**. A special serial cable for communications between the CMU/MMU and the serial port of the controller is required for this feature. Contact your Cubic | Trafficware representative for this cable.

If the Cubic | Trafficware CMU or MMU is connected to the controller, select the targeted intersection from the *List* or *Map*, then navigate to the Real-Time Icon or "right-click". The user has a choice of three monitor report types:

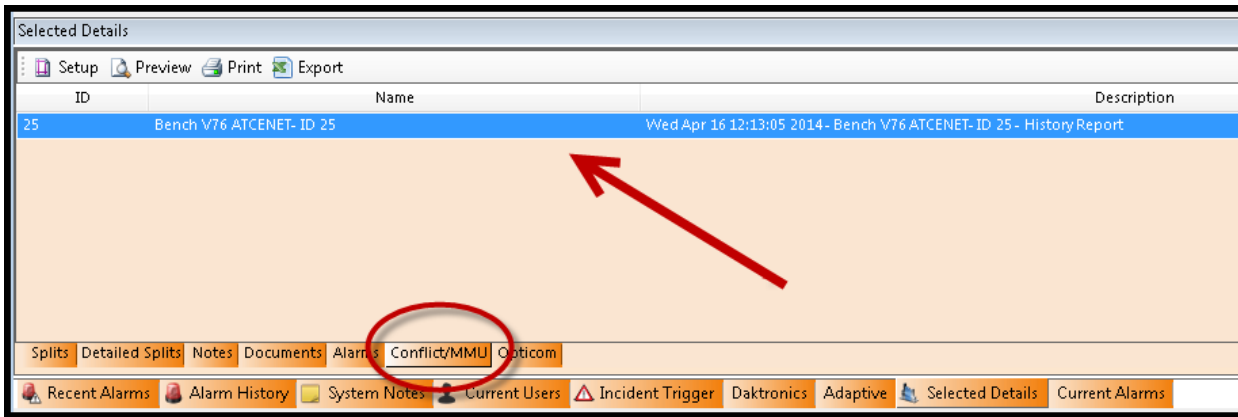


- **Conflict/MMU Report** – log of any recordable event in the monitor
- **Conflict/MMU Trace** – log of signal status leading up to conflict
- **Conflict/MMU Programming** – log of current permissive programming in monitor

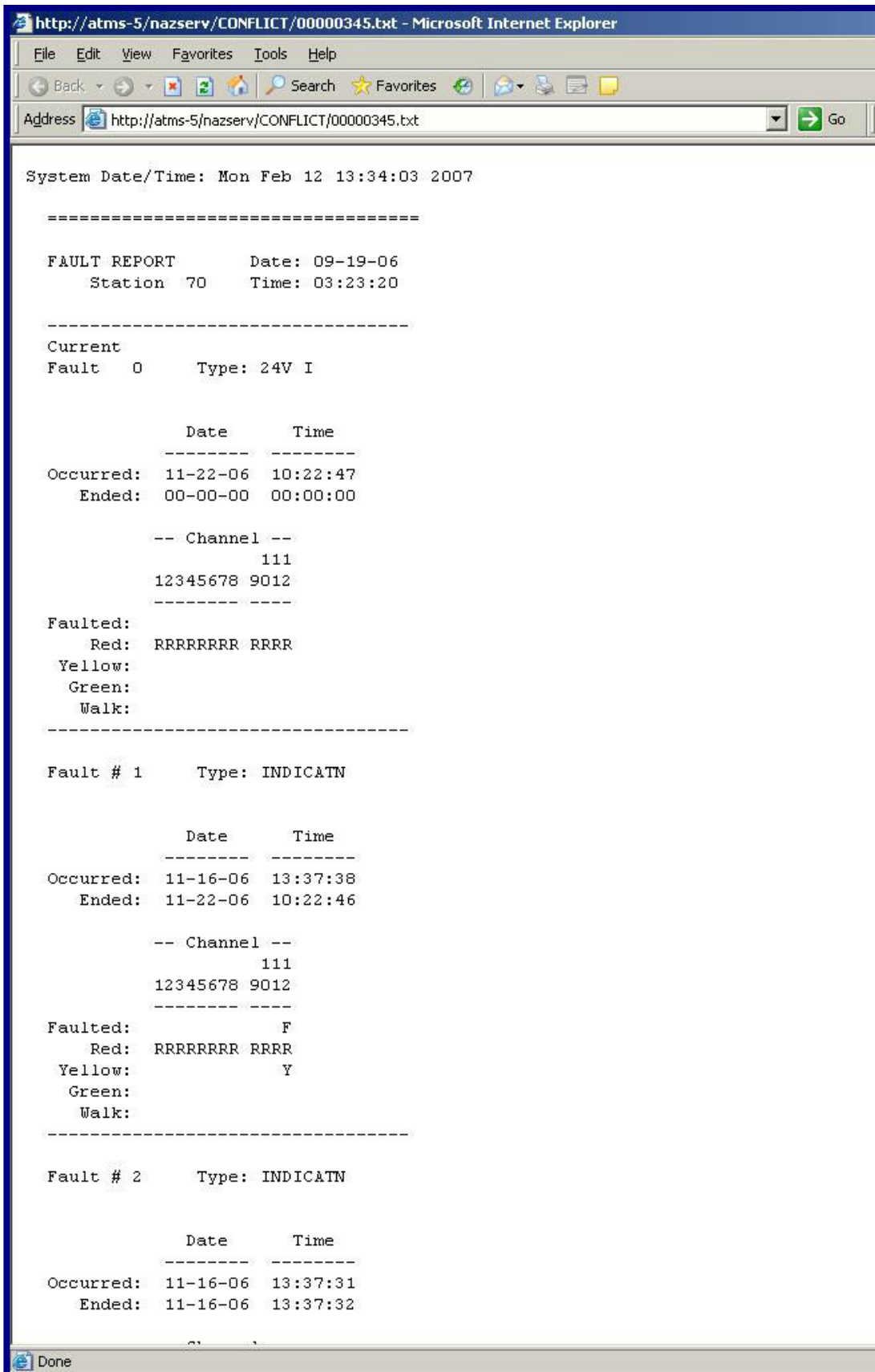
After selecting the desired report type, "Upload" the monitor information as shown below. When the upload is complete, "Close" the window.



The new Conflict/MMU report will be posted in the *Conflict/MMU* tab.



To view the Conflict/MMU logs, simply highlight the targeted report and select the “return” key. The report is stored in a text format via Internet Explorer browser. The browser will launch and the report will be displayed (see Figure below).





## Opticom Tab (by Controller)

This tab provides the same Opticom log information as detailed earlier, but displays the log information by specific controller for easy retrieval and tracking. To view the controller-specific log, highlight the targeted controller and navigate to the *Selected Details-Opticom* tab.

**Controller List** 761 Found

Alarm	Comm	ID	Name	Drop	Flex Group	IP Address	Free	Coord	Pattern	Cycle	Offset	R1 M
<input type="radio"/>		1	Caltrans 170 vC-8.10	3	ATMS Demo - ALL							
<input type="radio"/>		10	2070 Traffic Responsive Master	1								
<input type="radio"/>		11	Synchro Test	10								
<input type="radio"/>		20	County Line Rd and US 1	10	County Wide	192.168.101.155						
<input type="radio"/>		30	Tequesta Dr and Old Dixie Hwy	10		192.168.101.155						
<input type="radio"/>		35	Tequesta Dr and US 1	10	County Wide	192.168.101.155						
<input type="radio"/>		40	Alt A1A-SR 707-Beach Rd and US 1	10	County Wide	192.168.101.155						
<input type="radio"/>		45	Riverside Drive and Alt A1A	10	County Wide	192.168.101.155						
<input type="radio"/>		60	Naztec ITS Controller	10		192.168.100.060						
<input checked="" type="radio"/>		70	Greenback Lane & Peoria	1	ATMS Demo	192.168.100.070	FREE	FREE	0			
<input checked="" type="radio"/>		81	Greenback Lane & Binet/Brookhaven	1	ATMS Demo	192.168.100.081	COORD	SYNC	1	100	50	
<input checked="" type="radio"/>		82	Greenback Lane & Dewey Dr.	2	ATMS Demo	192.168.100.082	COORD	LONG	1	100	25	1
<input type="radio"/>		83	2070L #3	10		192.168.100.083						
<input type="radio"/>		84	2070L #4	10		192.168.100.084						
<input type="radio"/>		85	2070L #5	10		192.168.100.085						
<input type="radio"/>		86	2070L #6	10		192.168.100.086						
<input type="radio"/>		87	2070L #7	10		192.168.100.087						
<input type="radio"/>		88	2070L #8	10		192.168.100.088						
<input type="radio"/>		90	2070L #10	10		192.168.100.090						
<input type="radio"/>		91	Shasta View and Tarmack	1		192.168.100.091						
<input type="radio"/>		100	Center St and Alt A1A	10	County Wide	192.168.101.155						
<input type="radio"/>		110	Coastal Shop & US 1	10		192.168.101.155						
<input type="radio"/>		115	Indiantown Rd and FL Turnpike	10	County Wide	192.168.101.155						
<input type="radio"/>		120	Indiantown Rd and W. Juniter Plaza	10	County Wide	192.168.101.155						

List Map

---

**Selected Details**

ID	Name	Log Date	End Time	Duration Seconds	Class Code	Vehicle ID	Channel No	Priority	Green Time	Final Green	Intensity	Preempt Active
82	Greenback Lane & Dewey Dr.	01/01/01	02:22:05	12	0	1	A	Cmd	0	.....	787	YES
82	Greenback Lane & Dewey Dr.	01/01/01	02:19:44	10	0	1	A	Cmd	0	.....	789	YES

Splits Detailed Splits Time Space Notes Documents Alarms Conflict MMU **Opticom\*\***

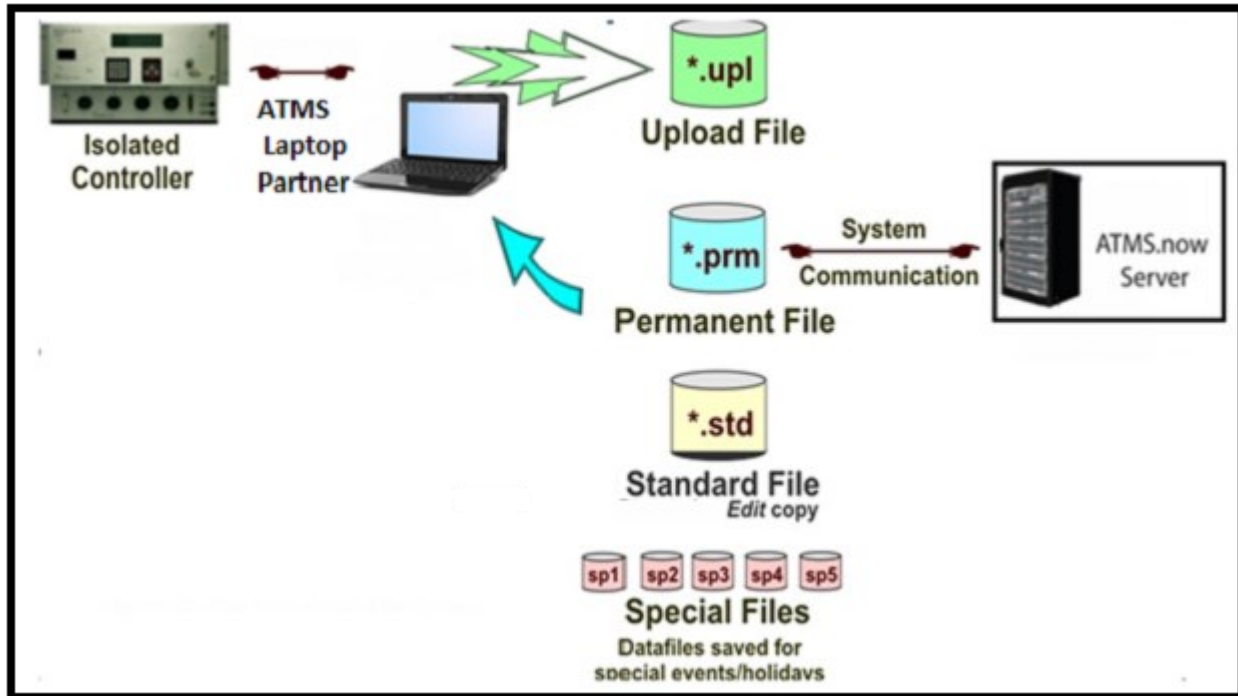
Recent Alarms Alarm History System Notes Camera/CMS Events Opticom\*\* Selected Details

Before moving to the Navigator pane, it is important to understand the controller database filing system. The next section discusses each database file type and how each is used in **ATMS**.

## 4.7 Understanding the ATMS File System

**ATMS** maintains separate copies for each of the controller databases in the SQL database of the server. This section explains the purpose of each file and how **ATMS** maintains the file system and interfaces with the ATMS Laptop Partner software.

The key to understanding the ATMS file system is how the system protects the *Permanent File* (last successful download through the communication system). The system performs a verification by uploading the controller to the *Upload File* and comparing the upload with the *Permanent File*. The verify procedure is used to prevent edit changes at central from being copied over valid changes made in the field through the keyboard.



### 4.7.1 Upload File

**ATMS** saves a copy of the controller database uploaded by the ATMS Laptop partner or StreetSync software during a “Hot Sync” or the **ATMS** system upload to the *Upload File*. The *Permanent* and *Standard Files* are protected from all field uploads and from the ATMS Laptop partner or StreetSync software hot-sync procedure. Therefore, the user is required to manually copy the *Upload File* to either *Standard* or *Permanent* to commit any changes uploaded through the system.

## 4.7.2 Permanent File

**ATMS** saves a copy of the last successful download to the *Permanent File* to maintain an accurate copy of each controller database in the field. A separate *Permanent File* for each controller is stored in the SQL database on the **ATMS** server.

The user can also perform an “Upload” from the controller directly into the *Permanent File* by selecting this function in the Upload procedure.

The *Permanent File* is transferred to a laptop or tablet via the ATMS Laptop partner or StreetSync software synchronization process. This insures that the laptop or tablet carries the last successful download to the field.

Whenever a download creates a Permanent File an archived file is also created. This file can be accessed by the agency to view or restore historical controller data.

## 4.7.3 Standard File

**ATMS** provides an edit copy of the controller database called the *Standard File*. A separate *Standard File* for each controller is stored in the SQL database for the **ATMS** server. The user edits the *Standard File* and downloads the edited database to the controller. If the download is successful, the **ATMS** system will automatically copy the *Standard File* to the *Permanent File*. Therefore, the system always maintains a copy of the downloaded database in the *Permanent File*.

The user can also perform an “Upload” from the controller directly into the *Standard File* by selecting this function in the Upload procedure. This function is effective prior to beginning a database editing process, assuring a proper starting point for editing.

## 4.7.4 Special Files

Five *Special Files* are provided in **ATMS** as additional, complete controller databases for some future purpose. *Special Files* for each controller are stored in a SQL database on the server with a **.sp1**, **.sp2**, **.sp3**, **.sp4** or **.sp5** file extension.

*Special Files* should be named with descriptive titles like "Christmas shopping period", "Football game day", etc. to make the files easy to identify when you want to download them to a controller at a later time. You can edit *Special Files* using **ATMS** just like you edit the *Standard file*.

## 4.8 Upload - Download in ATMS

The **ATMS** *Actions* pane (upper left of *Home Page*) provides a *Database* menu in the *Home* Module. The *Database* menu provides the manual communication tasks to the controllers in the field. The automated communication tasks are handled by the *Scheduler* and will be discussed later.

This section explains why the system uploads to a separate *Upload* file rather than the *Standard* file you edit when you manage the controller database from your workstation. This section also explains the difference between *Download Verify* and *Download No-Verify*.

### 4.8.1 Uploading in ATMS

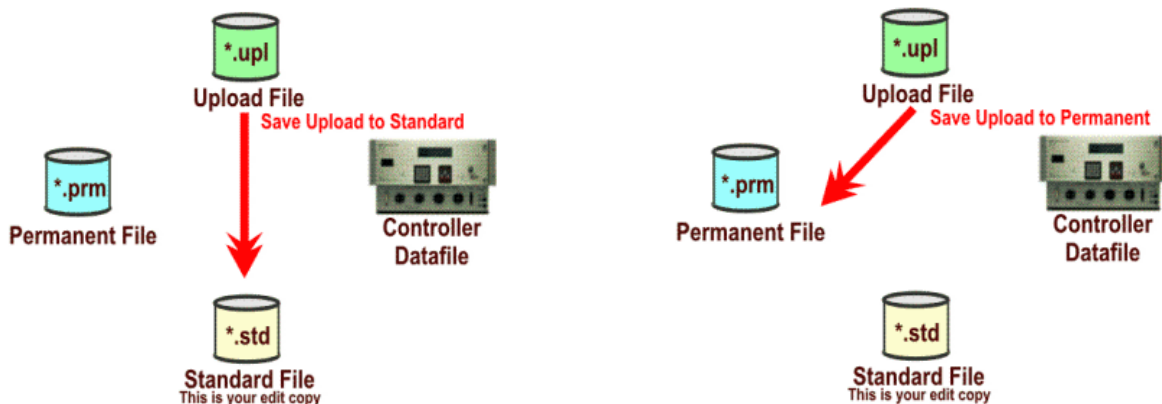
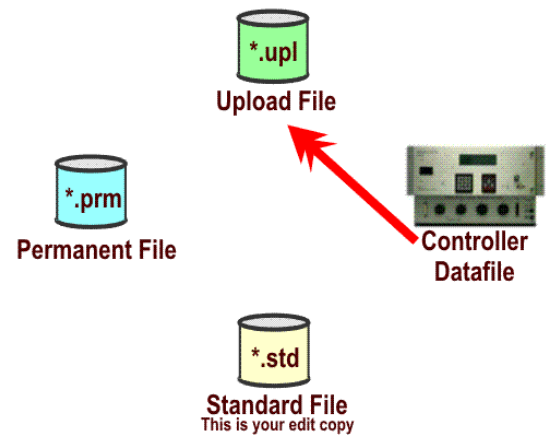
The "Upload" procedure uploads the controller database from the field and stores a copy in the *Upload File*.

The *Upload File* is only intended to be a temporary copy of the controller database. Therefore, the *Upload File* must be saved to the *Standard File* before it can be edited.

The *Upload File* must also be saved to the *Permanent File* if you want it to become the permanent record of the controller database in the field.

Keep in mind that you should not attempt to edit an uploaded controller database until the *Standard File* matches the *Upload File*.

**ATMS** provides for the ability to directly *Upload* to both the *Standard* and *Permanent Files* by checking the corresponding boxes on the *Upload* screen prior to uploading.



## 4.8.2 Downloading in ATMS

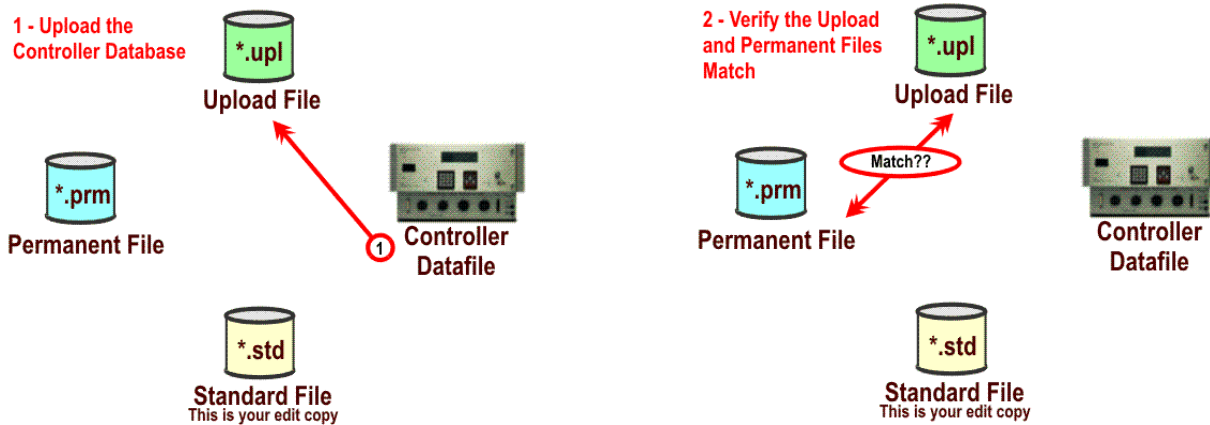
**Note: It's highly recommended to "Upload" and "Compare" before downloading any changes to the controller.**

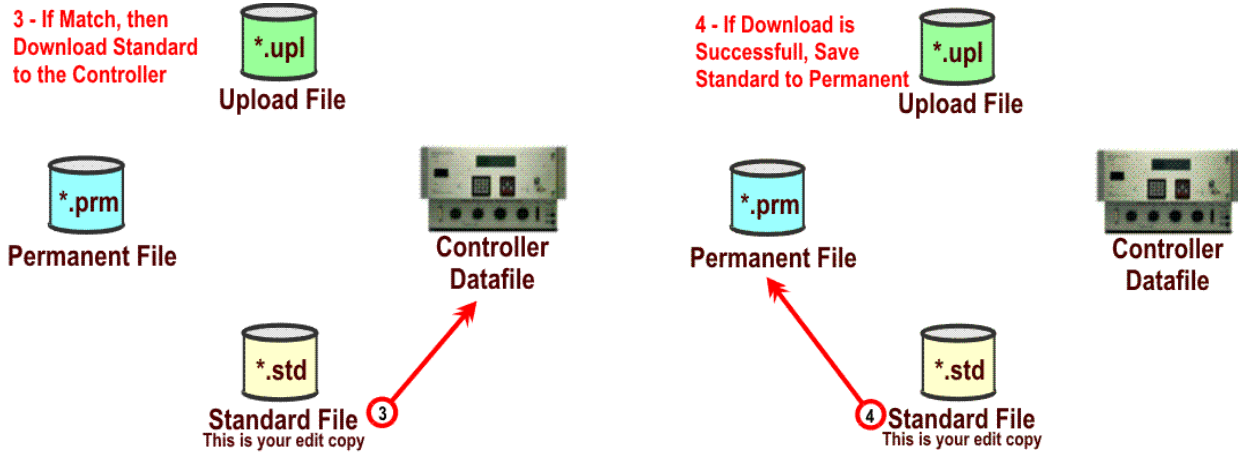
Two download procedures (options) are provided in **ATMS**, providing the option to verify that the controller database matches the *Permanent File* before you overwrite it or not:

### Download With Verify

Download With Verify uploads the controller and compares the *Upload* and *Permanent File* to verify that they match before overwriting the controller with the download. If the *Upload* from the controller and the *Permanent File* differ, the procedure halts with the message, "Database Mismatch", and highlights the transaction in **RED**. At this point, the user can compare the *Upload* and *Permanent Files* to isolate the differences and decide whether to commit the download to the field.

For example, a field crew may have set min recalls in the field to correct a detector failure. Download With Verify can prevent overwriting these valid field changes from the central system. In this case, the operator may decide to set the same min recalls in the Standard File before committing the download.





The four sequences (1-2-3-4) in the above illustration depict the steps performed during *Download With Verify*. This process compares the controller database with the *Permanent File* to verify a match before copying the *Standard File* or a *Special File* to the controller. If the controller database and *Permanent File* differ, the download halts with a **RED-indicated** message "Database Mismatch" as shown below.

"Database Mismatch" stops the download process and prevents the local controller database from being overwritten. **At this point, the user must upload the controller data to the Upload file.** The user can select the "Compare" utility in the *ACTIONS* pane to compare the latest *Upload File* with the *Permanent File*. The compare utility can help the user resolve any differences in the field data before copying over the field database with *Download No-Verify*. Operating the "Compare" function will be described in the next section.

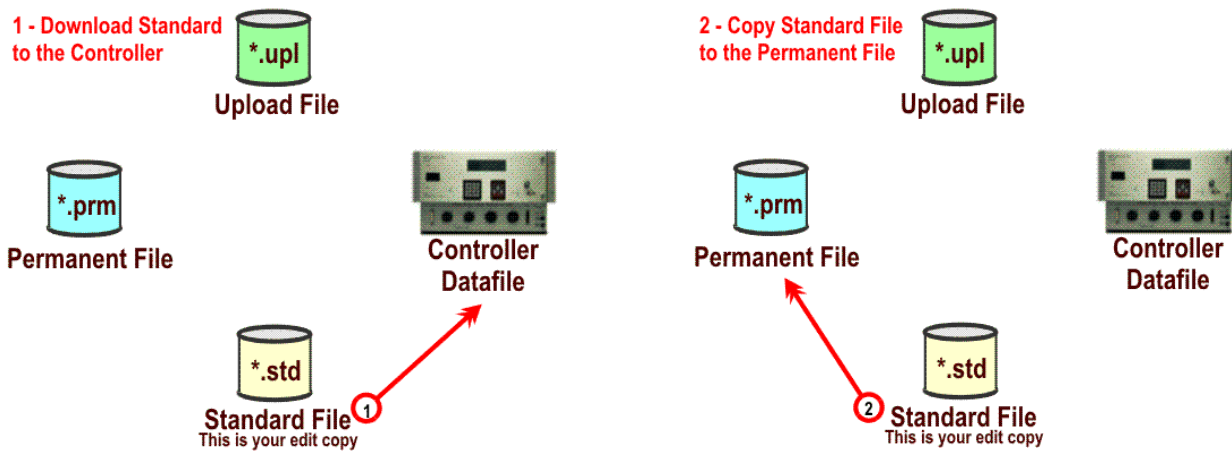
Download Controller Database							
ID	Name	<input type="checkbox"/> Selected	Status	<input type="checkbox"/> Verify	<input type="checkbox"/> Full Xfer	Configuration	
21	Bench M53 (2070) V76 ENET - 21	<input checked="" type="checkbox"/>	100%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Standard	
25	Bench V76 ATC - 25-TSP/LRT	<input checked="" type="checkbox"/>	100%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Standard	
26	Test V76.x ATC - 26 FYA SDLC	<input checked="" type="checkbox"/>	DATA MISMATCH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Standard	
38	Test V76 ATC-CFI	<input checked="" type="checkbox"/>	DATA MISMATCH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Standard	

Select *Verify* along with *Full Xfer* when doing a *Download No-Verify*. In this way you will force ATMS in doing an upload prior to downloading any data.

## Download No-Verify (Full Xfer)

*Download No-Verify* is used when you don't care if the controller database is different from the *Permanent File*, and most likely, the *Standard File* that you have been editing on. For example, after swapping out a controller in the field, you already know that the controller database and the *Permanent File* do not match. In this case, use *Download No-Verify* to force the system to overwrite the controller database and save the download to the *Permanent File*. It is highly recommended that the system administration use discretion in regards to which users have this capability enabled in *User Definitions*.

*Download No-Verify* is a two-step process as shown below. When the download is 100% complete, the *Standard File* is automatically copied to the *Permanent File* in **ATMS**. At this point, the *Permanent File* reflects the database last downloaded to the controller from the central office.



Select *Full Xfer* when doing a *Download No-Verify*.

## Download Selected Changes

If the user has edited the standard database and only wants to download those changes, deselect the *Verify* and *Full Xfer* boxes as shown below.

ID	Name	Selected	Status	Verify	Full Xfer	Configuration
21	Bench 2070 V76 ENET - 21	<input checked="" type="checkbox"/>	100%	<input type="checkbox"/>	<input type="checkbox"/>	Standard
22	Bench 2070 V76 ENET - 22	<input checked="" type="checkbox"/>	100%	<input type="checkbox"/>	<input type="checkbox"/>	Standard
25	Bench V76 ATCENET- ID 25	<input checked="" type="checkbox"/>	100%	<input type="checkbox"/>	<input type="checkbox"/>	Standard

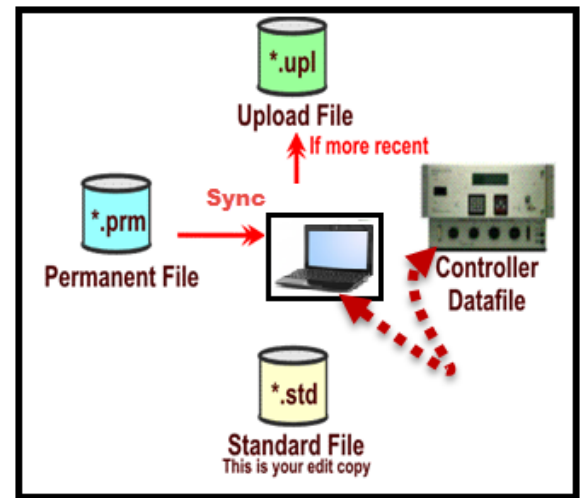
## 4.9 ATMS StreetSync Database Synchronization

The **ATMS StreetSync** software modules provide complete controller database storage on a Windows Laptop device. These software utilities provide a “Sync” utility to refresh the data between the Laptop and the **ATMS** file system. At any time, a Laptop or tablet with this software can “Sync” with the **ATMS** server or workstation.

The “Sync” procedure performs two functions:

- Saves the handheld database to the *Upload File* if the handheld data is more recent than the system data.
- Copies the *Permanent File* from the system to the handheld if the system data is more recent.

The system administrator is responsible for accepting and copying the Upload File to Standard and Permanent to save databases retrieved with the ATMS Laptop software. This is done by selecting the Controller, Group, or Flex Group and utilizing the *Copy* feature in the *Action* pane. It is recommended that before utilizing the *Copy* function, that each controller upload file is verified by using the *Compare* feature in the *Action* pane. Performing both the *Copy* and the *Compare* functions will be detailed in the *Actions* section of this manual (Section 4.7.1).



### 4.9.1 Upload Sync

Upload sync has been added for those agencies that utilize StreetSync and want to copy their upload database to the permanent database and create a date/timestamped Archive of this database. After performing a Sync Operation in StreetSync you will be notified that ATMS has some upload files that have been modified in the field via ATMS alarm number 268 being reported. Once this alarm has been reported, the user is allowed to right-click and select Database-> Upload Sync. This feature is described in Chapter 5 of this manual.

## 4.10 Summary – Understanding the ATMS File System

The following summarizes the key points and features provided by the **ATMS** file system:

- The *Standard File* is the edit copy of the database used to download changes to the field.
- You must “*Upload to Standard*” or “*Copy*” *Upload to Standard* before the data uploaded from the field can be edited.
- You must “*Upload to Permanent*” or “*Copy*” *Upload to Permanent*” if you want the database uploaded from the field to be the new permanent copy on your system.
- The *Permanent File* is automatically saved when the *Standard File* is successfully downloaded.
- The *Permanent File* is used with *Download-Verify* to prevent overwriting edits made in the field.
- *Download No-Verify* always overwrites the field database and saves to the *Permanent File*.
- The *Permanent* and *Standard* files should be saved manually after a Laptop or tablet synchronization by performing a “*Copy*” of the *Upload File* to the *Standard* and *Permanent Files*.



## 4.11 Lock User Feature



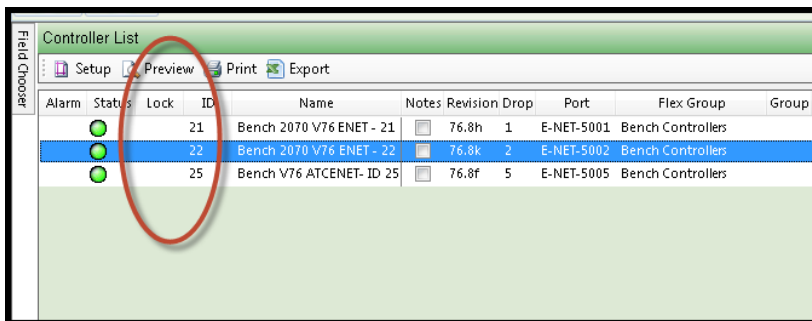
An added safeguard in **ATMS** is the Lock User Feature. This feature allows a database to be locked to all other users when another user is in the edit screen of a database. In other words, multiple users will not be allowed to edit the database simultaneously. If a database is locked and a user attempts to edit the database, they will be prompted with a warning screen that it is locked, but they can still view the database.

The database will become unlocked when the current user clicks **Apply, OK or Cancel** and leaves the edit screen of the database. Care should be taken because the database will *remain locked* if the user leaves the edit database screen without using the **Apply, OK, or Cancel** buttons. (One way this can be done is by clicking on any one of the Actions or Navigation options.)

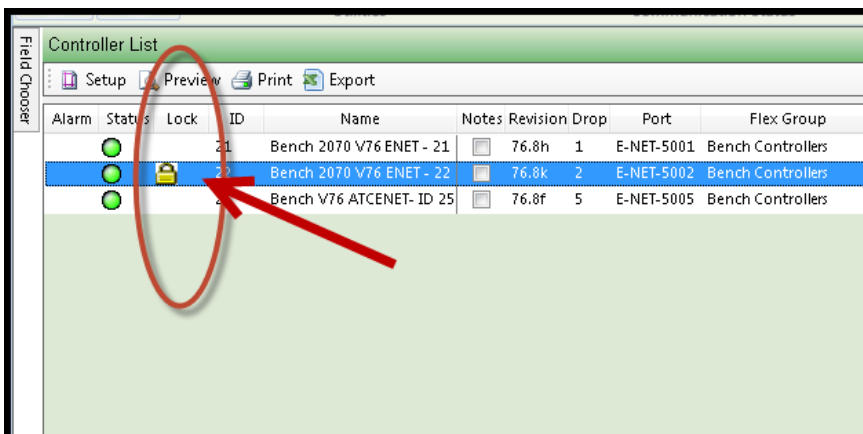
Once the database is locked, it can only be unlocked by two methods. The first is that the user that locked it must go back to the edit screen and click the **Apply, OK, or Cancel** buttons. A second way is by any other user that has the “*Unlock Database*” feature enabled in their user permissions. Agencies should limit the number of users that have the “*Unlock Database*” permission to administrators only.

Caution must be taken because if a user has the “*Unlock Database*” enabled in their user permissions, they can unlock the database and make changes. This can result in multiple users being able to edit the database at the same time. A result of this can be that if the original user leaves the database edit screen, he/she will be locked out until the database is unlocked.

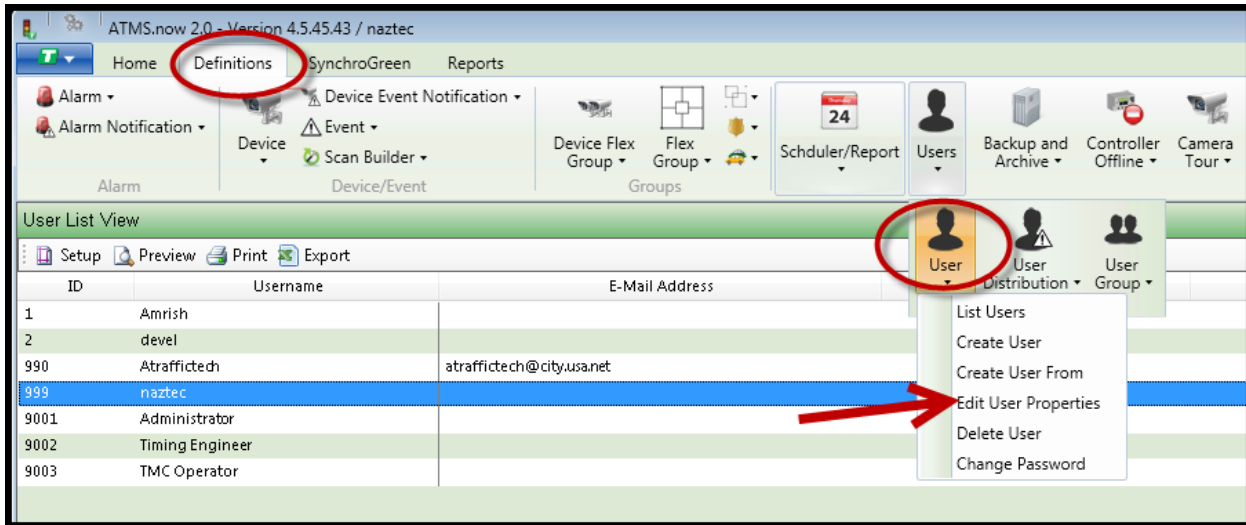
The following screen shots show the various lock database features. The screen-shot below shows that the database is not locked at that moment.



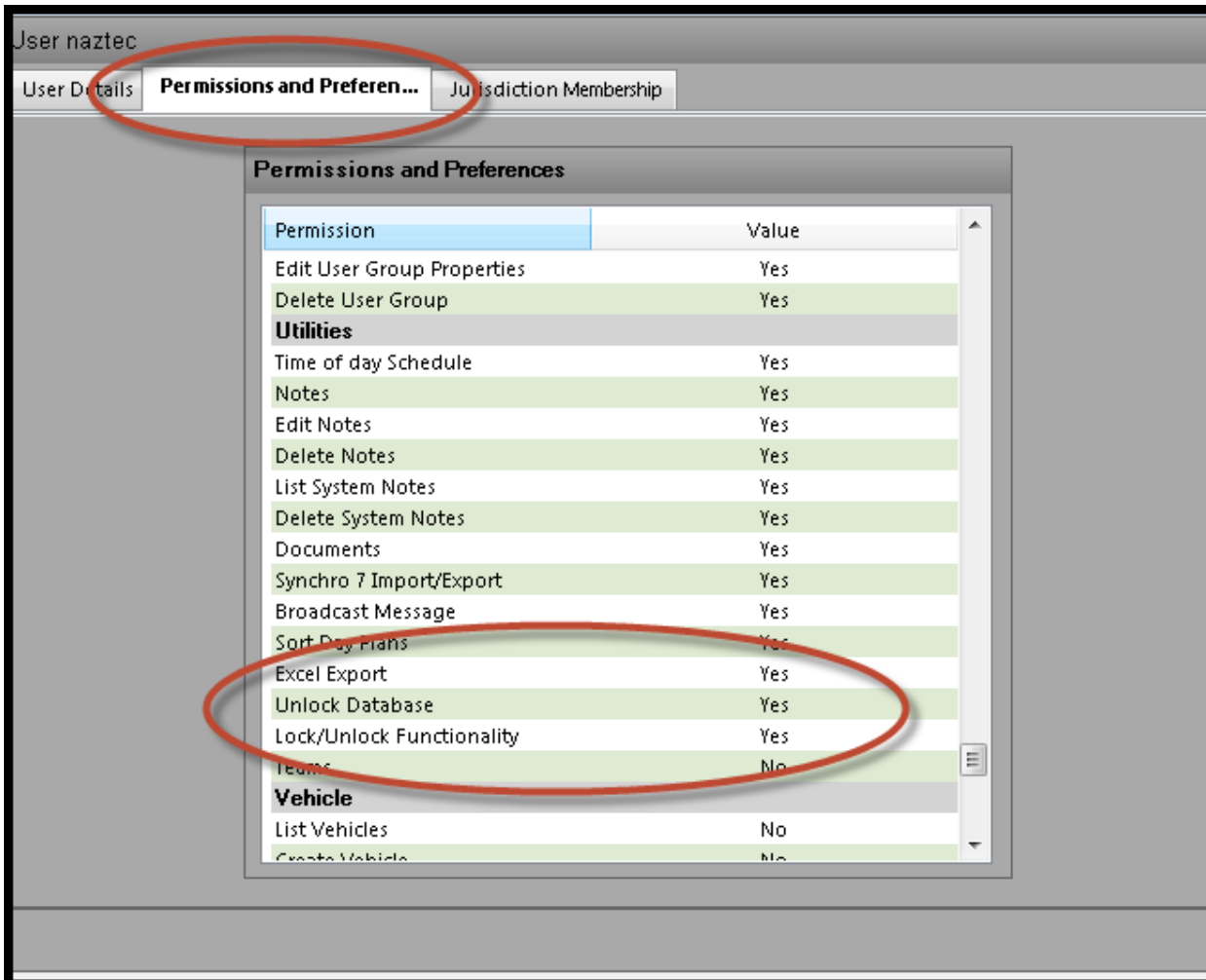
The screen-shot below shows that the database is locked and which user is editing it.



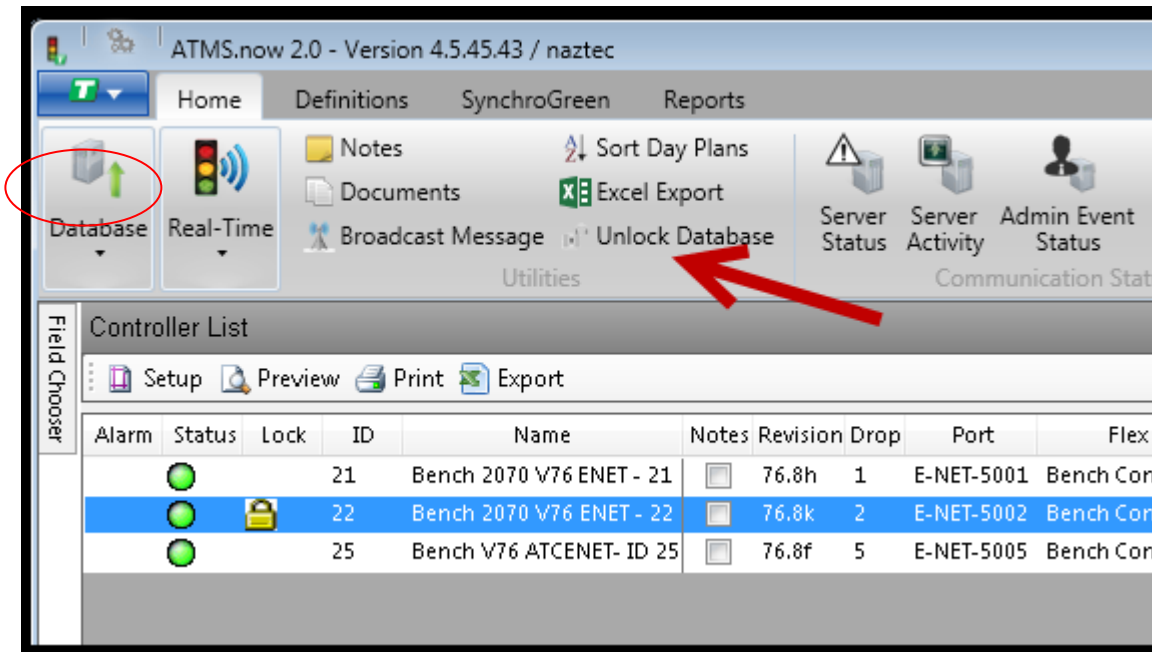
To grant permission to unlock databases, the following screens have to be edited using the Definitions-Edit User icon.



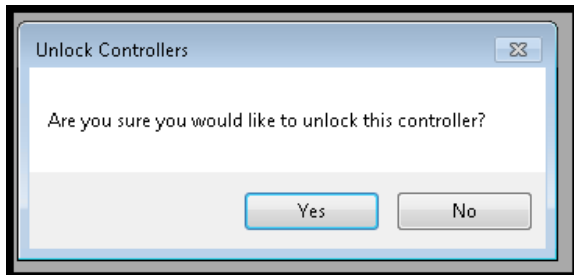
Select the Permissions and Preferences tab to grant Unlock permissions.



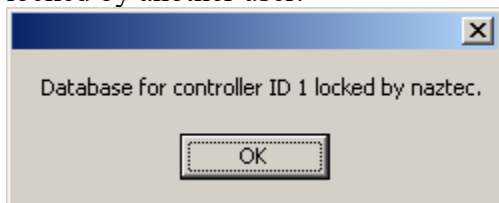
Once you have the permission to unlock a database, the following screen-shots show how to unlock it.



This is the warning screen that appears when a user clicks on the unlock database option.



This is the warning screen that appears when a user clicks on the database\edit menu when a database is locked by another user.



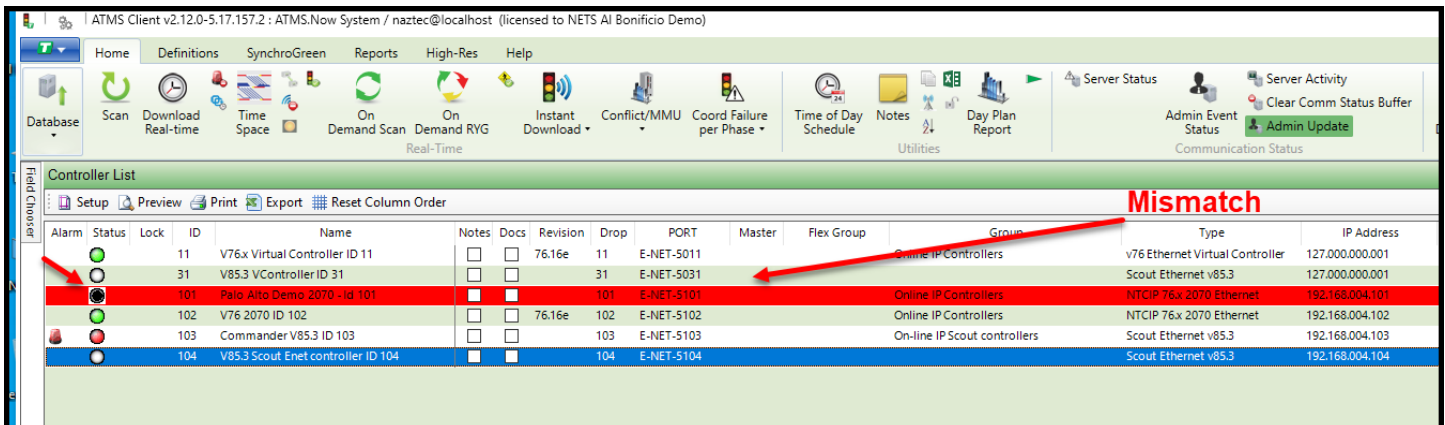
## 4.12 Controller Validation Testing

As of ATMS 2.12 a feature was added to validate that the ATMS controller type matches the actual software in the field controller. Validation checks between ATMS and the field controller include:

- Software version and revision matching
- Database file size matching
- Scan Buffer data matching

If a mismatch occurs, then ATMS will disable all actions in the list view, map view and scan screens. In addition, ATMS will disable any upload/download as well as display a database version mismatch error.

Below is the display of a mismatch on the List View.



The screenshot displays the ATMS Client software interface. The main window shows a 'Controller List' table with the following columns: Alarm, Status, Lock, ID, Name, Notes, Docs, Revision, Drop, PORT, Master, Flex Group, Group, Type, and IP Address. The table contains five rows of controller data. The row for ID 101, 'Palo Alto Demo 2070 - Id 101', is highlighted in red, indicating a mismatch. A red arrow points from the word 'Mismatch' in the top right corner of the table area to the red row. The interface also shows a menu bar at the top with options like Home, Definitions, SynchroGreen, Reports, High-Res, and Help, and a toolbar with various icons for database operations and server management.

Alarm	Status	Lock	ID	Name	Notes	Docs	Revision	Drop	PORT	Master	Flex Group	Group	Type	IP Address
			11	V76x Virtual Controller ID 11	<input type="checkbox"/>	<input type="checkbox"/>	76.16e	11	E-NET-5011			Online IP Controllers	v76 Ethernet Virtual Controller	127.000.000.001
			31	V85.3 VControllerID 31	<input type="checkbox"/>	<input type="checkbox"/>		31	E-NET-5031			Online IP Controllers	Scout Ethernet v85.3	127.000.000.001
			101	Palo Alto Demo 2070 - Id 101	<input type="checkbox"/>	<input type="checkbox"/>		101	E-NET-5101			Online IP Controllers	NTCIP 76x 2070 Ethernet	192.168.004.101
			102	V76 2070 ID 102	<input type="checkbox"/>	<input type="checkbox"/>	76.16e	102	E-NET-5102			Online IP Controllers	NTCIP 76x 2070 Ethernet	192.168.004.102
			103	Commander V85.3 ID 103	<input type="checkbox"/>	<input type="checkbox"/>		103	E-NET-5103			On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.103
			104	V85.3 Scout Enet controller ID 104	<input type="checkbox"/>	<input type="checkbox"/>		104	E-NET-5104			Online IP Scout controllers	Scout Ethernet v85.3	192.168.004.104

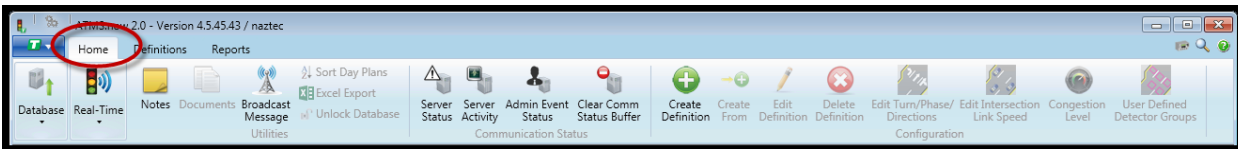
# 5 Navigator Tool Bar – Home Module

This chapter covers the features provided on the *Navigator* Tool bar’s selection of the *Home* module in **ATMS**.

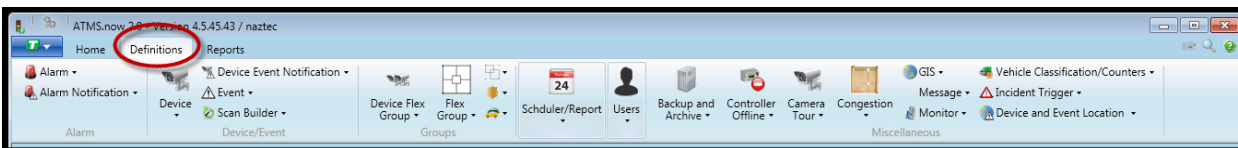
The Navigator Tool bar allows the user to select various Modules (*HOME, Definitions, Reports, Etc.*) in **ATMS**. These “modules” act as tabular pages to each section of the system. Access to each module or sections within a module can be fully controlled by setting access within *User Definitions*.

ATMS comes with 4 standard modules: *HOME, Definitions, Reports* and *Help*.

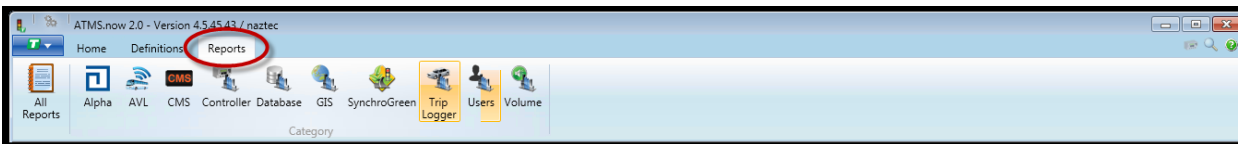
Below is the Home Module selection.



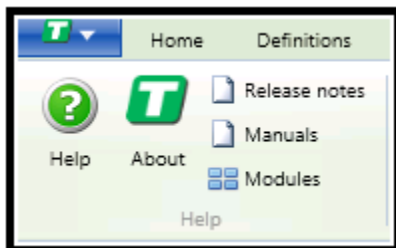
Below is the Definitions Module selection.



Below is the Report Module selection.



Below is the Help Module selection.



The *Actions* section of the *Home* module enables the user to perform functions on selected controllers. The *Actions* are classified in five categories:

- Database
- Real-Time
- Utilities
- Configuration
- Communication Status

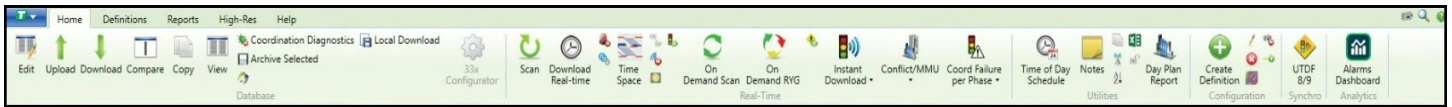
The *Actions* section enables the user to perform eligible tasks against the selected controller(s). All *Actions* can be performed by selecting the icons and the features in each action's drop-down menu or by "right-clicking" within the main *Overview* pane.



The *Search Engine* icon (shown on the left) enables the user to perform controller lookups (shown on the right) to the *List* or *Map* by any classification type. Examples of the lookup types are by Controller Name, ID#, Flex Group, Master, Controller Type, Communication Drop, etc.

A screenshot of a 'Home Search...' dialog box. It features several search criteria, each with a dropdown menu set to '<All>': ID, Name, Flex Group (with a list box below it showing 'Bench Controllers' and 'SH 6'), Group, Master ID, Type, Drop, IP Address, X-Reference, Comm Status, Pattern, Status, Coord Src, Cycle, and Alarm Status. At the bottom, there are buttons for 'Reset All...', 'Find Now...', and an 'Auto Refresh' checkbox with a '30 secs' dropdown.

## 5.1 Actions



The figure above shows the four categories of *Actions* available in the *Home* module. These actions pertain to activities that involve controllers, not other system devices. Performing actions of other system devices such as cameras, CMS signs, etc., are performed directly from the map.

Access to each *Action* is determined and controlled by the **ATMS** system administrator when setting each *User Definition* value as discussed in Chapter 6. If a function appears then the feature is enabled and available for use. If the system administrator has disabled a function for a specific user, then the function will not appear as a choice. The full *Action* list will also appear in the main *Overview* pane by “right-clicking” and navigating to the desired task.

“Grayed-Out” functions indicate that a specific *Action* is not permissible given the controller(s) selection. An example of this would be an attempt to simultaneously edit two different controller types. **ATMS** cannot perform this due to the variances in each database type.

Users have the ability to “invent” their own workflow by selecting a set of controllers, then moving from *Action* to *Action*. Each *Action* can be performed by highlighting a controller or multiple controllers from the *List* or *Map* tabs of the *Overview* pane.

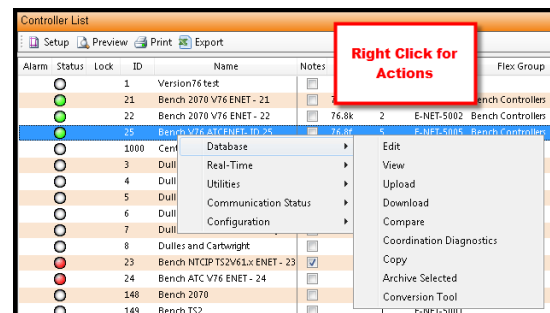
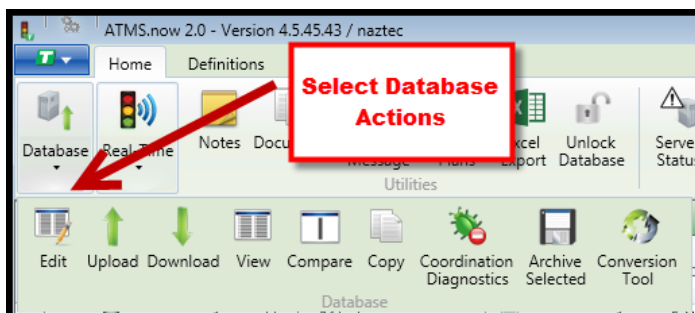
The figure to the right shows the categories of *Actions* that can be performed for a user with complete access and control privileges.

This section helps new users with basic controller operations such as:

- Editing controller databases
- Performing controller uploads, downloads and sending manual commands
- Performing coordination diagnostics and import/export to Synchro
- Performing single and multiple intersection status “Scan” screens
- Copying and comparing databases

Controllers may be selected for *Actions* from the *Controller List View* or *Controller Map View*. Controller selection can be made easier and quicker by using the *Search Engine*.

After selecting the target controller(s) in the *List* or *Map* tab, choose *Database* in the *Home...Actions* module, or by “right-clicking” the mouse. With full privileges enabled, the user has the ability to *Edit*, *Upload*, *Download*, *Compare*, *Copy* or do various other actions to the selected database(s).

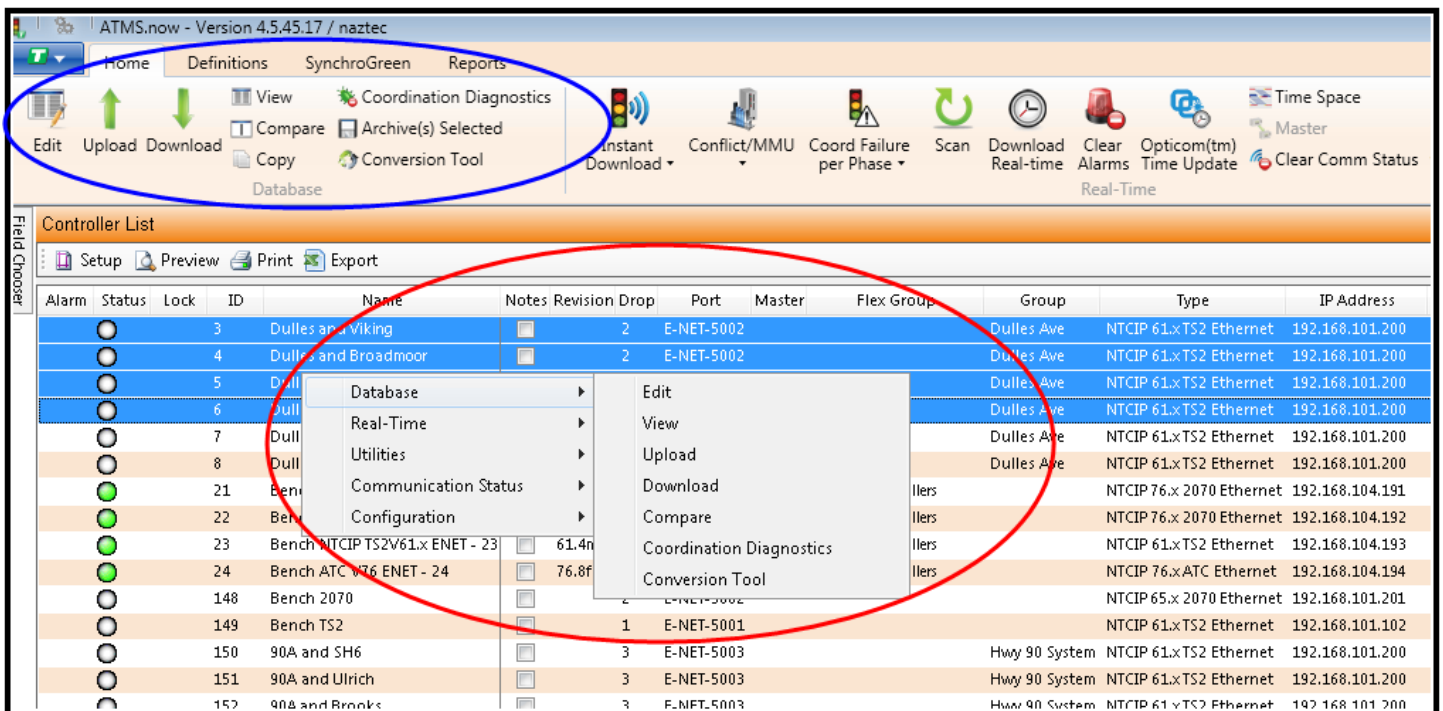


The *Upload* and *Download* selections allow the user to exchange data between **ATMS** and the field. **ATMS** provides a database file system that protects database changes made in the field.

### 5.1.1 LIST-Based Selection

Controller(s) can be selected for database editing either from the *Map* view or from the *List* view. To select a controller(s) for editing from the *List* view, any of three mouse actions can be taken:

- Highlight a single controller by clicking on it.
- Highlight multiple adjacent controllers on the list by selecting the top of the desired group and dragging the mouse until all of the desired controllers are highlighted for *Actions*.
- Highlight multiple random controllers on the list by clicking on each controller while pressing the “Ctrl” key on your keyboard.



The illustration above illustrates the selection process of four controllers by highlighting each with “Ctrl” key depressed. After selecting the targeted intersections, the user can “right-click”, which will produce a “pop-up” action table (shown in the **RED circle**), or navigate to the *Database Actions* on the selection ribbon show on the upper left of the screen (shown in the **BLUE circle**). The available actions will match using either method.




After selecting the List-based method, the GIS map will “push-pin” the corresponding controller locations on the GIS map, indicating that they are selected from the GIS map view as well.

To clear the highlighted controller(s) from the *List* view, navigate to the *Search Engine*, select “Reset All”, then “Find Now”. This refreshes the *List* and *Map* lookups.

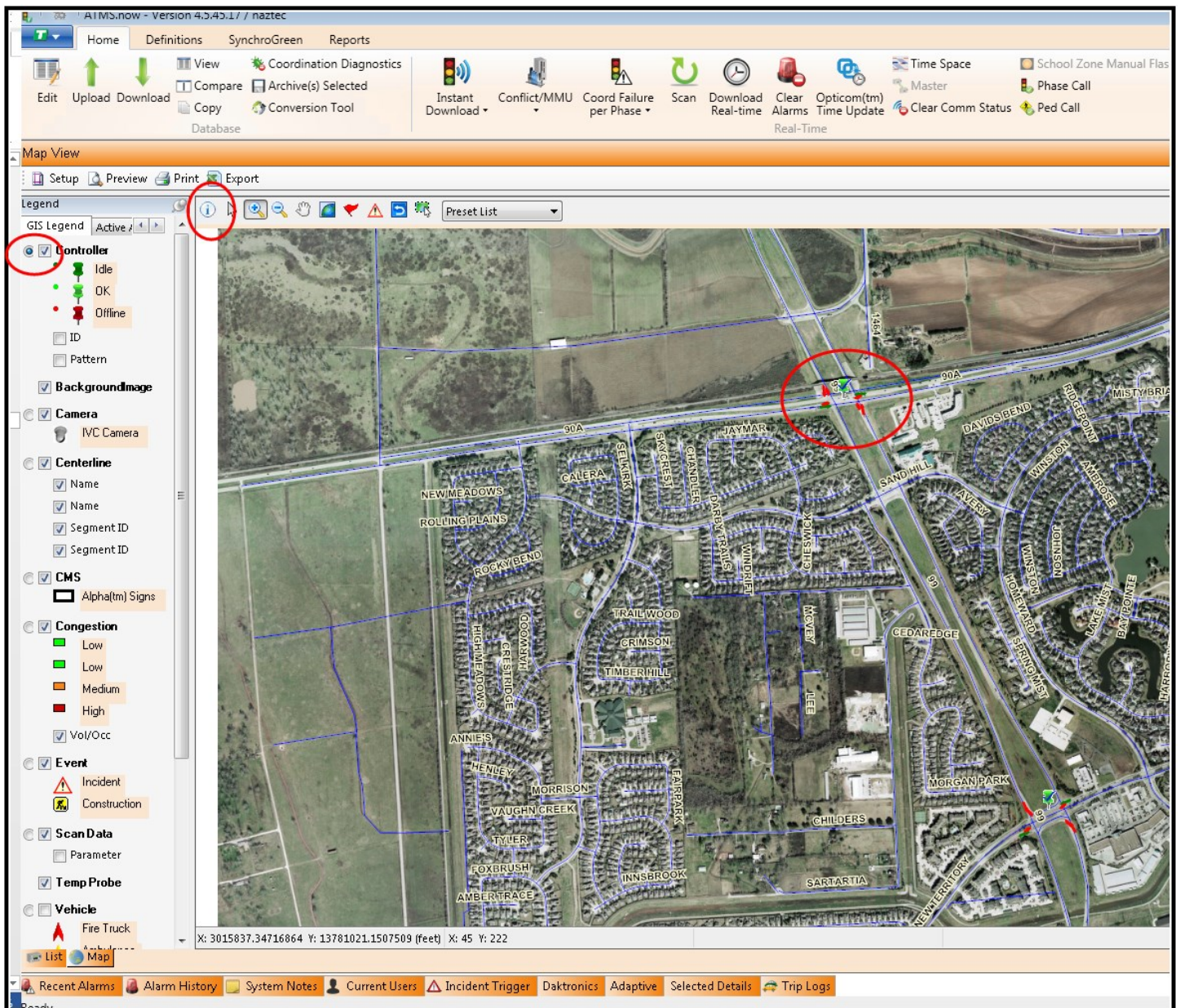
The List and Map tabs use the database, real-time status, and selection process in conjunction with each other. Selecting from either will display a matching action on the other tab, allowing the user to seamlessly navigate from either view without losing their work.



## 5.1.2 GIS Map-Based Selection

For controller(s) selection from the *Map* tab, select the round “radial” button for the Controller layer on the GIS Legend, then select the “Select Object” arrow  on the GIS toolbar (both are circled in the Figure below). Position your mouse to the upper-left most position above the controller(s) you wish to select, “left-click” your mouse and hold the button as you “drag” your mouse around the desired controllers for selection. This action creates a “wrapping box” around the controller objects. **ATMS** will then place a real-time, color-coded “push pin”  at all of the selected controller locations. The real-time status will correspond with the previous color-coded “dot”  before the selection. Both of these icon types are displayed in the GIS Legend in the Controller Layer.

The selected controller(s) will be indicated by the status-colored “Push-Pins” on the *GIS* view, and will have corresponding, highlighted intersections on the *List* view. The *GIS* view and the *List* view work from the same database, and actions on one tab control the selection and behavior of the other.



After selecting the target controller(s) through the *List* or *Map*, choose *Database...Edit* in the *Home...Actions* module, or “right-click” from the *List* or *Map* view windows. “Right-Clicking” opens the full *Action* section on the main *Overview* pane, instead of having to move your mouse to the fixed *Action* window every time you need to perform a function.

To clear the highlighted controller(s) from the *List* view, navigate to the *Search Engine*, select “*Reset All*”, then “*Find Now*”. This refreshes the *List* and *Map* lookups.

Map View

Setup Preview Print Export

Legend

GIS Legend Active

Controller

- Idle
- OK
- Offline

ID

Pattern

BackgroundImage

Camera

- IVC Camera

Centerline

- Name
- Name
- Segment ID
- Segment ID

CMS

- Alpha(m) Signs

Congestion

- Low
- Low
- Medium
- High
- Vol/Occ

Event

- Incident
- Construction

Scan Data

- Parameter

Temp Probe

Vehicle

- Fire Truck

List Map

X: 3022034.39304278 Y: 13781223.3382182 (feet) X: 405 Y: 186

Recent Alarms Alarm History System Notes Current Users Incident Trigger Daktronics Adaptive Selected Details Trip Logs

Ready

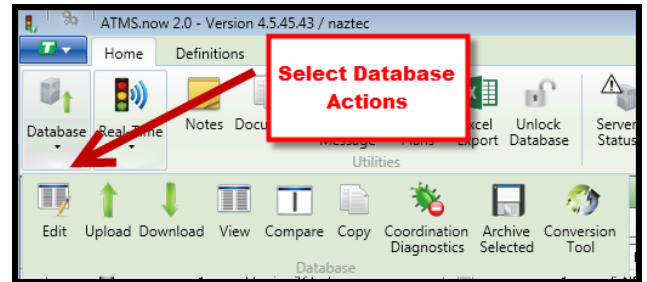
## 5.2 Database

The user should refer to the Controller Operations Manual for specific details, definitions, and operation of the controller database.

### 5.2.1 Database Edit

The *Controller Database Editor* offers many options, as highlighted below:

- Multi-Edit Design – Access many controllers at once. Mass viewing and editing by controller or data type. **Please note that when editing multiple controllers, the user must select controllers of the same type.**
- The various tables from the selected portion of the database are selectable.
- Database Filter – Select the area of the database to work on.
- Based on the database Filter, the available folders will be displayed.
- Select which version of the database to work on.
- Direct database control from the *List* or *Map*.



To edit controller databases, select the desired controller(s), then select the *Database* icon. A drop-down menu will be displayed. Select the *Edit* icon to edit the database. The main *Overview* pane will then display the *Controller Database Editor*. **ATMS** will open the database screen that you last used to minimize the search time for desired screens.

The *Controller Database Editor* offers viewing and editing for each of the **ATMS** databases. In order to protect the integrity of the databases, the STANDARD database will always open first, as it is your main editing database.

### Database Selection

Database selection is made by choosing the desired database in the *Database Configuration* box at the bottom of the *Controller Database Editor* window. Selection is made by checking the desired database type. Only one can be selected at a time.

Controller Database Editor - Phase Times and Options

Preview Print Export

Phase	Walk	Ped Clearance	Min Green	Passage	Max1	Max2	Yellow	Red	Red Revert A
Phase 1	0	0	5	1	25	50	3.5	1.5	0
Phase 2	5	10	5	1	25	50	3.5	1.5	0
Phase 3	0	0	5	1	25	50	3.5	1.5	0
Phase 4	5	10	5	1	25	50	3.5	1.5	0
Phase 5	0	0	5	1	25	50	3.5	1.5	0
Phase 6	5	10	5	1	25	50	3.5	1.5	0
Phase 7	0	0	5	1	25	50	3.5	1.5	0
Phase 8	5	10	5	1	25	50	3.5	1.5	0

Table 1

Adv Warning / Auto Flash / Auto Flash Parms / Channel Parms / Channels Assignments / Overlap Programming / Call Inhibit Redirect Alt / Phase Options Alt / Phase Times and Op

Database Configuration: Standard (dropdown) Filter: Controller (dropdown)

By Controller | By Entry

Recent Alarms

Setup Preview Print Clear

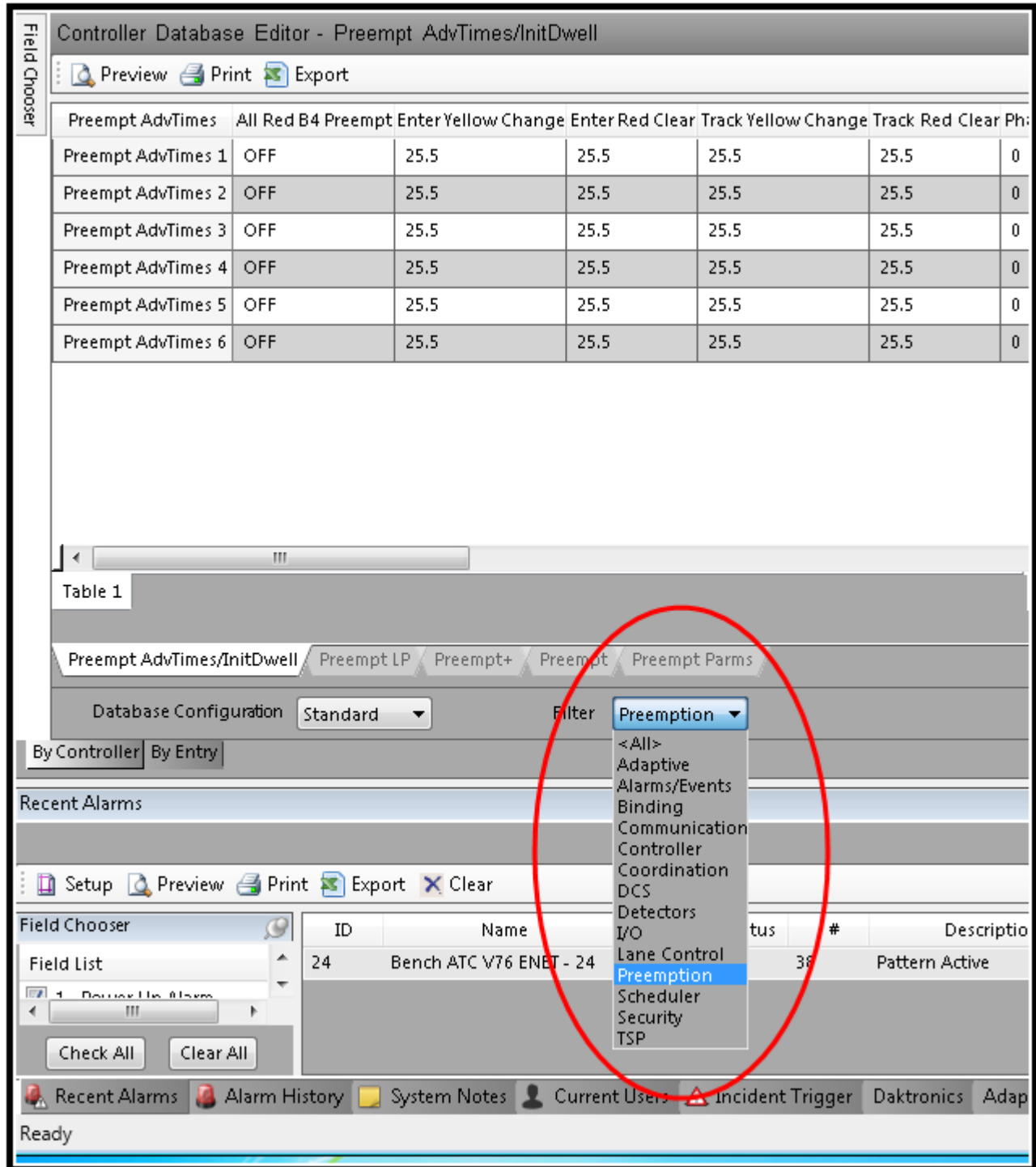
Recent Alarms Alarm History System Notes Current Users Incident

Ready

**ATMS** provides a database *Filter* for easy navigation to the specific database category of the selected database. The *Filter* categorizes the database according to the database categories provided in the controller. When a category is selected, the affiliated sub-categories will display in tabs within the window.

If “All” is selected, every database tab will be displayed.

The database tabs display and operate similar to Microsoft Excel.



For controllers that are configured as type NTCIP 76.x 2070 Ethernet/Scout there is a way to change the category names. You can select **Full Name**, **Name** or **Controller Menu** as the category display as shown below:

Controller Database Editor - Phase Times and Options(1.1.1/1.1.2)

Preview Print Export

Phase	Min Green	Gap Ext	Max1	Max2	Yellow Clr	Red Clr	Walk	Ped Clearance	Red Revert	Added Initial	Max Initial	Time Before Reduce	Cars Before Reduce
Phase 01 (WL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0
Phase 02 (ET)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0
Phase 03 (SL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0
Phase 04 (NT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0
Phase 05 (EL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0
Phase 06 (WT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0
Phase 07 (NL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0
Phase 08 (ST)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0
Phase 09	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0
Phase 10	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0
Phase 11	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0
Phase 12	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0
Phase 13	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0

Table 1

Adv Warning(1.1.9) Auto Flash(1.4.2) Auto Flash Parm(1.4.1) Channel Parm(1.8) Channels Assignments(1.8.1/1.8.2) Channels Assignments Plus(1.8.4/1.8.5) ITS Cab Device Overlap Alternate(1.5.2) OverlapB+(1.5.2X.3) Overlap Parm(1.5.1) Overlap+(1.5.2X.2) Overlap Plus Parm(1.5.1) Overlap Programming(1. Phase Times+(1.1.7) Phase Times+ and Options+(1.1.3) Phase Times Alt(1.1.6.1) SDLC Devices(1.3.7) Purdue Ring Input Map(1.2.5) Ring Sequences(1.2.4)

Database Configuration Standard Filter Controller Category Display Full Name

Full Name Name Controller Menu

Below are the Tabs for the **Detector** filter:

**Name** will display the default ATMS names for each tab

Ped Dets Alt Ped Dets Speed Parameters Vehicle Dets Alt Vehicle Dets Vehicle Dets+

Database Configuration Standard Filter Detectors Category Display Name

**Controller Menu** will display the menu keystrokes to program the data at the controller

5.5.X.1 5.4 5.8.2 5.5.X.3 5.1 5.3

Database Configuration Standard Filter Detectors Category Display Controller Menu

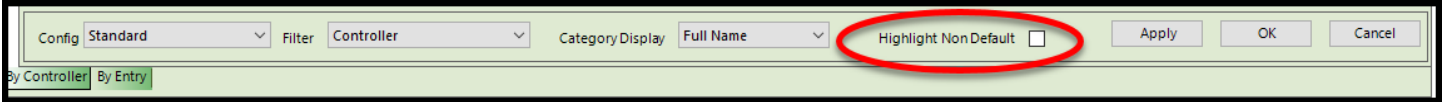
**Full Name** will show both the ATMS name and the keystrokes.

Ped Dets Alt(5.5.X.1) Ped Dets(5.4) Speed Parameters(5.8.2) Vehicle Dets Alt(5.5.X.3) Vehicle Dets(5.1) Vehicle Dets+(5.3)

Database Configuration Standard Filter Detectors Category Display Full Name

## Highlighting Non-Default Data

As of ATMS 2.14 a feature was added to assist the user in ascertaining which data fields have been programmed in the controller and which data fields have not been programmed or modified. The Highlight Non-Default checkbox will allow the user to view agency programmed data when editing data. Data that has been programmed will be highlighted in yellow. In addition, all filtered menu tabs will be highlighted in yellow.



Below is a scout screen that shows Phase Times and Options with all data. It is followed by the same screen which shows highlighted data.

The screenshot shows the 'Controller Database Editor - Phase Times and Options' window. The title bar indicates the version is 1.1.1/1.1.2/1.1.4. The window contains a table with the following columns: Phase, MIN GRN, Gap Ext, MAX 1, Max 2, Yel Clr, Red Clr, Walk, Ped Clr, Red Rev, Add Init, Max Init, Gap Reduce Time B4, Gap Reduce Cars B4, Reduce, Gap Reduce Time To, and Gap Reduce Reduc. The table lists phases from Phase 01 (NL) to Phase 16. The data for each phase is as follows:

Phase	MIN GRN	Gap Ext	MAX 1	Max 2	Yel Clr	Red Clr	Walk	Ped Clr	Red Rev	Add Init	Max Init	Gap Reduce Time B4	Gap Reduce Cars B4	Reduce	Gap Reduce Time To	Gap Reduce Reduc
Phase 01 (NL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 02 (ST)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 03 (EL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 04 (WT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 05 (SL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 06 (NT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 07 (WL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 08 (ET)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 09	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 10	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 11	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 12	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 13	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 14	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 15	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 16	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0

Below the table is a 'Table 1' label and a list of menu items. The 'Highlight Non Default' checkbox is circled in red. At the bottom, there are buttons for 'Apply', 'OK', and 'Cancel', and tabs for 'By Controller' (selected) and 'By Entry'.



Controller Database Editor - Phase Times and Options(1.1.1/1.1.2/1.1.4)

Timing Sheet Preview Print Export

Phase	MIN GRN	Gap Ext	MAX 1	Max 2	Yel Clr	Red Clr	Walk	Ped Clr	Red Revt	Add Init	Max Init	Gap Reduce	Time B4	Gap Reduce	Cars B4	Reduce	Gap Reduce	Time To	Gap Reduce	Reduc
Phase 01 (NL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 02 (ST)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 03 (EL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 04 (WT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 05 (SL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 06 (NT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 07 (WL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 08 (ET)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 09	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 10	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 11	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 12	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 13	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 14	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 15	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 16	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1

Highlighted Data and Tabs

Adv Warning(1.1.9) Auto Flash Parm(1.4.1) Auto Flash Phase/Overlap(1.4.2) Call Inhibit Redirect Alt(1.1.6.3) Channel Parm(1.2.1/1.8.3) Channels Assignments Plus(1.8.4/1.8.5)  
 Channels Assignments(1.8.1/2) CMU Permissives(1.3.9) Detector Parm(5.8.1/1.3.4) General Parm(1.5.1) Header Data ITS Cab Device SIU Critical (1.3.7)  
 ITS Cab Device SIU\_Critical (1.3.7) ITS Cab Device(1.3.7/1.3.4) Logging Purdue(1.9.5) MMU Permissives(1.3.3) MMU to Controller Mapping(1.3.5) Overlap Conf Prog+(1.5.2.X.2)  
 Overlap Parm Flash(1.5.1) Overlap Program Parm+(1.5.2.X.3) Overlap Programming(1.5.2.X.1) Ped Parm(1.2.1.Ped) Phase Options Alt(1.1.6.2) Phase Times Alt(1.1.6.1)

Config Standard Filter Controller Category Display Full Name Highlight Non Default  Apply OK Cancel

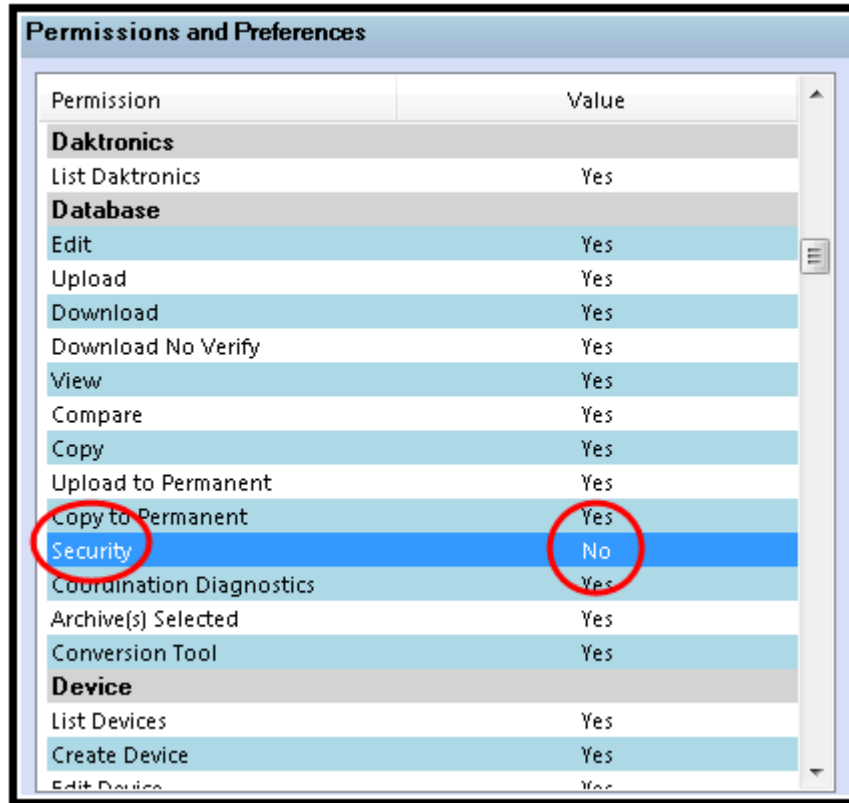
By Controller By Entry

This feature is only available when viewing data “By controller” and not “By Entry”.

Note: Highlighting uses as a reference the default controller’s **Full-Clr** initialized database.

## Database Security

Our controllers provide a security code option for access control. In order to view and edit the security codes in **ATMS**, the *Security* function must be enabled for the appropriate user(s) under *User...Permissions and Privileges* in the *Definitions* module as shown below. When this is enabled with a value of “Yes”, a specific “Security” option will be available in the *Database Filter*, and a *Security* tab will display all of the Controller Security Codes when it is selected.



Permission	Value
<b>Daktronics</b>	
List Daktronics	Yes
<b>Database</b>	
Edit	Yes
Upload	Yes
Download	Yes
Download No Verify	Yes
View	Yes
Compare	Yes
Copy	Yes
Upload to Permanent	Yes
Copy to Permanent	Yes
Security	No
Coordination Diagnostics	Yes
Archive(s) Selected	Yes
Conversion Tool	Yes
<b>Device</b>	
List Devices	Yes
Create Device	Yes
Edit Device	Yes

It is strongly recommended that if your agency uses Security Codes for controller access, that only the System Administrator(s) have access to Edit and View the Security Codes.

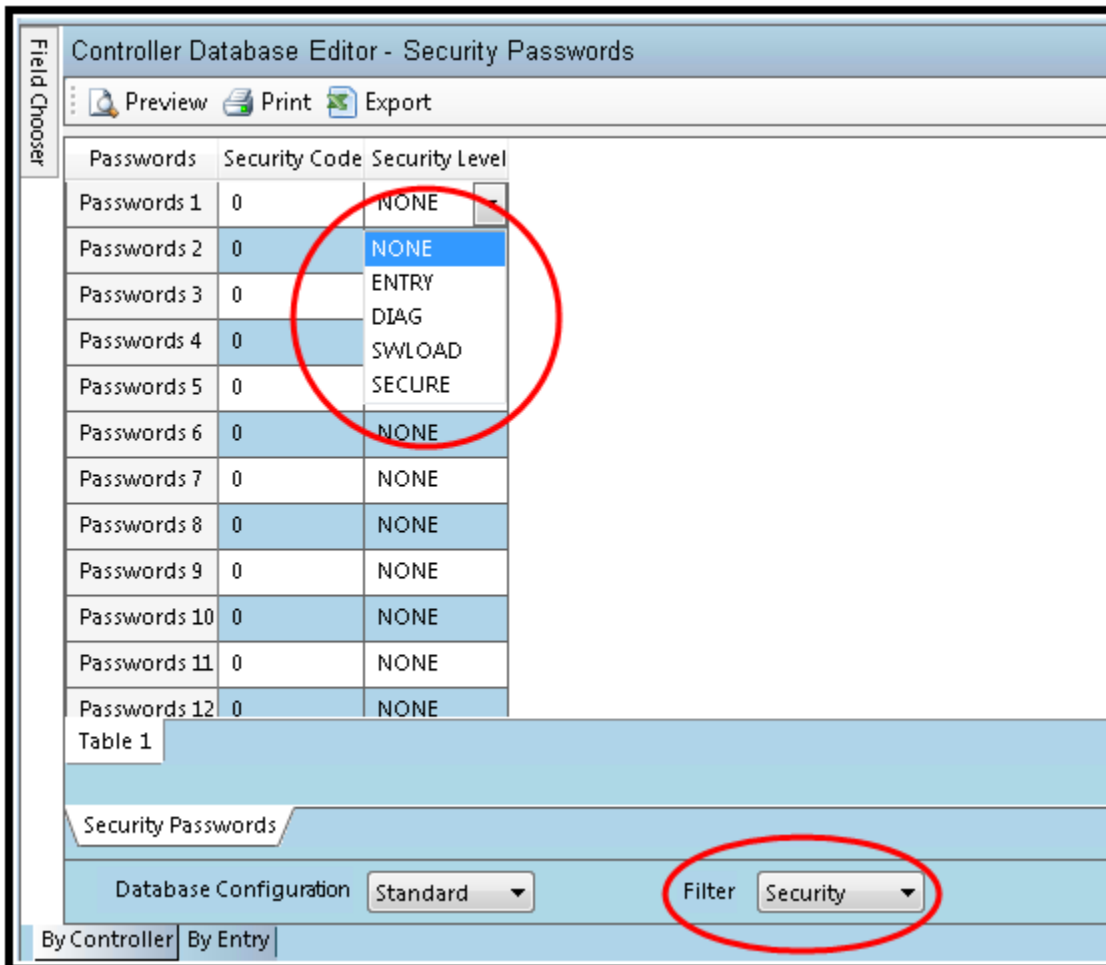
If any *Access Codes* are programmed under MM->8>2 of the controller, the user will be required to provide a valid user number and access code to enable the keyboard. Programming all access codes under MM->8>2 to zero and setting the Level to NONE, disables all login procedures in the controller.

A maximum of 64 individual users and 4-digit access codes may be programmed by a SECURE user. Therefore, if access security is used, at least one access number should have *SECURE Level* access.

The security Level (from highest to lowest) is assigned as follows:

- **SECURE** User has full access to the database including the ability to assign passwords
- **SWLOAD** User has full access to the database and the ability to run diagnostics and load the controller software. The user may not assign passwords.
- **DIAG** User has edit access to the database plus the ability to run diagnostic utilities. The user cannot load controller software (re-flash the controller) or assign security passwords
- **ENTRY** User has edit access to the database but cannot run diagnostics, load software or assign passwords
- **NONE** View only access to the database

The screen shown below displays the *Security Passwords* tab in the *Security* filter selection. The current example displays *Security Level* options and that there are no *Security Numbers* (Passwords) assigned to this controller. This option will only appear for the user if the *Security* setting is “Yes” under the *User Privileges* in the *Definitions* module, and will appear for *Database...Edit* and *Database...Edit* options as allowed for the same user.



## Database Field Chooser

The *Controller Database Editor* provides a *Field Chooser* to customize the displayed data fields. Each user can check or uncheck each data box in the *Field Chooser* to display or hide the data column.

**ATMS** will remember the selection preferences by user.

The *Field Chooser* can be “Pinned-Up” in the *Controller Database Editor* screen.

The *Field Chooser* will automatically change and represent the active screen as the user navigates.

The *Field Chooser* offers “Check All” and “Clear All” boxes for each data screen to save time.

Controller Database Editor - Phase Times and Options(1.1.1/1.1.2/1.1.4)

Timing Sheet Preview Print Export

Field Chooser

Field List

- Max 1
- Max 2
- DyMaxLim
- Walk
- Ped Clr
- Min Grn
- Gap Ext
- Yel Clr
- Red Clr
- Red Revt
- Add Init
- Max Init
- Gap Reduce Time B4
- Gap Reduce Cars B4 Redu
- Gap Reduce Time To
- Gap Reduce ReduceBy
- Gap Reduce Min Gap
- Max Step
- Startup
- Enable P
- Auto Flash Entry
- Auto Flash Exit

Phase	Min Grn	Gap Ext	Max 1	Max 2	Yel Clr	Red Clr	Walk	Ped Clr	Red Revt	Add Init	Max Init	Gap Reduce Time	B4 Gap Reduce	Cars B4 Reduce	Gap Redt
Phase 01	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0
Phase 02	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0
Phase 03	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0
Phase 04	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0
Phase 05	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0
Phase 06	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0
Phase 07	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0
Phase 08	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0
Phase 09	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0
Phase 10	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0
Phase 11	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0
Phase 12	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0

Table 1

Adv Warning(1.1.9) / Auto Flash Parms(1.4.1) / Auto Flash Phase/Overlap(1.4.2) / Call Inhibit Redirect Alt(1.1.6.3) / Channel Parms(1.2.1/1.8.3) / Channels Assig

General Overlap Parameters(1.5.1) / ITS Cab Device SILU Critical(1.3.7\_) / ITS Cab Device(1.3.7/1.3.4) / Logging Purdue(1.9.1) / MMU Permissives(1.3.3) / MMU Pr

Overlap Programming(1.5.2.X,1) / Ped Parms(1.2.1.Ped) / Phase Options Alt(1.1.6.2) / Phase Times Alt(1.1.6.1) / Phase Times and Options(1.1.1/1.1.2/1.1.4) / Pr

**The timing database can be presented in two ways:**

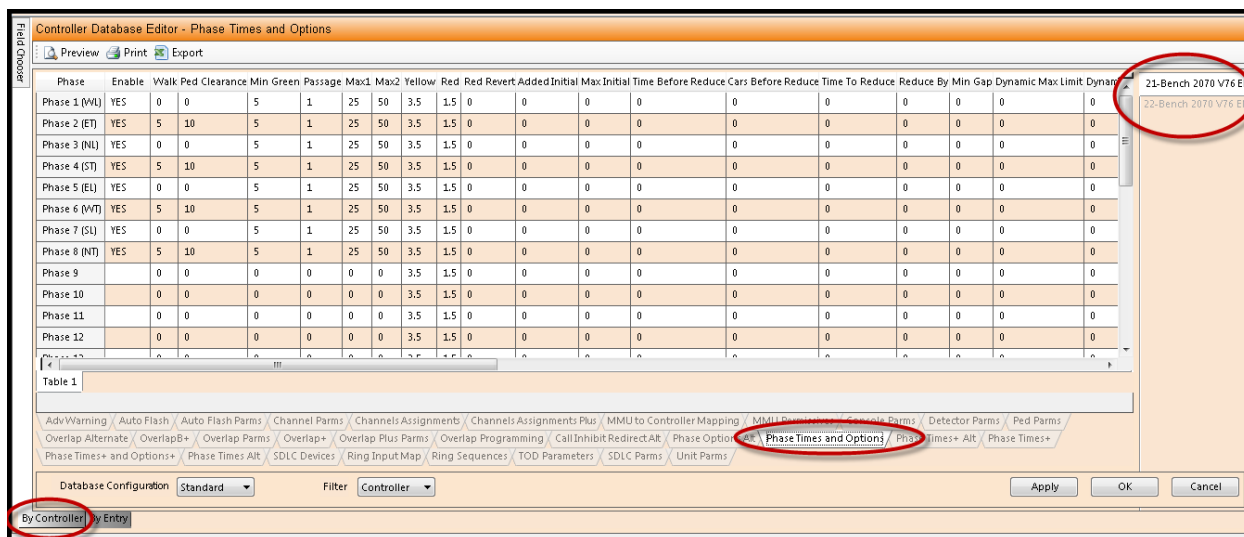
## Edit by Controller

By selecting the *By Controller* tab in the bottom left of the screen, the data in the screen is displayed for the selected controller. The controller selection is tabbed on the upper right of the screen. **Note: If the controller name is truncated, hover your mouse over it and the full name will be displayed.**

The figure below shows the selection tab locations for both of these.

Note that the data screen shows all of the Phase Entry data for Controller #21.

Make your database changes, and select the “Apply” or “OK” button to save, “Cancel” to leave the screen without saving the changes. As with standard Microsoft applications, “Apply” saves and keeps the screen open; “OK” saves and closes the screen.



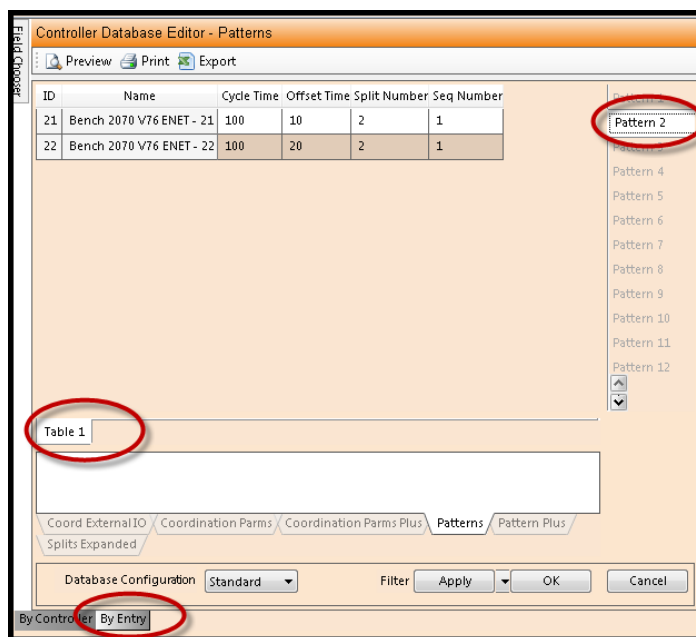
## Edit by Entry

By selecting the *By Entry* tab in the bottom left of the screen, the data in the screen is displayed for the selected data type on the corresponding data tab. The data selection is tabbed in the upper right of the screen and the controller (s) are now shown in the main data screen.

The figure to the right shows the selection tab locations for both of these.

In particular, this data screen shows the data for multiple controllers, categorized by entry (Pattern data) instead of by controller.

Make your database changes clicking on the cell for editing. Some cells only allow for a drop-down selection process, such as Coord Modes in the Split Table. In this case you will be restricted to the available list. If you attempt to make an invalid entry or no entry at all, **ATMS** will replace it with the previously entered value, highlight the cell **RED** and force you to save the screen or cancel the entire data editing session to exit.

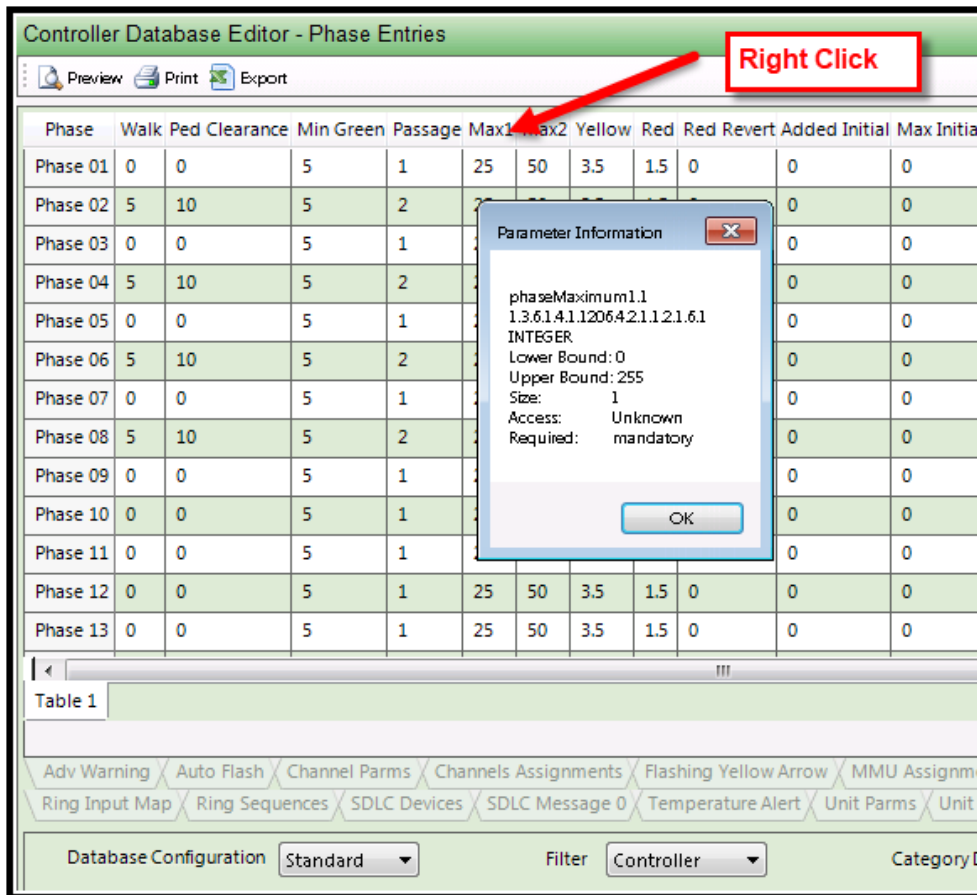


To save your work, select the “Apply” or “OK” button. Select “Cancel” to leave the screen without saving the changes. As with standard Microsoft applications, “Apply” saves your work and keeps the screen open; “OK” saves and closes the screen.

## Data Parameter Information

**ATMS** offers specific database parameter information within the *Controller Database Editor*. This information includes the NTCIP database object & number, and the allowed minimum (Lower) and maximum (Upper) value entries allowed for that specific data type.

To access this information, place the mouse on the database parameter name and “right-click”. The *Parameter Information* window will appear. Click “OK” to close the window.



If the Parameter Information indicates that the data object is “mandatory” in the “**Required**” field, the upper and lower values are defined by NTCIP. If a value is desired that is not allowed by this definition, it is possible that additional tables are available as a “Plus” feature in the database. Many of the “Plus” tables allow a wider range of entries.

## Pattern and Split Labels for V76.x and Scout controllers

Editable text fields have been added to both the Coordination filter's Pattern Plus and Split Plus tabs. The user can describe via text descriptions of each Pattern and Split. Please do not use any special characters in the Labels.

Pattern Name is found under the Pattern Plus tab.

Pattern	Short P 2	No Short P 3	No Short P 4	Early Yield	Offset	CNA	Max 2	Float	Min Veh	Perm	Min Ped	Perm Percentage	MI	Ret Hold	ASC	Ph Opt	Table	Ph Time	Table	Det Grp	Call Inh	Olp Off 1	Olp Off 2	Olp Off 3	Olp Off 4	Olp Off 5	Olp Off 6	Olp Off 7	Olp Off 8	Dia Mode	Force Mode	Pattern Name		
Pattern 1	0	0	0	0	EndGRN								OFF	OFF	YES	0	0	0	0	0	0											DFT	DFT	Test Cycle
Pattern 2	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	AM Light
Pattern 3	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	AM Norm
Pattern 4	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	AM Peak
Pattern 5	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	MidLight
Pattern 6	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	Mid Norm
Pattern 7	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	Mid Peak
Pattern 8	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	PM Light
Pattern 9	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	PM Norm
Pattern 10	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	PM Peak
Pattern 11	0	0	0	0	BegGRN								OFF	OFF		0	0	0	0	0	0											DFT	DFT	11

Split name is found under the Split Plus tab.

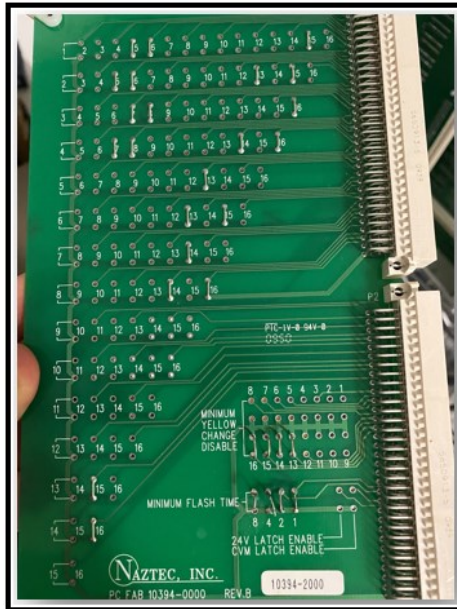
Split	14 Perm2 Enable	15 Perm2 Enable	16 Perm3 Enable	1 Perm3 Enable	2 Perm3 Enable	3 Perm3 Enable	4 Perm3 Enable	5 Perm3 Enable	6 Perm3 Enable	7 Perm3 Enable	8 Perm3 Enable	9 Perm3 Enable	10 Perm3 Enable	11 Perm3 Enable	12 Perm3 Enable	13 Perm3 Enable	14 Perm3 Enable	15 Perm3 Enable	16 Perm3 Enable	Split Name	
Split 1																					Test Cycle
Split 2																					AM Light
Split 3																					AM Norm
Split 4																					AM Peak
Split 5																					Mid Light
Split 6																					Mid Norm
Split 7																					Mid Peak
Split 8																					PM Light
Split 9																					PM Norm
Split 10																					PM Peak
Split 11																					11

This text will be displayed on the List view under the Pattern and Split Index columns along with the corresponding pattern and split number.

Alarm	Status	Lock	ID	Name	Lock User Name	Free	Coord State	Coord Src	Pattern	Split Index	TBC	Local Counter	SP Coun
	<span style="color: red;">●</span>		22	Eldridge at Jess Pirtle- V76 ATC2							0	0	
	<span style="color: green;">●</span>		23	Eldridge at 7th	3	COORD	SYNC	B-TBC	1 Test Cycle	1 AM Light	19	19	3-1
	<span style="color: green;">●</span>		25	Eldridge at Lakeview	5	COORD	LONG -61	B-TBC	1 Test Cycle	1 AM Light	20	81	4-43

## MMU / CMU Permissive Programming Screen

Modifications were made beginning with ATMS version 2.10 to enhance the editing of the MMU / CMU permissive programming data. The permissive data is now aligned with the Jumper (or Diode) card based on the controller type being used in a standard NEMA or Caltrans sixteen channel cabinet.



Controller Database Editor - MMU Permissives

Timing Sheet Preview Print Export

MMU	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	Channel 7	Channel 8	Channel 9	Channel 10	Channel 11	Channel 12	Channel 13	Channel 14	Channel 15	Channel 16
MMU 01				YES	YES									YES	
MMU 02				YES	YES							YES		YES	
MMU 03						YES	YES								YES
MMU 04						YES	YES						YES		YES
MMU 05												YES			
MMU 06												YES		YES	
MMU 07													YES		
MMU 08													YES		YES
MMU 09															
MMU 10															
MMU 11															
MMU 12															
MMU 13														YES	
MMU 14															YES
MMU 15															

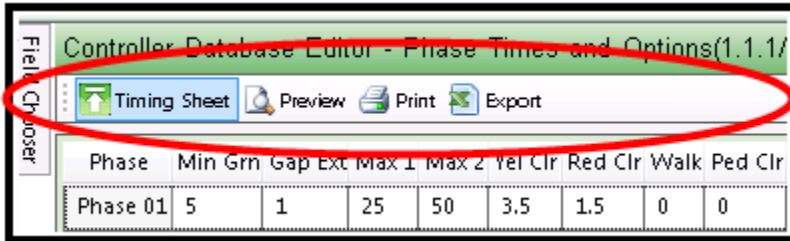
Table 1

Adv Warning Auto Flash Auto Flash Parms Call Inhibit Redirect Alt Channel Parms Channels Assignments Channels Assignments Plus Console Parms Detector Parms ITS Cab Device MMU Permissives



## Overview selections: Preview, Print, Export and Timing sheets

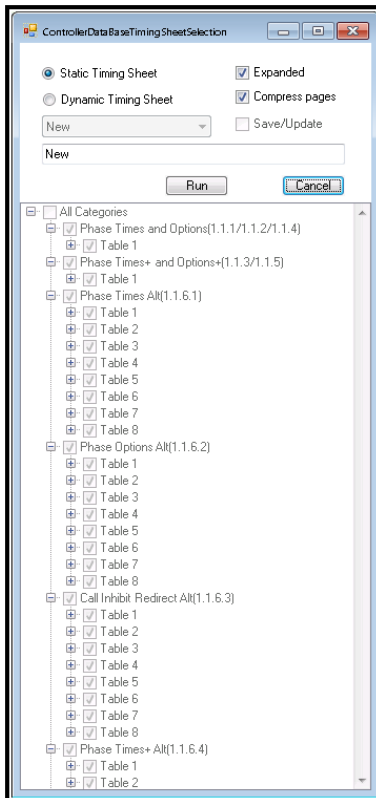
When in edit mode, the overview screen allows the user to preview, print or export the selected datasheet to a text file or Excel. In addition, the user can print or export all sheets using the standard print or export tools.



An enhanced feature has been added for the user to customize and print or save Timing sheets for each database. When the user is in edit mode, selecting the Timing Sheet icon will bring up the following menu:

The default, known as the **Static Timing Sheet** will print out all data for all tabs.

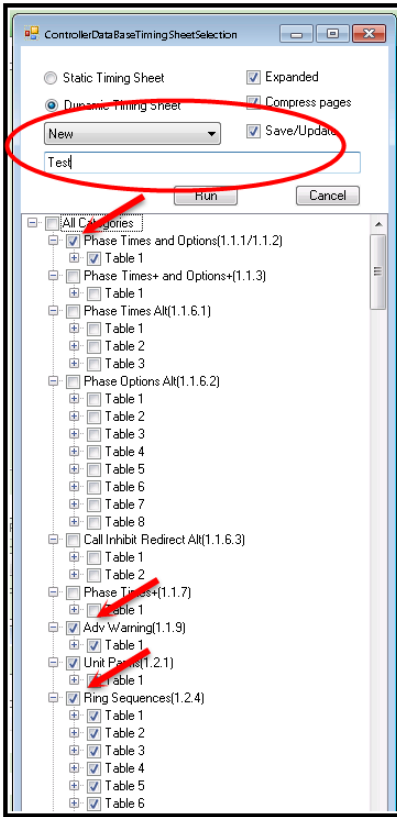
By selecting **Run** the user will print out all timing sheets including the file type (Standard, Permanent, Upload, etc.) and the date that the database was created.



Controller Database Timing Sheet																
<b>Station:</b> 1015 - Grand and Vista Drive- 1015( Standard File ) <b>Type:</b> NTCIP 76.x 2070 Ethernet <span style="float: right;"><b>Firmware:</b> 76.13p</span> <b>Created By:</b> naztec <span style="margin-left: 100px;"><b>Modified By:</b></span> <span style="float: right;"><b>Reviewed By:</b></span>																
Phase Times and Options(1.1.1/1.1.2)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green		10				10		4								
Gap Ext		3				3		2								
Max1		40				40		25								
Max2		40				40		25								
Yellow Clr	3	4.5	3	3	3	4.5	3	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr		1				1		1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Walk		5				5		5								
Ped Clearance		13				13		16								
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce		10				10										
Cars Before Reduce																
Time To Reduce		10				10										
Reduce By		1				1										
Min Gap		1				1										
Dynamic Max Limit																
Dynamic Max Step																
Startup	RED	GREEN	RED	RED	RED	GREEN	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Enable	.	X	.	.	.	X	.	X	.	.	.	.	.	.	.	.
Auto Flash Entry	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Auto Flash Exit	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Non-Actuated 1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Non-Actuated 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lock Calls	.	.	.	.	.	.	.	.	X	X	X	X	X	X	X	X
Min Recall	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.

1015 1/64 4/27/2018 4:54:27 PM

The timing sheet can be printed or exported as a PDF, HTML, MHT, RTF, XLS, XLXS, CSV, TEXT or IMAGE data file.



In addition, the user can create a customized timing sheet, by controller type and save it as a template to be used for multiple intersections and other users. The user simply selects **Dynamic Timing Sheet** and the categories that they want to print out. In addition, by selecting **Save/Update**, a customized timing sheet template will be created with the name you enter for future usage.

### Controller Database Timing Sheet

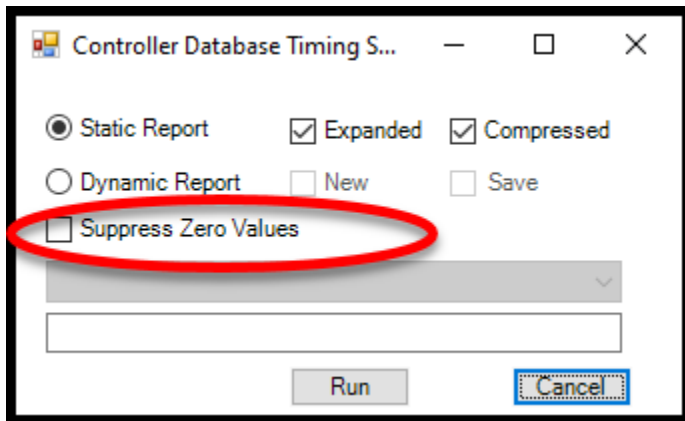
---

**Station:** 1015 - Grand and Vista Drive- 1015( Standard File )  
**Type:** NTCIP 76.x 2070 Ethernet **Firmware:** 76.13p  
**Created By:** naztec **Modified By:** **Reviewed By:**

Phase Times and Options(1.1.1/1.1.2)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green		10				10		4								
Gap Ext		3				3		2								
Max1		40				40		25								
Max2		40				40		25								
Yellow Clr	3	4.5	3	3	3	4.5	3	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr		1				1		1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Walk		5				5		5								
Ped Clearance			13			13		16								
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce		10				10										
Cars Before Reduce																
Time To Reduce		10				10										
Reduce By		1				1										
Min Gap		1				1										
Dynamic Max Limit																
Dynamic Max Step																
Startup	RED	GREEN	RED	RED	RED	GREEN	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Enable	.	X	.	.	.	X	.	X	.	.	.	.	.	.	.	.
Auto Flash Entry	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Auto Flash Exit	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Non-Actuated 1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Non-Actuated 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lock Calls	.	.	.	.	.	.	.	X	X	X	X	X	X	X	X	X
Min Recall	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.

1015
1/7
4/27/2018 5:06:02 PM

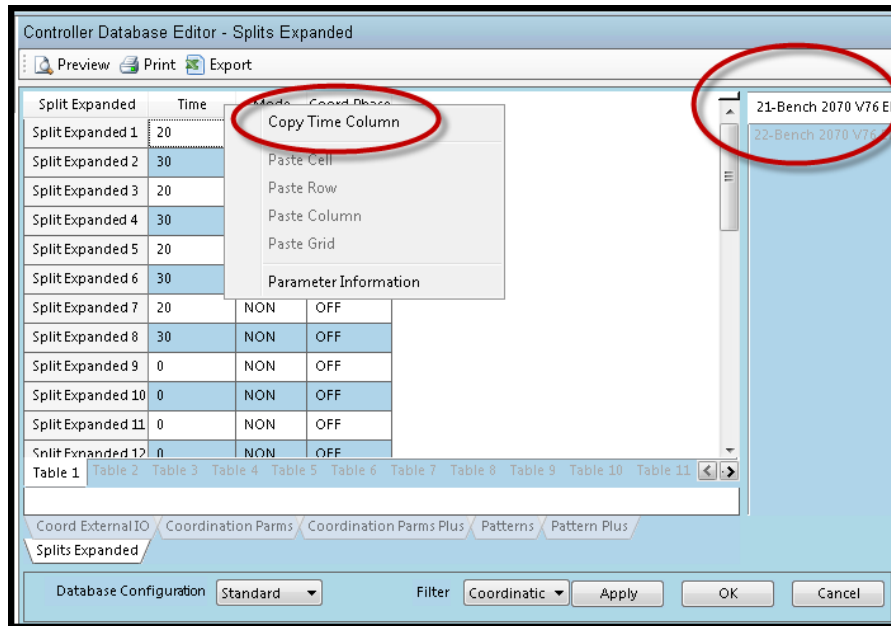
Similarly, the export button will bring up a selection screen for you to export the entire database or selected screens to an excel or text file.



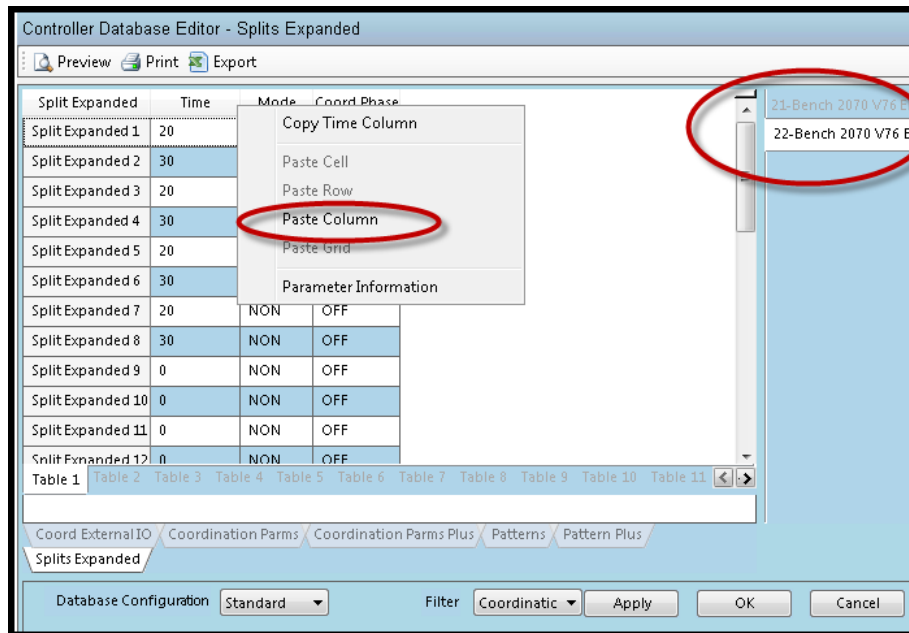
Beginning with ATMS 2.14 a feature has been added to suppress zero values when printing out dynamic timing sheets. By checking this box the generated timing sheet will print out only non-zero/non-blank parameters per category

## Copy & Paste

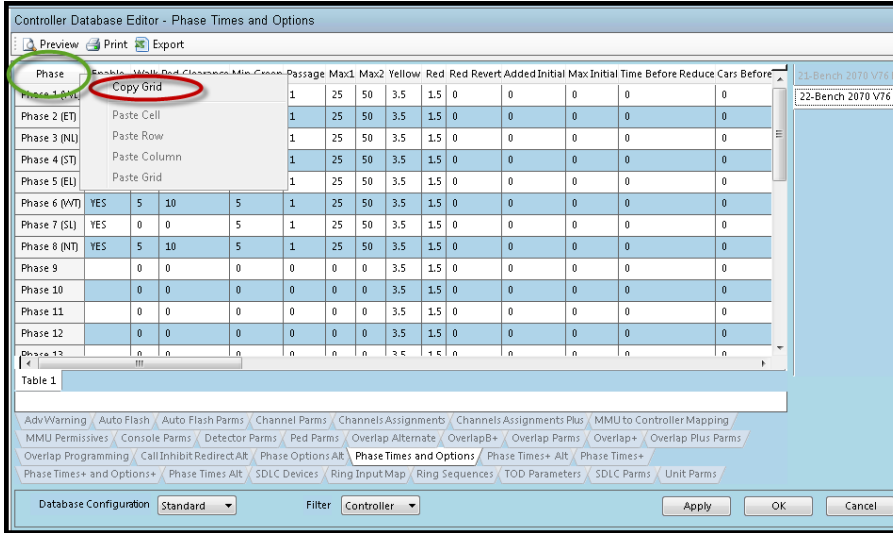
The *Controller Database Editor* also offers Copy/Paste functionality, to easily copy entries between fields (rows, columns, cells, and grids), controllers and databases. To copy a row or column, “right-click” on the row or column parameter name. **ATMS** will highlight the entire data set.



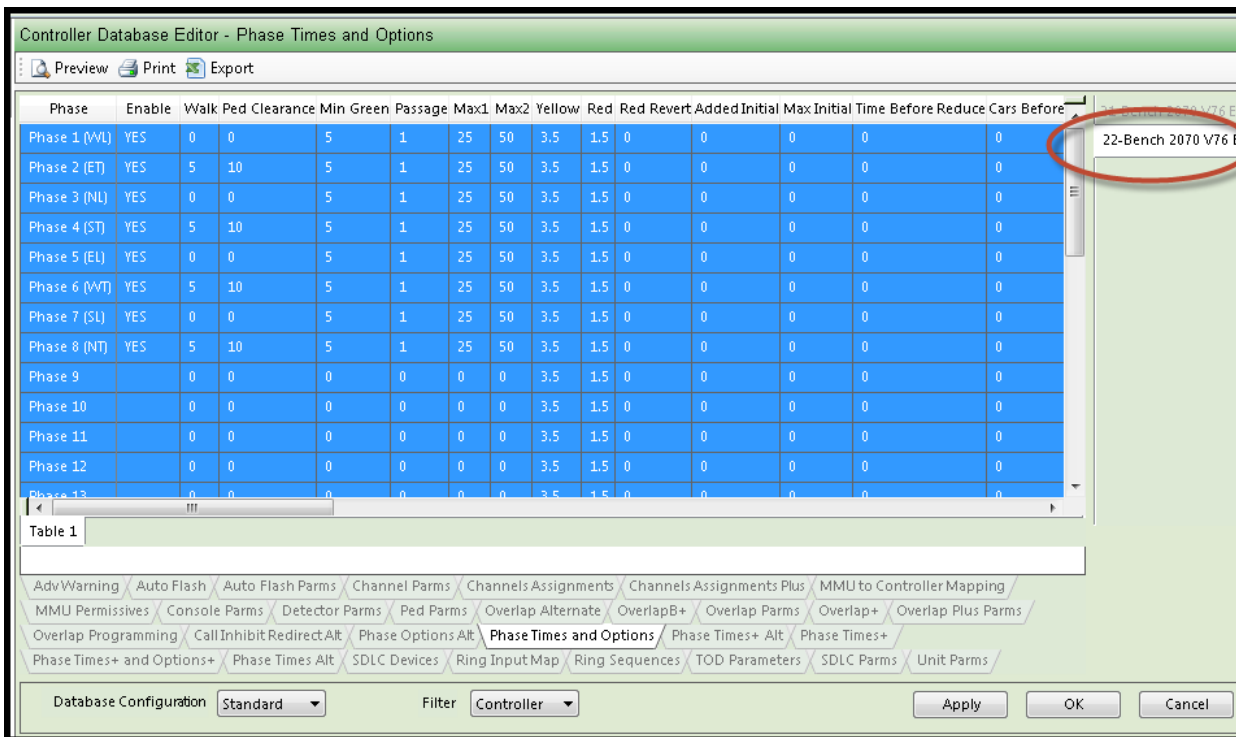
Next, navigate to the desired controller tab to paste data. Select the “Apply” or “OK” button to save the changes.



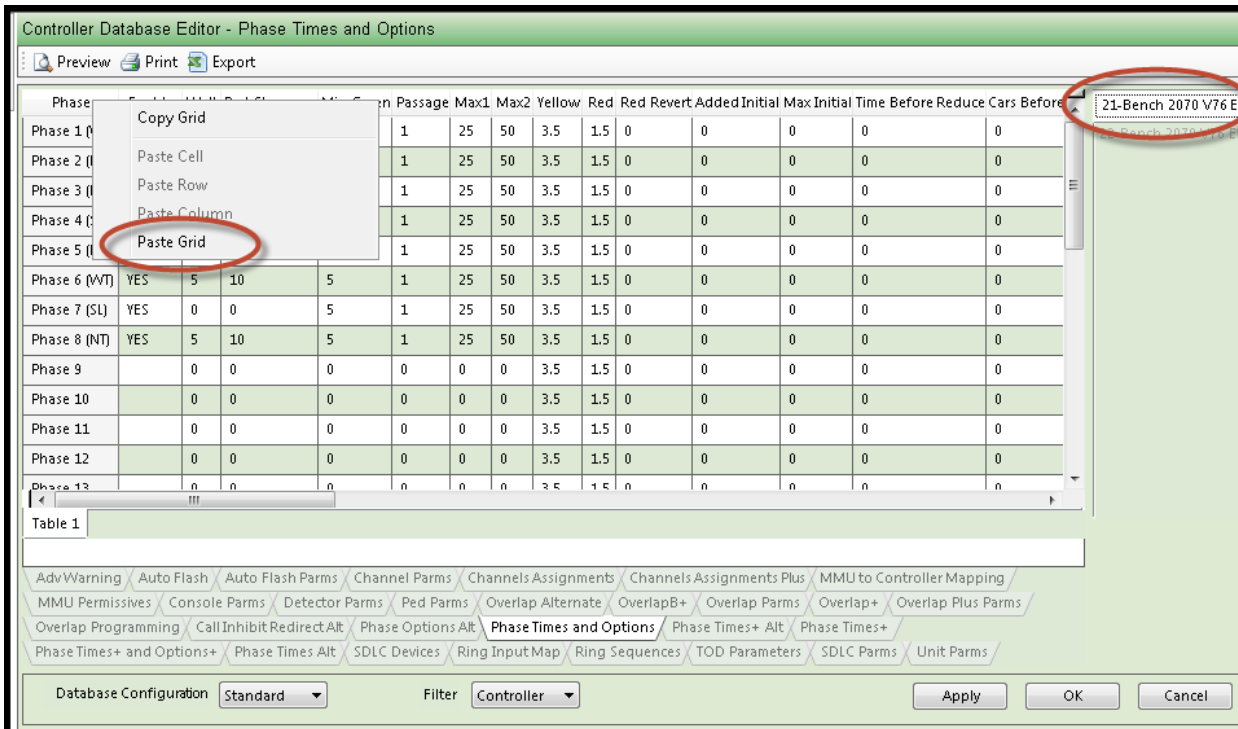
The *Copy Grid* feature enables the user to copy the entire data tab in the window. It is intended to copy & paste data pages between multiple controller database tabs (on the upper right of the window). To perform a *Copy Grid* function, “right-click” the database parameter box in the upper-left of the database window (shown below in the **GREEN** circle). Select the “Copy Grid” option as shown in the **RED** circle.



All of the database parameters will highlight in a dark blue.



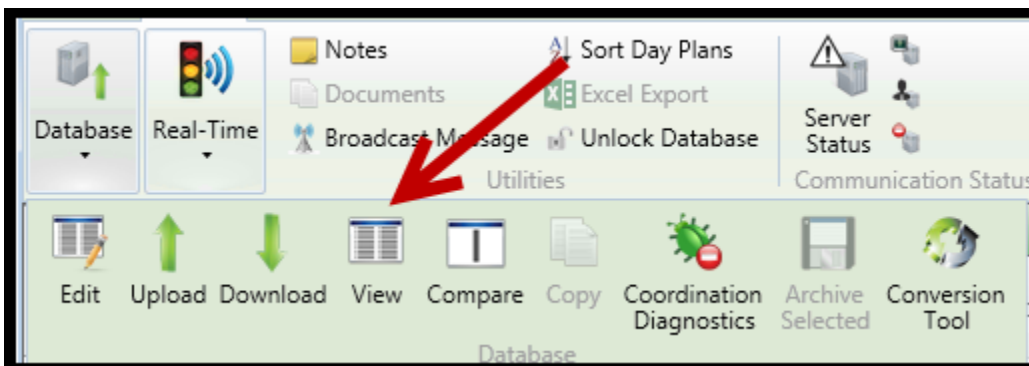
Select the next controller to receive the values, select the same upper-left box, then choose “Paste Grid.”



Select the “Apply” or “OK” button to save the changes.

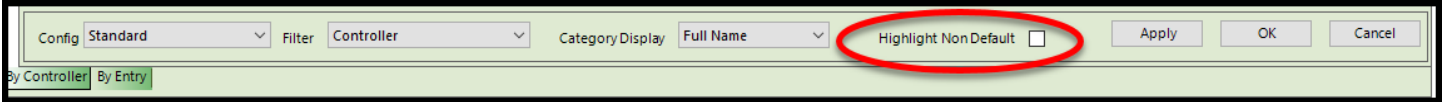
## 5.2.2 Database View

The *View* option presents the same information in the same navigational manner as the *Database...Edit* option. When the System Administrator enables the *View* option the entire database will be available. However, changes will not be allowed to be made within the database boxes. This feature is good for multi-jurisdictional applications and for agency personnel that are not allowed to enact timing changes, but could benefit by knowing database values.



## Highlighting Non-Default Data

As of ATMS 2.14 a feature was added to assist the user in ascertaining which data fields have been programmed in the controller and which data fields have not been programmed or modified. The Highlight Non-Default checkbox will allow the user to see agency programmed data when viewing data. Data that has been programmed will be highlighted in yellow. In addition, all filtered menu tabs will be highlighted in yellow.



Below is a Scout screen that shows Phase Times and Options with all data. It is followed by the same screen which shows highlighted data.

The screenshot shows a window titled 'Controller Database Editor - Phase Times and Options(1.1.1/1.1.2/1.1.4)'. The window has a menu bar with 'Timing Sheet', 'Preview', 'Print', and 'Export'. Below the menu bar is a table with the following columns: Phase, MIN GRN, Gap Ext, MAX 1, MAX 2, Yel Clr, Red Clr, Walk, Ped Clr, Red Rev, Add Init, Max Init, Gap Reduce Time B4, Gap Reduce Cars B4, Reduce, Gap Reduce Time To, and Gap Reduce Reduc. The table lists phases from Phase 01 (NL) to Phase 16. The data for each phase is as follows:

Phase	MIN GRN	Gap Ext	MAX 1	MAX 2	Yel Clr	Red Clr	Walk	Ped Clr	Red Rev	Add Init	Max Init	Gap Reduce Time B4	Gap Reduce Cars B4	Reduce	Gap Reduce Time To	Gap Reduce Reduc
Phase 01 (NL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 02 (ST)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 03 (EL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 04 (WT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 05 (SL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 06 (NT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 07 (WL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 08 (ET)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0
Phase 09	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 10	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 11	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 12	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 13	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 14	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 15	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0
Phase 16	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0

Below the table is a 'Field Chooser' section with a list of menu items. At the bottom of the window, there is a control panel identical to the one in the first screenshot, with the 'Highlight Non Default' checkbox circled in red. The 'By Controller' tab is selected.

Controller Database Editor - Phase Times and Options(1.1.1/1.1.2/1.1.4)

Timing Sheet Preview Print Export

Phase	MIN GRN	Gap Ext	MAX 1	Max 2	Yel Clr	Red Clr	Walk	Ped Clr	Red Revt	Add Init	Max Init	Gap Reduce	Time B4	Gap Reduce	Cars B4	Reduce	Gap Reduce	Time To	Gap Reduce	Reduc
Phase 01 (NL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 02 (ST)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 03 (EL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 04 (WT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 05 (SL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 06 (NT)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 07 (WL)	5	1	25	50	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 08 (ET)	5	1	25	50	3.5	1.5	5	10	0	0	0	0	0	0	0	0	0	0	0	0
Phase 09	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 10	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 11	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 12	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 13	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 14	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 15	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 16	0	0	0	0	3.5	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1

Highlighted Data and Tabs

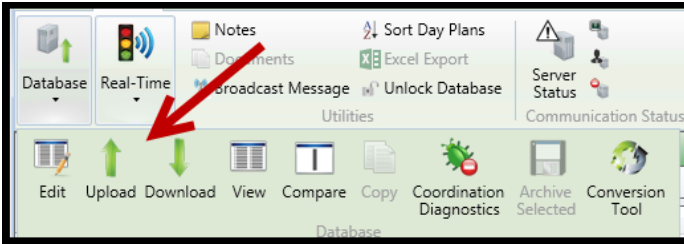
Adv Warning(1.1.9) Auto Flash Parm(1.4.1) Auto Flash Phase/Overlap(1.4.2) Call Inhibit Redirect Alt(1.1.6.3) Channel Parm(1.2.1/1.8.3) Channels Assignments Plus(1.8.4/1.8.5)  
 Channels Assignments(1.8.1/2) CMU Permissives(1.3.9) Detector Parm(5.8.1/1.3.4) General Mapping Parameters(1.5.1) Header Data ITS Cab Device SIU Critical (1.3.7)  
 ITS Cab Device SIU\_Critical (1.3.7) ITS Cab Device(1.3.7/1.3.4) Logging Purdue(1.9.5) MMU Permissives(1.3.3) MMU to Controller Mapping(1.3.5) Overlap Conf Prog+(1.5.2.X.2)  
 Overlap Parm Flash(1.5.1) Overlap Program Parm+(1.5.2.X.3) Overlap Programming(1.5.2.X.1) Ped Parm(1.2.1.Ped) Phase Options Alt(1.1.6.2) Phase Times Alt(1.1.6.1)

Config Standard Filter Controller Category Display Full Name Highlight Non Default  Apply OK Cancel

By Controller By Entry

This feature is only available when viewing data “By controller” and not “By Entry”.

## 5.2.3 Database Upload



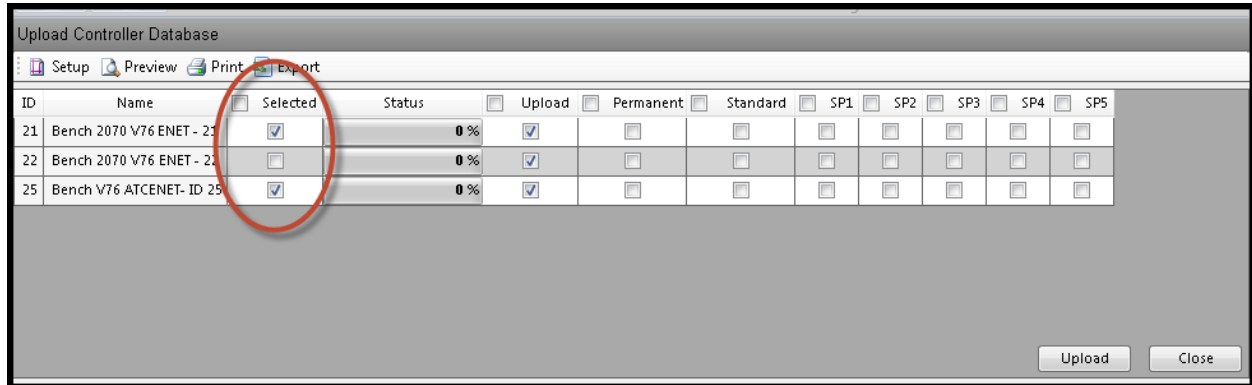
Users can select single or multiple controllers from which to *Upload* database parameters.

Users can decide under which configurations the uploaded database parameters are stored, such as uploading a controller database directly to a *Special* database.

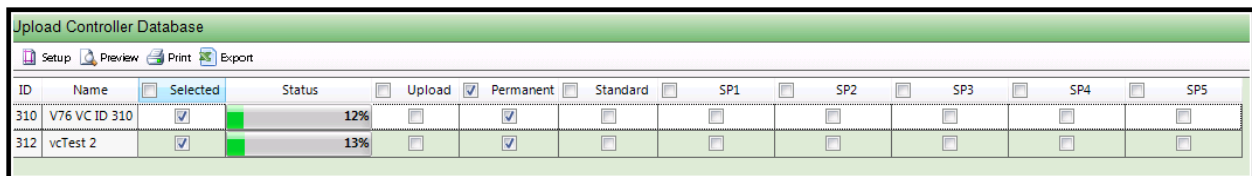
Database *Upload* can be performed by selecting the desired intersection(s) from the *List* or *Map* view. After the controller selection is made, the user can navigate to the *Actions* section or “right-click” to pop-up the *Actions* menu.

Prior to performing the *Upload* function, the user can perform specific selection criteria for the *Upload* process. The user can uncheck the *Selected* box, which will remove the specific controller from the *Upload* process without having to go back and repeat the selection process.

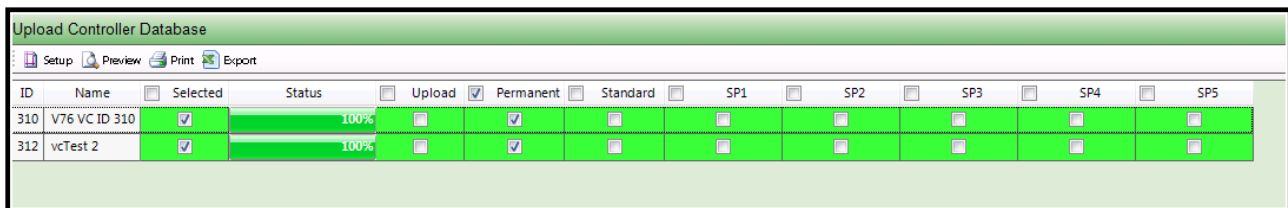
The figure below shows how a user can select multiple controllers for *Upload*, and remove a controller from the upcoming transaction without re-generating the list. The *Selected* box for controller ID# 22 has been unchecked, isolating controllers ID# 21 and # 25 for an *Upload*.



Users can also *Upload* directly into any or all of the additional seven databases in **ATMS**. By checking any of the specific database boxes, the *Upload* process will overwrite the corresponding database with the uploaded file. The following figure shows how controllers can directly upload into the *Permanent* database.



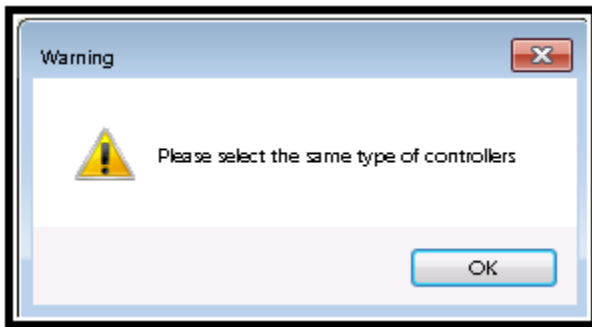
The figure above illustrates how **ATMS** has the ability to simultaneously *Upload* multiple controllers. This can be performed when selected controllers are assigned to different communication drops on the *Communications Server*.



The figure above shows a successful database upload for the two controllers to the *Permanent* databases.



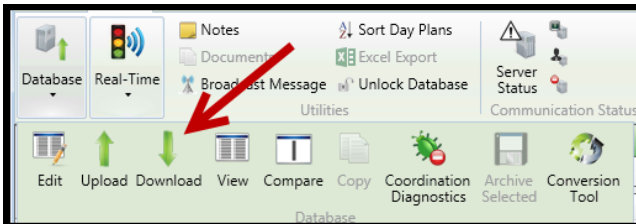
Based on controller types ATMS may not be able to upload multiple controllers. For example, Scout.x uses a service to upload data, whereas V61.x, V65.x and V76.x type controllers do not. Due to this difference, the user may get the message below that will pop up after trying to upload.



Simply select controllers of the same type and the upload will proceed.

**Note:** *When an Upload and Compare has been done. If there are No differences, than an Upload into the standard file MUST be done before editing the Standard or Special files. This ensures All Unseen Data Fields will be brought back from the Field running controller.*

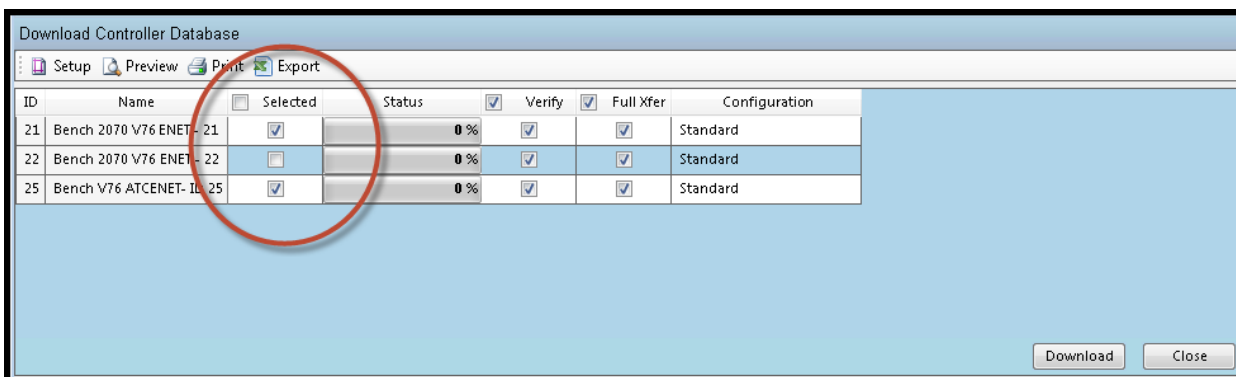
### 5.2.4 Database Download



Users can select single or multiple controllers to which to *Download* database parameters.

Users can decide which the database to download, such as downloading a *Special* database directly to a controller.

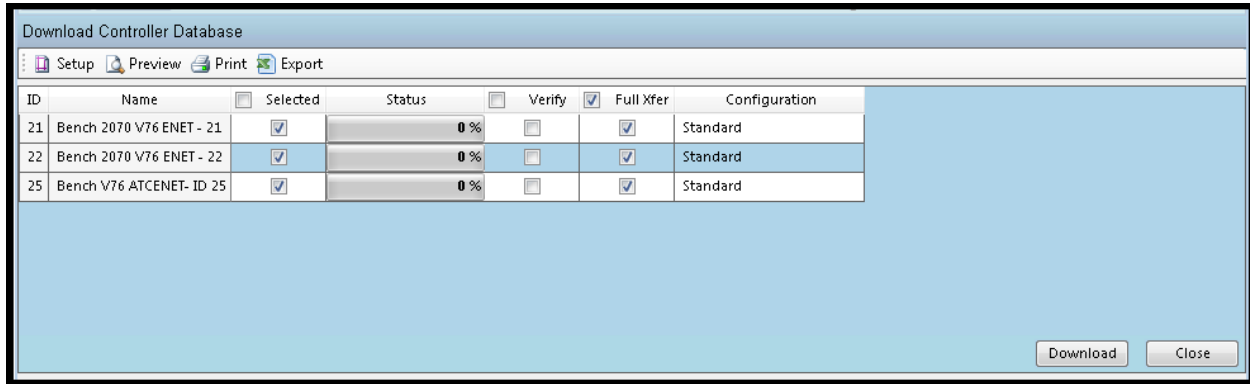
Database *Download* can be performed by selecting the desired intersection(s) from the *List* or *Map* view. After the controller selection is made, the user can navigate to the *Actions* section or “right-click” to pop-up the *Actions* menu.



Prior to performing the *Download* action, the user can perform specific selection criteria for the *Download* process. The user can uncheck the *Selected* box, which will remove the specific controller from the *Download* process without having to go back and repeat the selection process. The figure above shows how a user can select multiple controllers, but within the “Selected” row exempt (uncheck) a controller from the upcoming *Download* transaction. The *Selected* box for controller ID#22 has been unchecked, isolating controllers ID#21 and #25 for a *Download*.

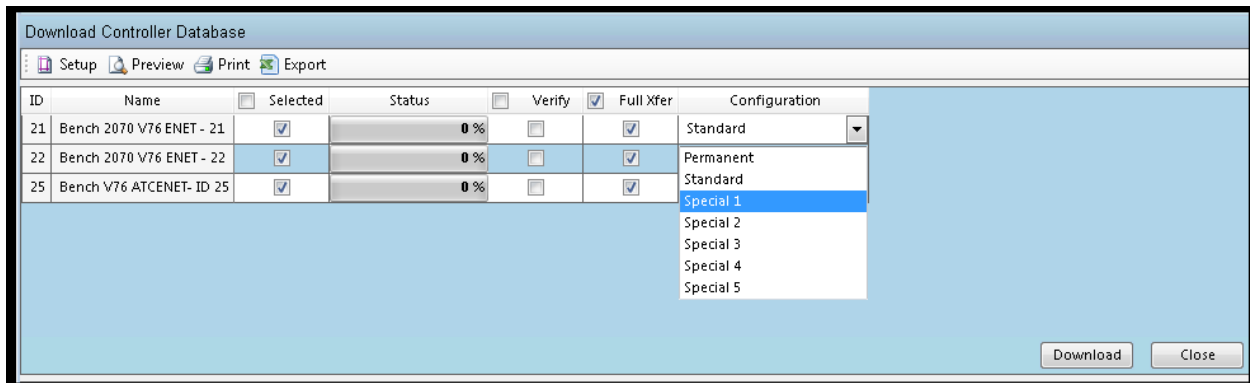
*Downloading* can be performed with a safety verification (*Download-Verify*), or be sent to overwrite the existing controller database without a safety verification (*Download-No Verify*). These downloading methods have been described earlier in this section.

The first action that **ATMS** performs during *Download-No Verify* process is an *Upload*. The *Status* box of the *Download* screen will indicate two full database transactions, the first for the *Upload*, the second for the *Download*.



It is highly recommended that only experienced and qualified users have the ability to “Download-No Verify”.

The user has the ability to select the amount of data for *Download* transmission. The *Download* can transmit only the edited changes, or the entire database. When the *Full Xfer* box is unchecked, the application will automatically determine the parameters that have changed and transmit only the difference. When the *Full Xfer* box is checked, the entire database will be downloaded to the controller. The figure below shows all three databases downloading a full database transfer from the **ATMS** server.

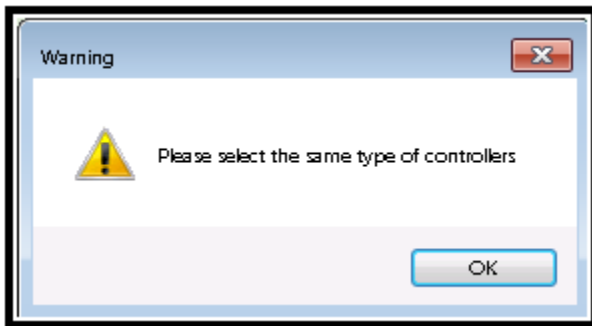


The *Configuration* box enables the user to select which database to *Download* to the controller. The above figure shows how a drop-down selection in the *Configuration* box allows selection of the *Special 1* database for *Download*. As a built in protection mechanism, **ATMS** defaults to the *Standard* database each time the *Download* action is selected.

If the user wants to attach a reason for the download, i.e. a specific note concerning the download. Simply click in the reason area and add your note(s).

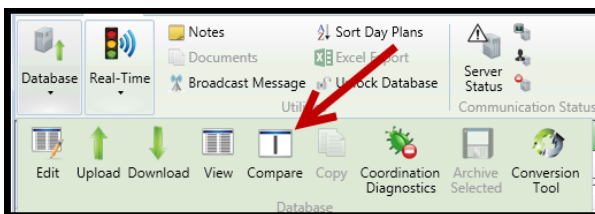
ID	Name	Selected	Status	Verify	Full Xfer	Configuration	Reason
310	V76 VC ID 310	<input checked="" type="checkbox"/>	0 %	<input type="checkbox"/>	<input type="checkbox"/>	Standard	Updated Det data to add Vol/Occ tracking
312	vcTest 2	<input checked="" type="checkbox"/>	0 %	<input type="checkbox"/>	<input type="checkbox"/>	Standard	Changed all ped times from 5 sec walk to 7 sed

Like the upload feature, based on controller types ATMS may not be able to download multiple controllers. For example, Scout.x uses a service to upload data, whereas V61.x, V65.x and V76.x type controllers do not. Due to this difference, the user may get the message below that will pop up after trying to download.



Simply select controllers of the same type and the download will proceed.

## 5.2.5 Database Compare



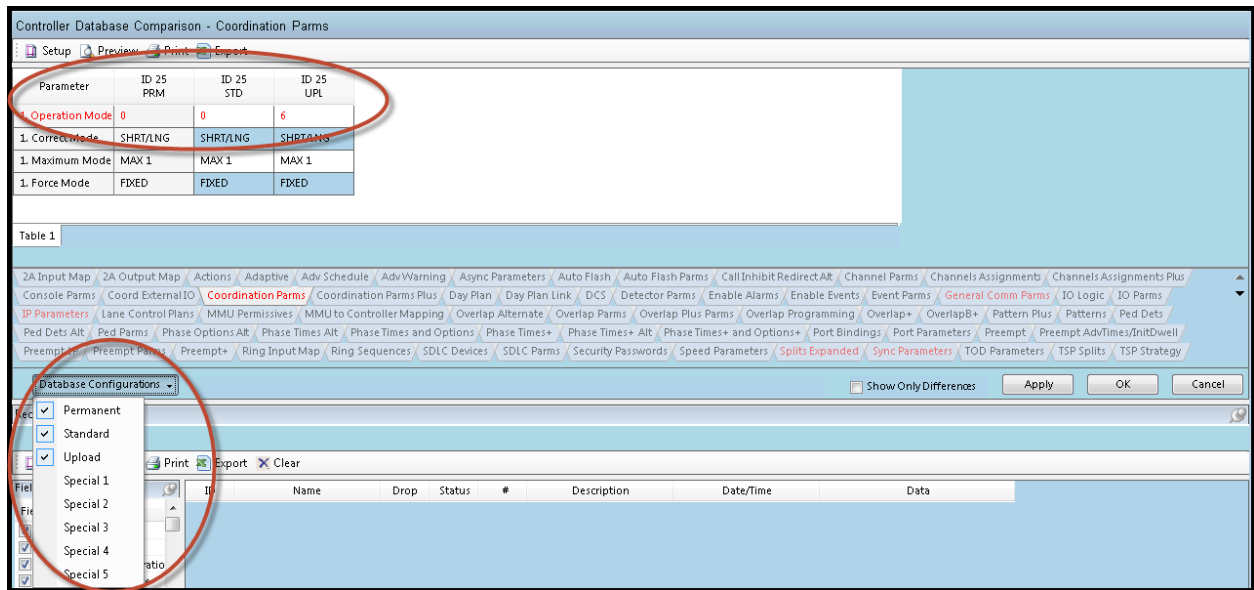
The user has the ability to *Compare* any combination of the eight databases in **ATMS**. This feature provides the identification of database differences for maintaining database integrity and comparing actual records against the file copy (Permanent).

Differences are easily located and identified between the selected database types. **ATMS** identifies database differences by color coding each database category tab and corresponding database parameter in **RED**. This will occur when a difference is present between any of the selected database types. This is also true when multiple intersections are selected for comparison. If any database value is different between multiple controllers, the entire row will be highlighted in **RED**. This can be confusing as specific controller database values can be matching, but it will still be highlighted as it is part of a selected group that contains a difference.

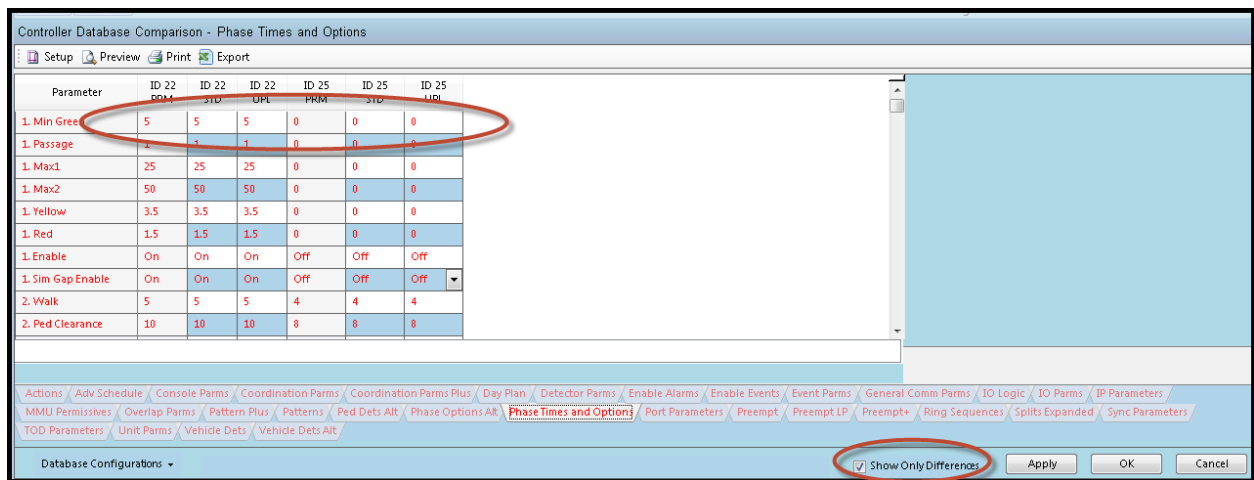
**Note: It's highly recommended to "Upload" and "Compare" before downloading any changes to the controller.**

**Note: When an Upload and Compare has been done. If there are No differences, than an Upload into the standard file MUST be done before editing the Standard or Special files. This ensures All Unseen Data Fields will be brought back from the Field running controller.**

The figure below illustrates how the user can select targeted database types for comparison. Select the *Database Configurations* box in the bottom left of the screen, then place a “check mark” next to each database type desired for comparison.



The figure below illustrates how the application can compare multiple database configurations across multiple controllers of the same database type simultaneously. The *Permanent*, *Standard*, and *Upload* files are selected for five controllers. The database parameters with no differences are identified in **BLACK** and the ones with differences in **RED**. Note that the “Patterns” tab is also identified in **RED**.

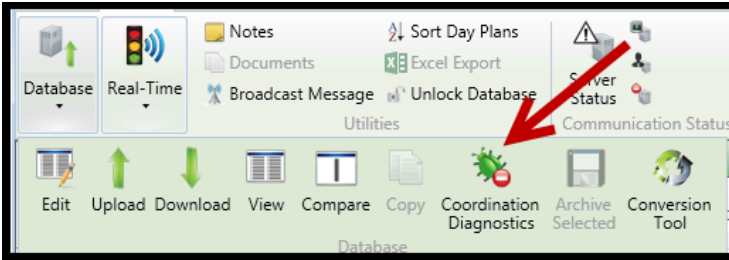


The *Compare* utility provides a “Show Only Differences” box located near the bottom of the screen. This feature eliminates the categories without differences and displays only the highlighted tab categories. Note that if multiple intersections are selected for the *Compare* process and any differences exist within the selected databases of all of the controllers, **ATMS** will identify that category in **RED**. The above figure shows 3 databases selected for 2 controllers. The circled area shows that the Minimum Green value for Phase 1 is different for one controller (#22), with a value of 5, than it is for the other (#25) with a value of 0.

In most cases the *Compare* utility is best used one intersection at a time, to compare field copies (*Upload*) with record copies (*Permanent*). **Check and uncheck “Show only differences to refresh compare screen.**

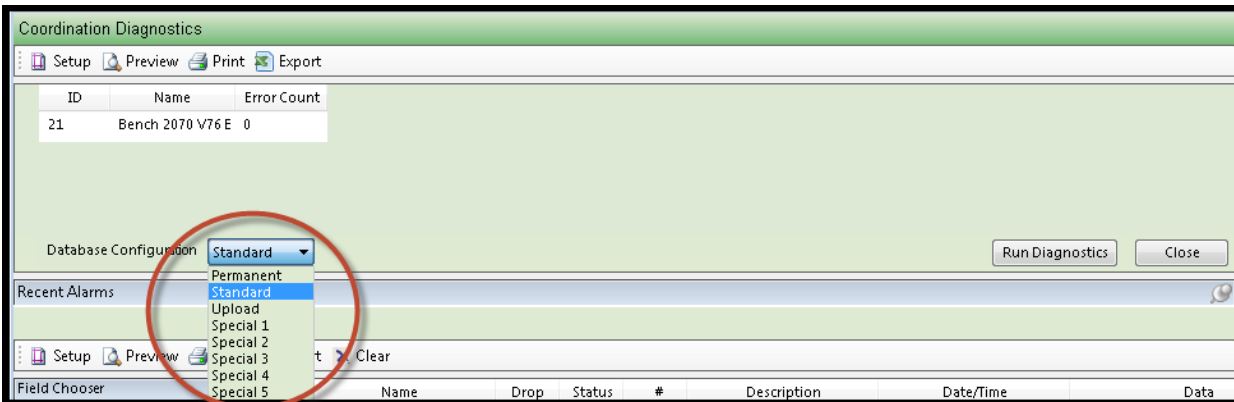
**Note: As of ATMS 2.10.1, “Show Only Differences” will be the default display.**

## 5.2.6 Coordination Diagnostics

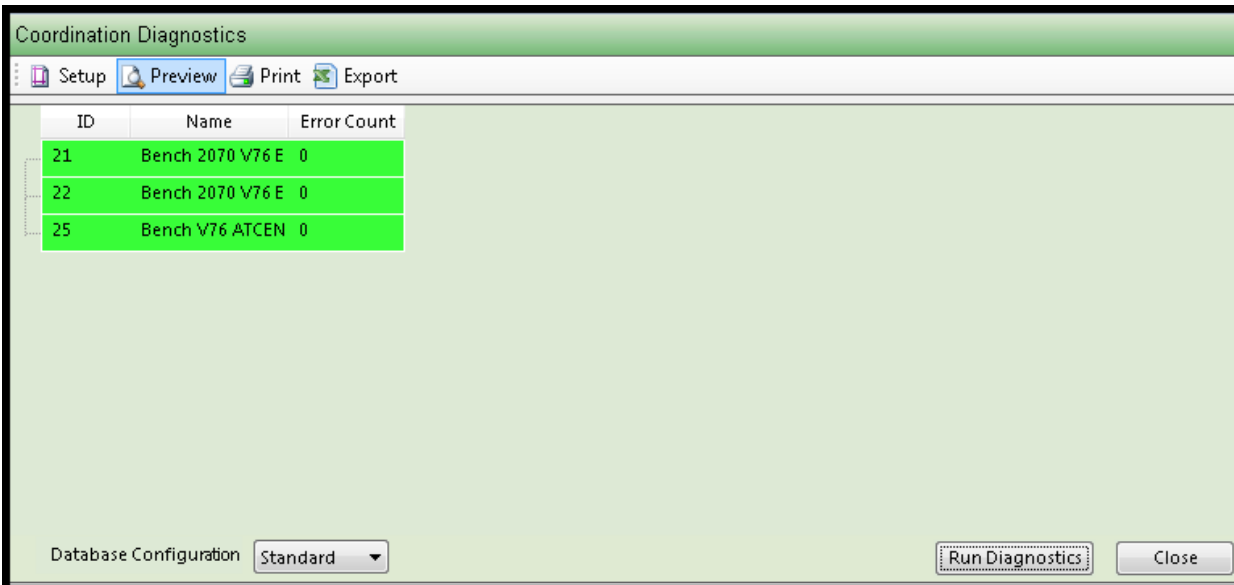


The *Coordination Diagnostics* feature enables the user to run coordination database checks prior to download or by uploading an active database to run a diagnostics from **ATMS**. Users can run diagnostics on databases either from **ATMS** or directly on the controller.

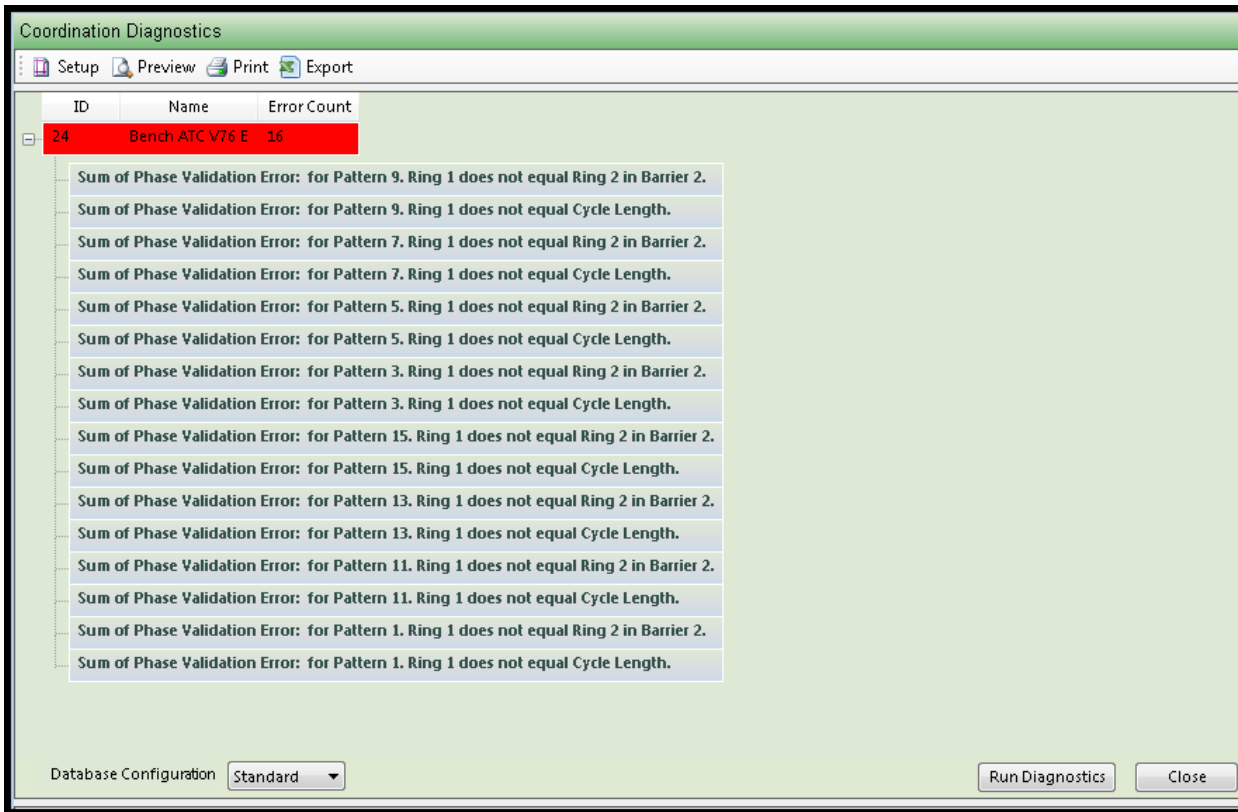
First, select the controller(s) from the List or *GIS Map*, then navigate to *Actions...Utilities...Coordination Diagnostics*. Next, select the database that you wish to run the *Coordination Diagnostics* as shown below. Select the *Run Diagnostics* button or *Close* to exit.



If the database passes the diagnostics check, the controller line will be highlighted **GREEN** as shown below.

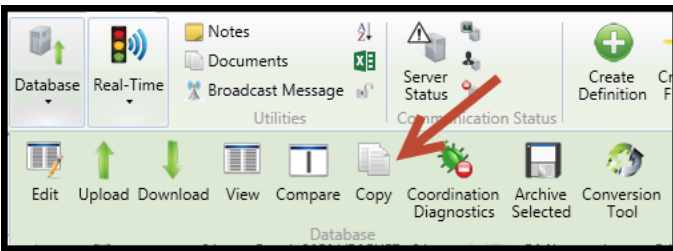


If a database does not pass the diagnostics, it will be highlighted in **RED** and each individual error will be described. In the picture below, the database has been found with multiple errors.



**NOTE: Coordination Diagnostics can be done on multiple controllers as long as they are programmed as the same controller type.**

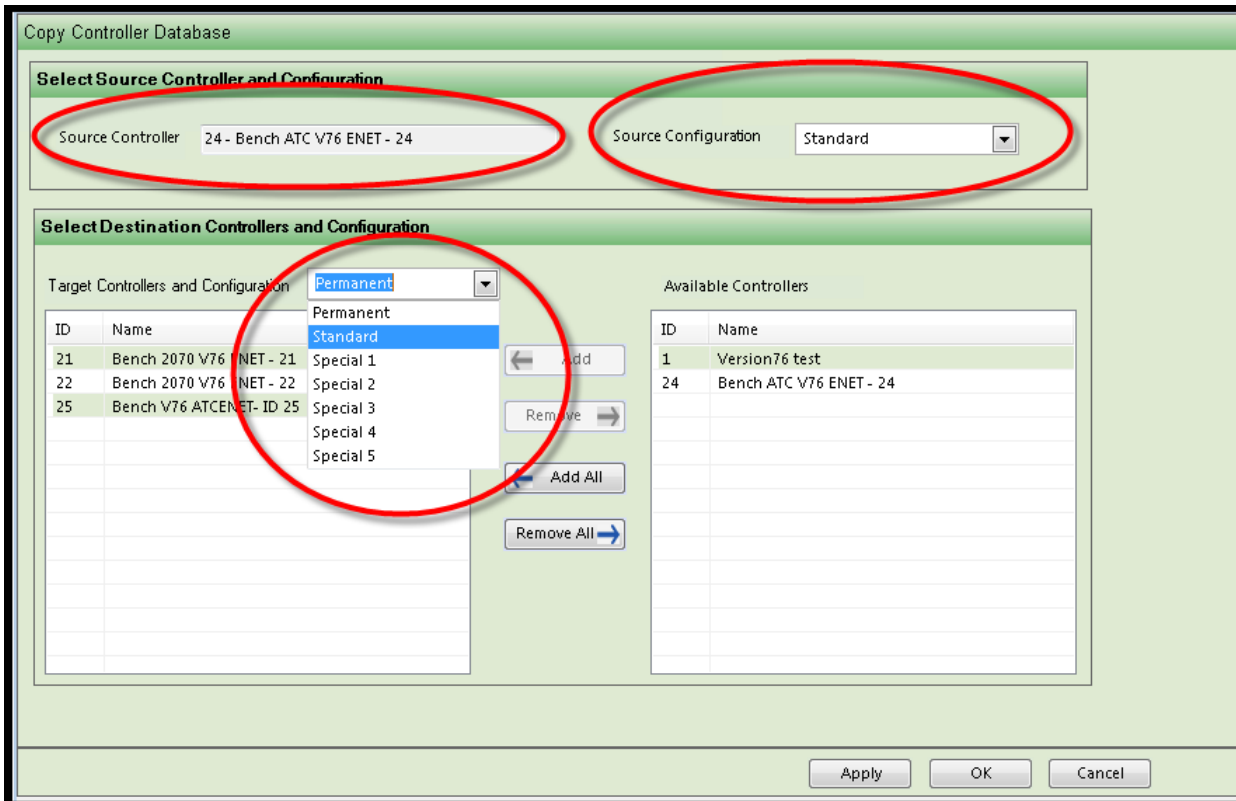
## 5.2.7 Database Copy



This utility allows the user to copy file types for the selected intersection into its other databases (e.g. Special) or any number targeted intersection database(s).

The copied file may be from any of the file types (standard, permanent, upload, special 1, etc.). This feature is very useful when copying a database maintained in **ATMS** as a template.

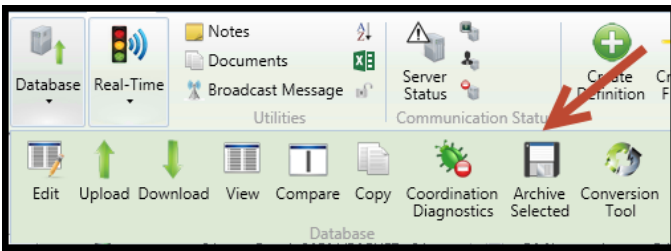
The Figure below shows how a user can copy a template *Standard* database (#105-Test Controller) to the *Standard* database of three other controllers.



First, select the *Source Controller* and the *Database Configuration* that you wish to copy **from**. Next, select the *Destination Controller* and the *Database Configuration* that you wish to write the database **to**. Select “Apply” or “OK” to save, “Cancel” to quit and leave the screen without saving.

Once the Copy function is performed, the database(s) that were overwritten are lost. It is suggested that the System Administrator use discretion when giving authority to users for this capability.

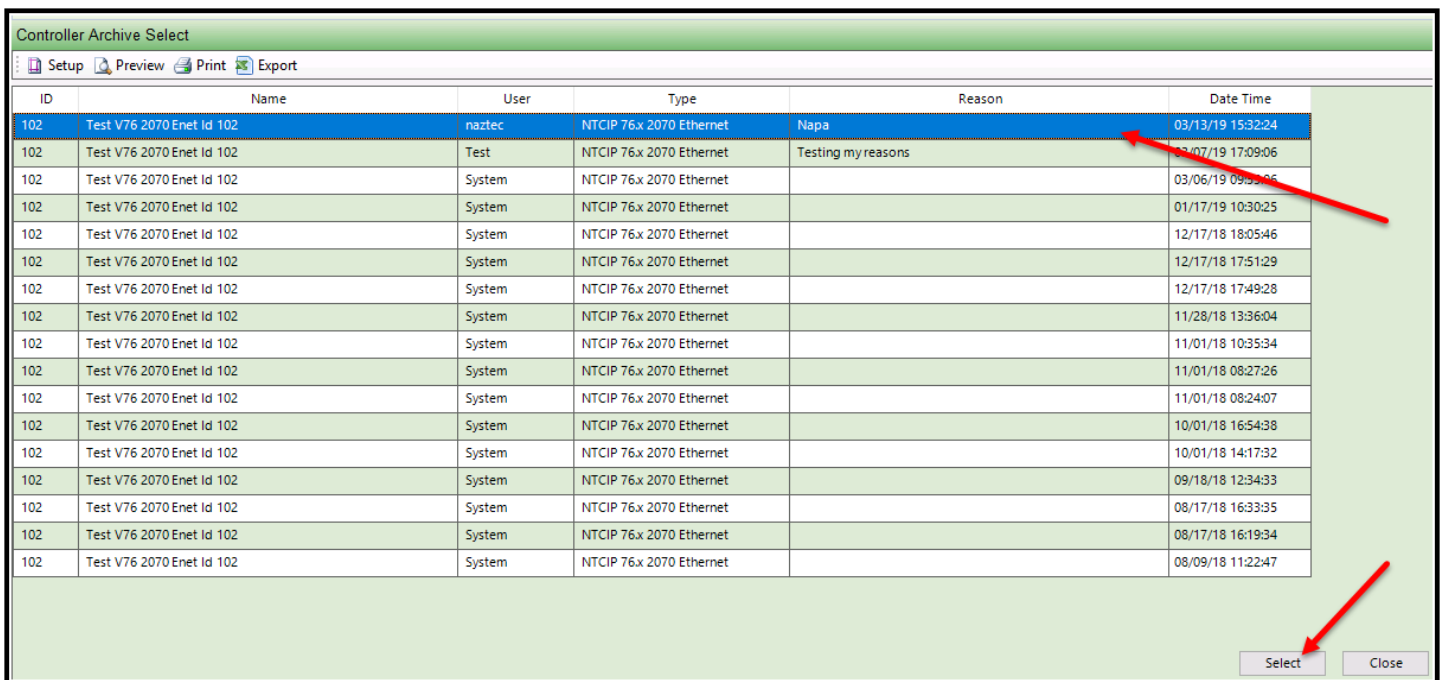
## 5.2.8 Database Archive



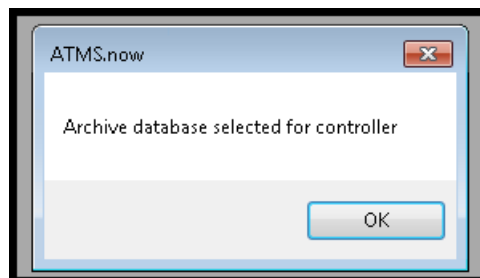
Whenever a user does a database download, the system creates an archive of the database that was downloaded in the \Naztec\Nazserv\Archive\Data\[ID] folder (replace the ID with the controller ID).

In order to select the archive we have a new action under the “Database” actions called *Archive(s) Selected*. The user is allowed to select up to 2 archives. Once selected you can go back to the database view option and from the configuration drop down you can select the archive databases. Notice that if the user enters a reason for Download after doing a download, that will be reflected in the Reason column.

Below is an example on how to select an archived database. First select the Archive(s) Selected action.



This pops up when a user selects an archived database and clicks on the “Select” button



Once selected, you can treat this file the same as any .std, .upl, .perm, .sp1, or any other database file. Below is a screen that uses the archive to compare previous data to the data currently in the controller database.



Controller Database Comparison - Phase Times and Options

Setup Preview Print Export

Parameter	ID 25 PRM	ID 25 STD	ID 25 UPL	ID 25 ARC1
1. Walk	0	0	0	0
1. Ped Clearance	0	0	0	0
1. Min Green	0	0	0	5
1. Passage	0	0	0	1
1. Max1	0	0	0	25
1. Max2	0	0	0	50
1. Yellow	0	0	0	3.5
1. Red	0	0	0	1.5
1. Red Revert	0	0	0	0
1. Added Initial	0	0	0	0
1. Max Initial	0	0	0	0
1. Time Before Reduce	0	0	0	0

Table 1

Day Plan Day Plan Link DCS Detector Parms Enable Alarms Enable Events Event Parms General Comm Parms IO Logic IO Parms IP Parameters

Lane Control Plans MMU Permissives MMU to Controller Mapping Overlap Alternate Overlap Parms Overlap Plus Parms Overlap Programming Overlap+

OverlapB+ Pattern Plus Patterns Ped Dets Ped Dets Alt Ped Parms Phase Options Alt Phase Times Alt Phase Times and Options Phase Times+

Phase Times+ Alt Phase Times+ and Options+ Port Bindings Port Parameters Preempt Preempt AdvTimes/InitDwell Preempt LP Preempt Parms

Preempt+ Ring Input Map Ring Sequences SDLC Devices SDLC Parms Security Passwords Speed Parameters Splits Expanded Sync Parameters

Database Configurations  Show Only Differences Apply OK Cancel

Rec  Permanent  Standard  Upload

Special 1  
Special 2  
Special 3  
Special 4  
Special 5

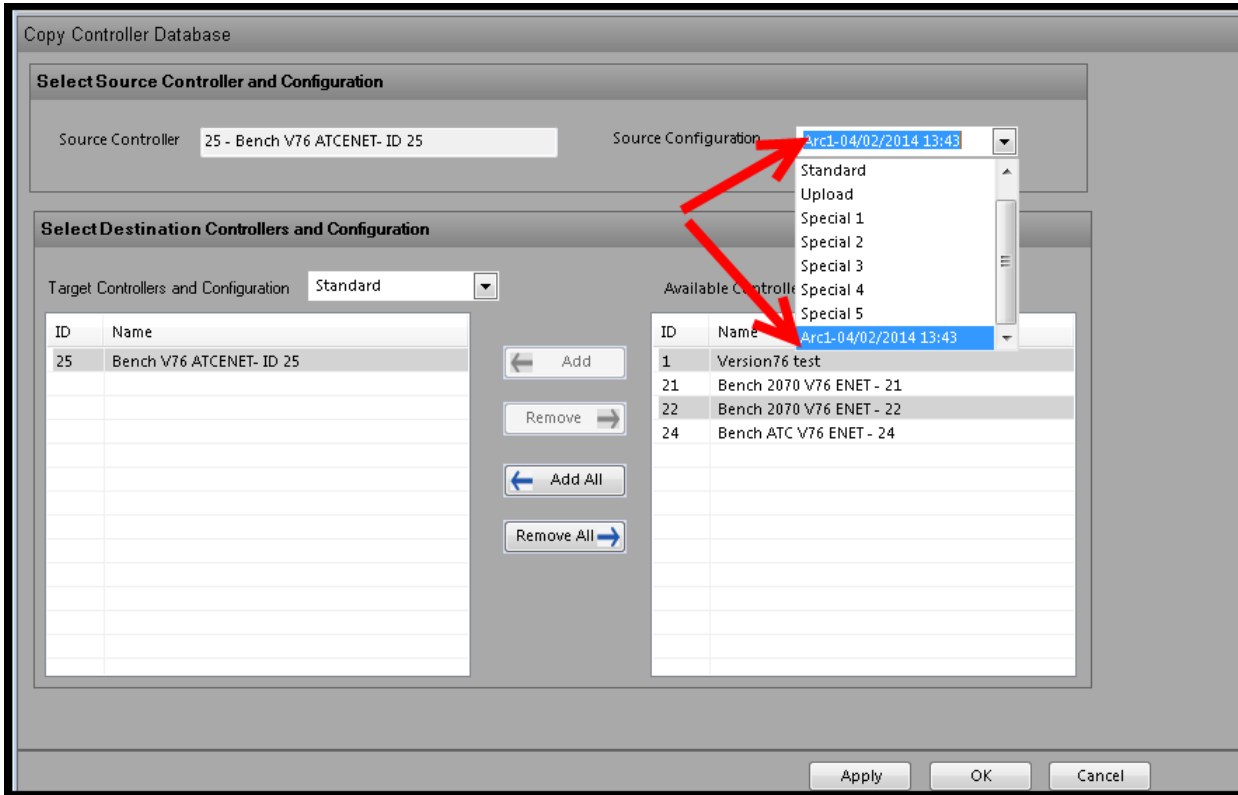
Arc1-04/02/2014 13:43

Export Clear

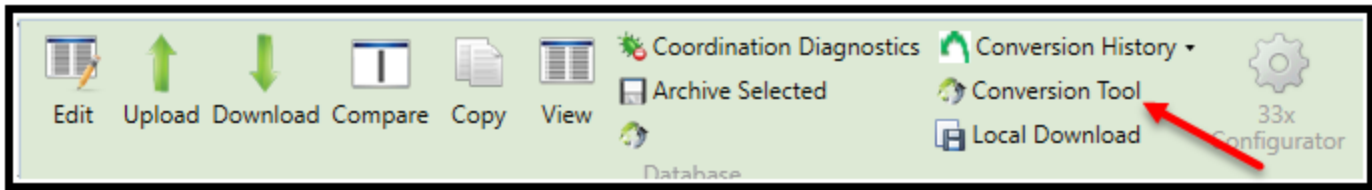
Name	Drop	Status	#	Description	Date/Time
------	------	--------	---	-------------	-----------

Recent Alarms Alarm History System Notes Current Users Incident Trigger Daktronics Adaptive Selected Details Current Alarms

The user can select a maximum of 2 archive files to view, compare and copy with the existing standard (.std) and permanent (.prm) databases. Below is a screen showing copying an archive database to another database.



## 5.2.9 Convert Database



ATMS provides this utility to assist the agency in converting NTCIP specific data from a variety of NEMA, 2070, ATC, Scout controllers to different controllers using this utility.

**Please Note that the Conversion Tool Options will be disabled until you put the Source controller offline.**

Please see the list below for conversions:

From Version	To Version	From Type	To Type	FIO Type 1	FIO Type 2	FIO Type 3	FIO Type 4
61	76,85.1,85.1.68+,85.2,85.3	980-ATC,2070	980-ATC,2070	980 ATC	2070-2A,2070-2E		
65	76,85.1,85.1.68+,85.2,85.3	980-ATC,2070	980-ATC,2070	980 ATC	2070-2A,2070-2E		
76	76,85.1,85.1.68+,85.2,85.3	980-ATC,2070	980-ATC,2070,Commander	980 ATC	2070-2A,2070-2E	2070-2A,2070-2E	NEMA-TS2
85.1	85.2,85.3	980-ATC,2070,Commander	980-ATC,2070,Commander	980 ATC	2070-2A,2070-2E	2070-2A,2070-2E	NEMA-TS2
85.1b	85.2,85.3	980-ATC,2070,Commander	980-ATC,2070,Commander	980 ATC	2070-2A,2070-2E	2070-2A,2070-2E	NEMA-TS2
85.168+	85.2,85.3	980-ATC,2070,Commander	980-ATC,2070,Commander	980 ATC	2070-2A,2070-2E	2070-2A,2070-2E	NEMA-TS2
85.2	85.3	980-ATC,2070,Commander	980-ATC,2070,Commander	980 ATC	2070-2A,2070-2E	2070-2A,2070-2E	NEMA-TS2

Defaulted in ATMS due to conversion utility related constraints the Types are 980ATC and 2070

FIO Types
2070-2A,2070-2E
2070-8
NEMA-TS2
980-ATC
970-ATC
NEMA-TS1

Select the Conversion tool option. You can convert using the same Station ID number or you can create a new controller (setting the controller type that you want to convert to).

**Please note that if you use a new Station ID that both databases must be in the Controller “Offline Table” prior to conversion.**

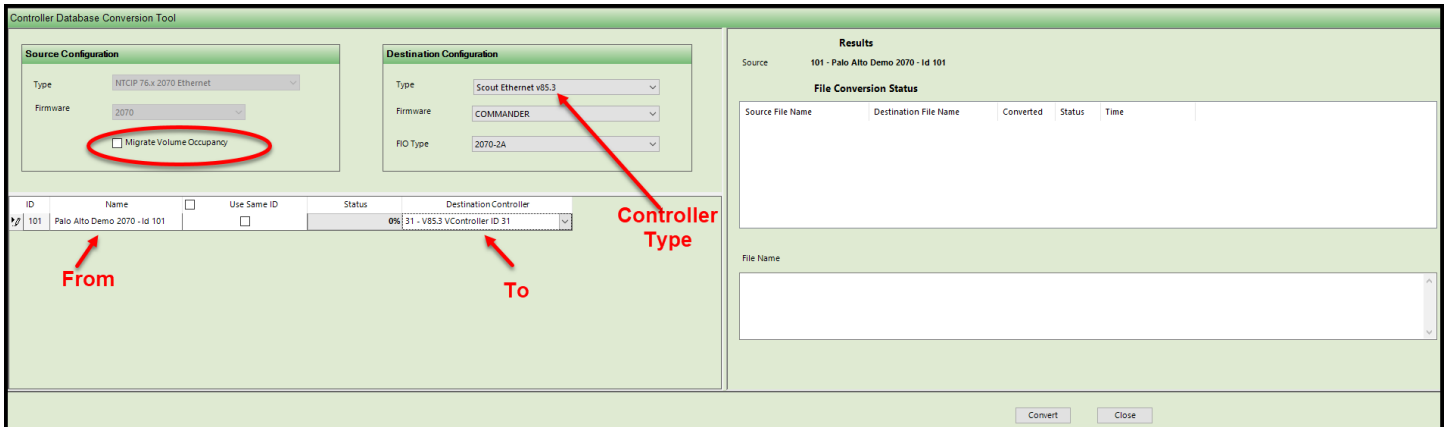
The screens shown below, will outline the conversion process. Considerable work was done, beginning with ATMS 2.11 to achieve a seamless conversion with few exceptions. The conversion process will convert the controller’s data and database types (.std, .prm, etc.). In addition, any associated ATMS database data will be converted.

This example will convert a V76 controller to a V85.2 controller using a different Station ID.

<input type="radio"/>	5632	SCC v76 2070	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.123	123	E-NET-5123	NTCIP 76x 2070 Ethernet	
<input checked="" type="radio"/>	5633	SCC v76 ATC	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.124	124	E-NET-5124	NTCIP 76x ATC Ethernet	<b>FROM</b>
<input type="radio"/>	5636	SCC -v85 commander	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.126	126	E-NET-5126	Scout Ethernet	
<input type="radio"/>	6652	SCC TR Master	<input type="checkbox"/>	<input type="checkbox"/>		1	E-NET-5001	ATMS Central TR Master	
<input type="radio"/>	9991	V76 ATC TEST for IO Logic	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.091	91	E-NET-5091	NTCIP 76x ATC Ethernet	
<input type="radio"/>	9993	V85 ATC V85-Scout Id 9993	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.093	93	E-NET-5093	Scout Ethernet	
<input checked="" type="radio"/>	15633	Converted V76 ID 5633 to V85.2 ID 15633	<input type="checkbox"/>	<input type="checkbox"/>	192.168.033.033	33	E-NET-5033	Scout Ethernet v85.2	<b>TO</b>

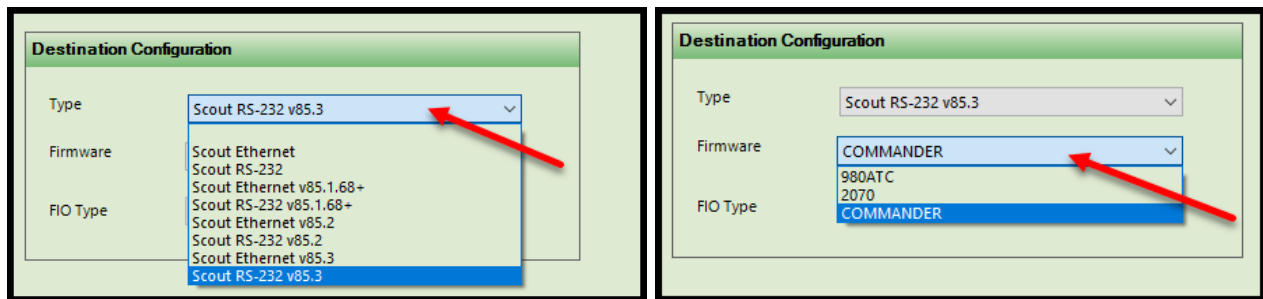
Below is the conversion screen. For this example, we will select ID 5633 (V76.x ATC) and convert it to a new Scout V85.2 database, that was created via the Create Definition selection, which was given ID 15633.

After selecting the controller, please enter all information. To convert databases properly, consider the following:



The **Source Configuration** section is displayed so that the user can verify the existing controller Type. The **Destination Configuration** section is used to select the new controller’s Type and Firmware.

The **CONTROLLER TYPE** is selected as the converted database type. The **FIRMWARE** selection may be modified if you are going between different Controller hardware (i.e. 980 ATC to Commander, etc.) A drop-down list for the new Controller Type as well as the controller Firmware (hardware) will be displayed, as shown below. The user should select both the Type and Firmware.



The **FROM** selection will point at the controller’s database ID that you want to convert from. Note: if you decide to select “**Use Same ID**” then *all* controller data and databases and associated ATMS database data will converted and stored using the existing controller ID that will be converted. Additionally, if you select “**Use Same ID**” then all archived databases will also be converted.

The **TO** selection will point to the new controller’s ID that you would like to convert to.

As of ATMS 2.12 the user can also migrate Detector Volume and Occupancy data to the converted database as shown circled above.

**Again, the user should note that both databases must be in the Controller “Offline Table” prior to conversion.**

**NOTE: It is the responsibility of the agency to ensure that ANY converted database is working as desired before field installation because non-NTCIP items will not be converted.**

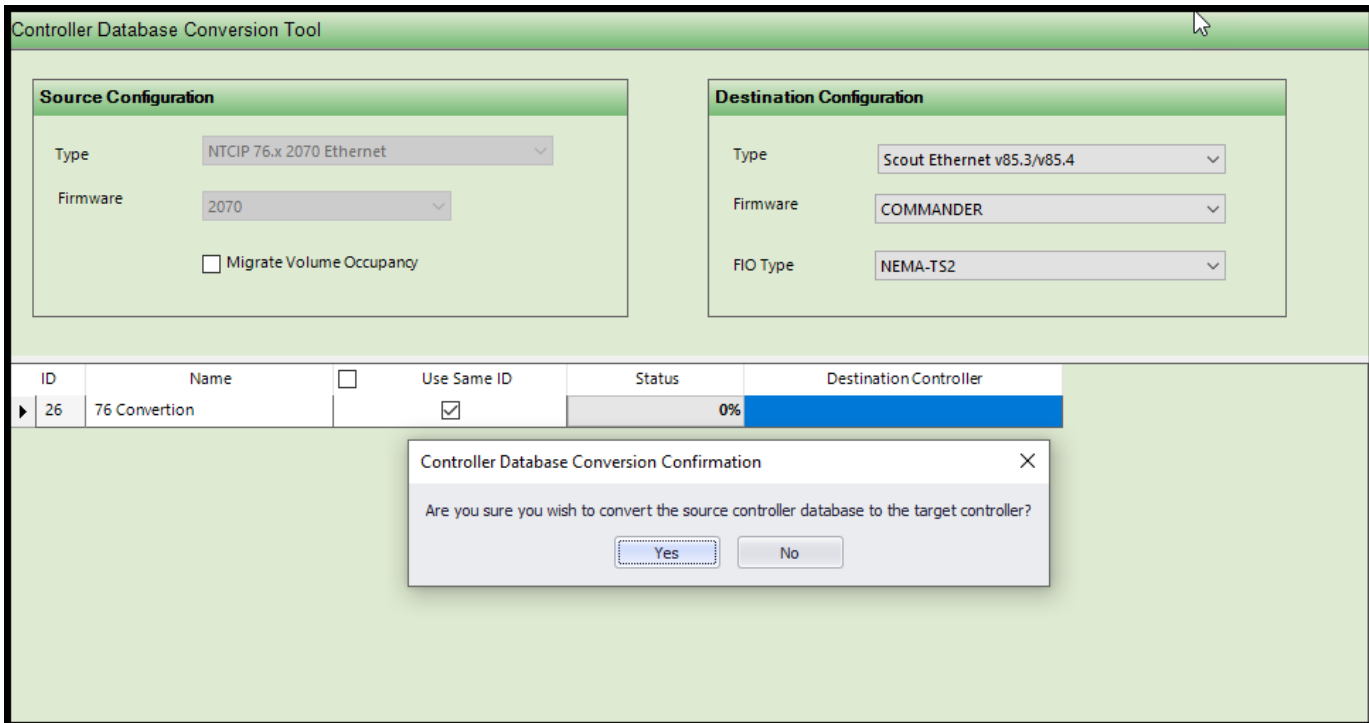
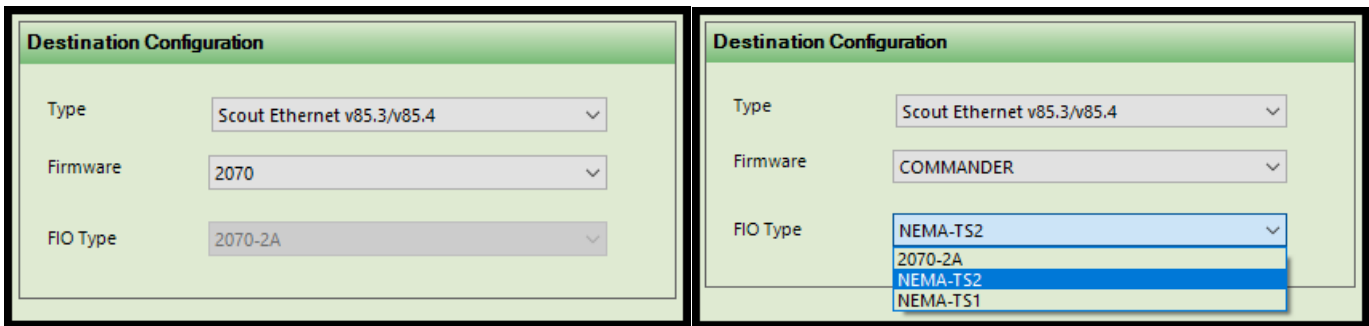
**For example, V61.x to V76.x conversions should be reviewed because there are some new features in V76.x that were not part of V61.x. Specifically, when converting to V76.x:**

**FYA overlaps are not converted because the parameters are programmed differently.**

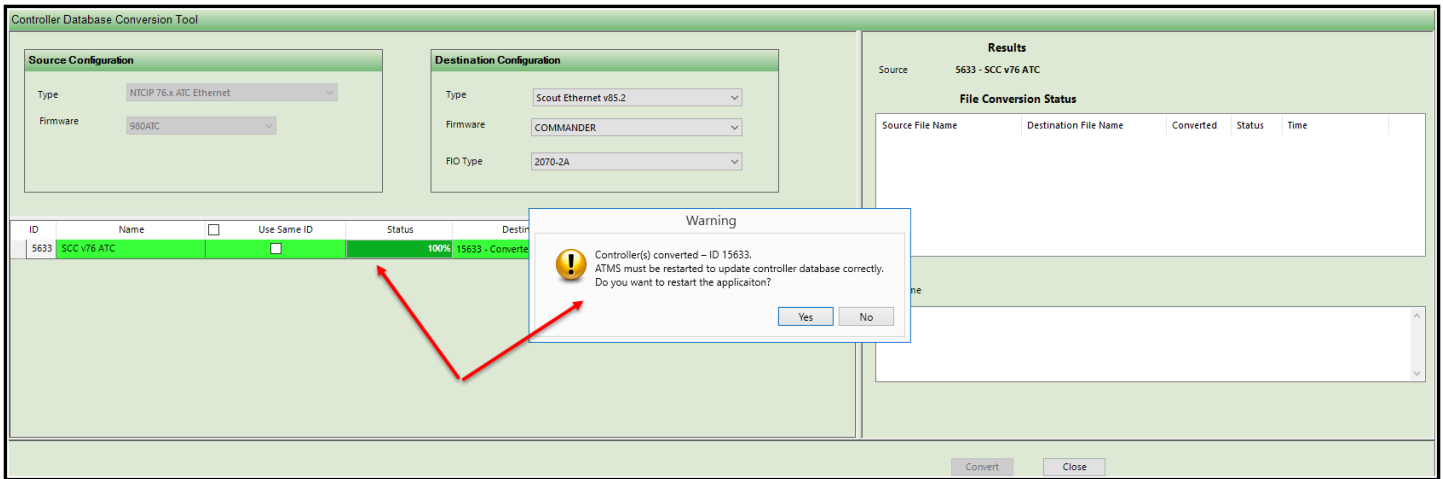
**Pattern Offset Mode (BegGrn/EndGrn) and V76 specific alarms and events must be reviewed.**

**Preemption parameters under the Advanced preemption timer menu such as EnterYellowChange, EnterRedChange, TrackYelChange and TrackRedClr must be programmed to a time other than 0.0 seconds (the default is 25.5 seconds).**

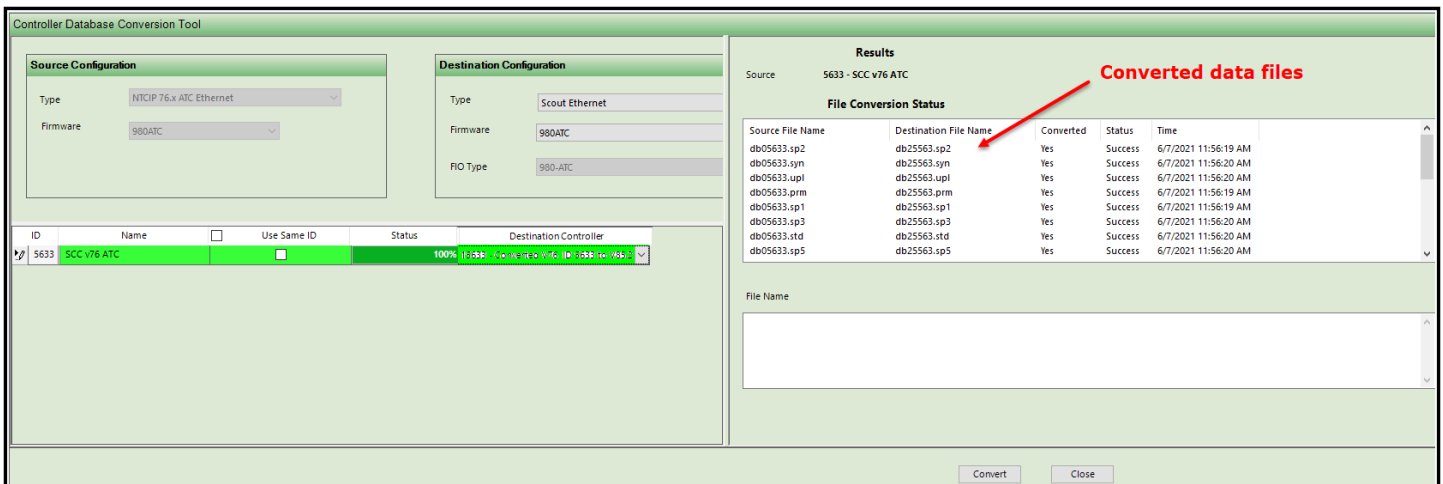
After hitting the “Convert” button, a confirmation screen will pop up.



The next screen will show that the process has been completed.



Select “Yes” to restart the ATMS Client for the Conversion process to complete. By hitting “No” you can select the green selection bar to review the conversion under the results section.

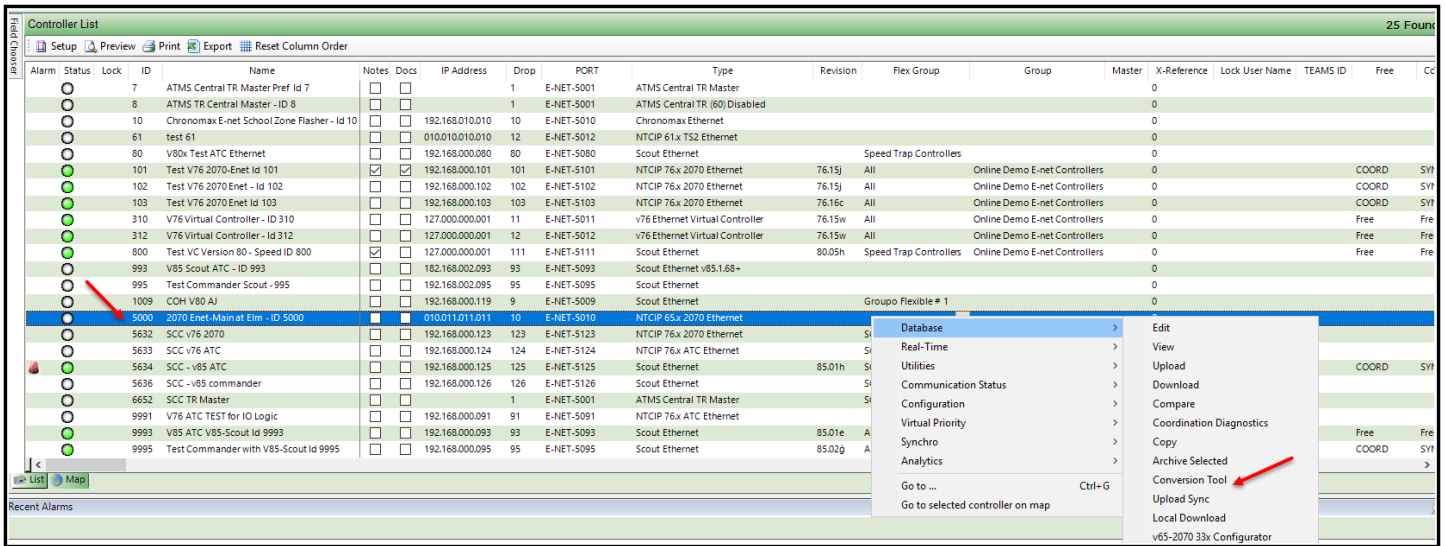


Once the converted data file list is reviewed, then you can close the ATMS Client to review the conversion data for the new controller.

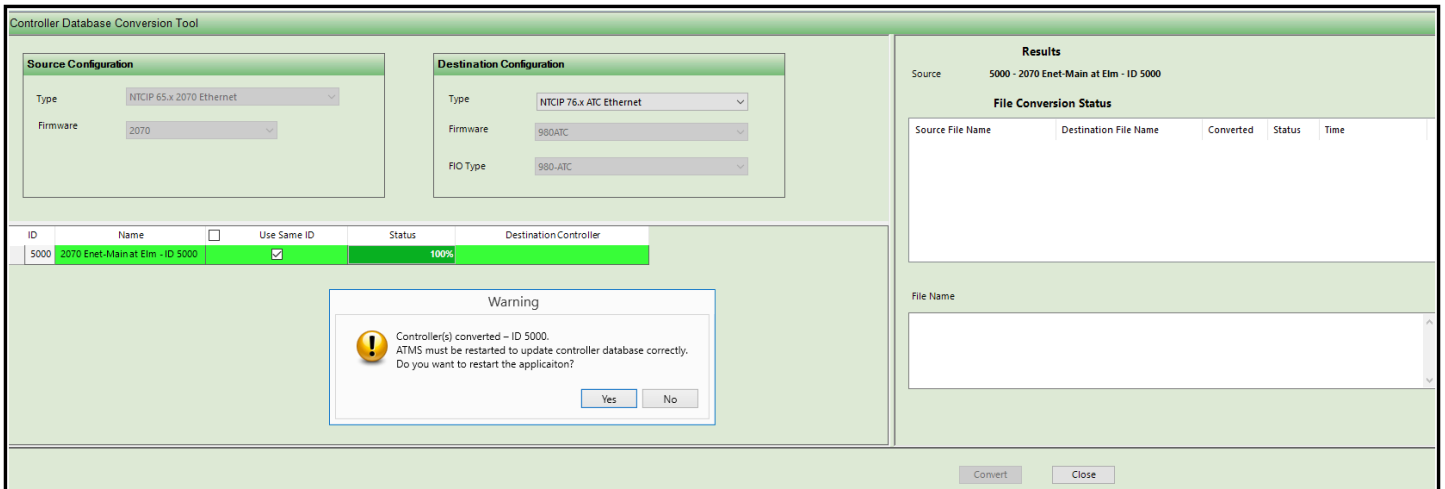
**NOTE:** The conversion tool has been enhanced starting in ATMS 2.12 to include:

- If the default drop-down selection is empty, it will prompt the user to make a proper selection
- Disable conversion into same destination ID and controller type multiple times
- Archive conversion failure handling (when regular databases converted successfully).

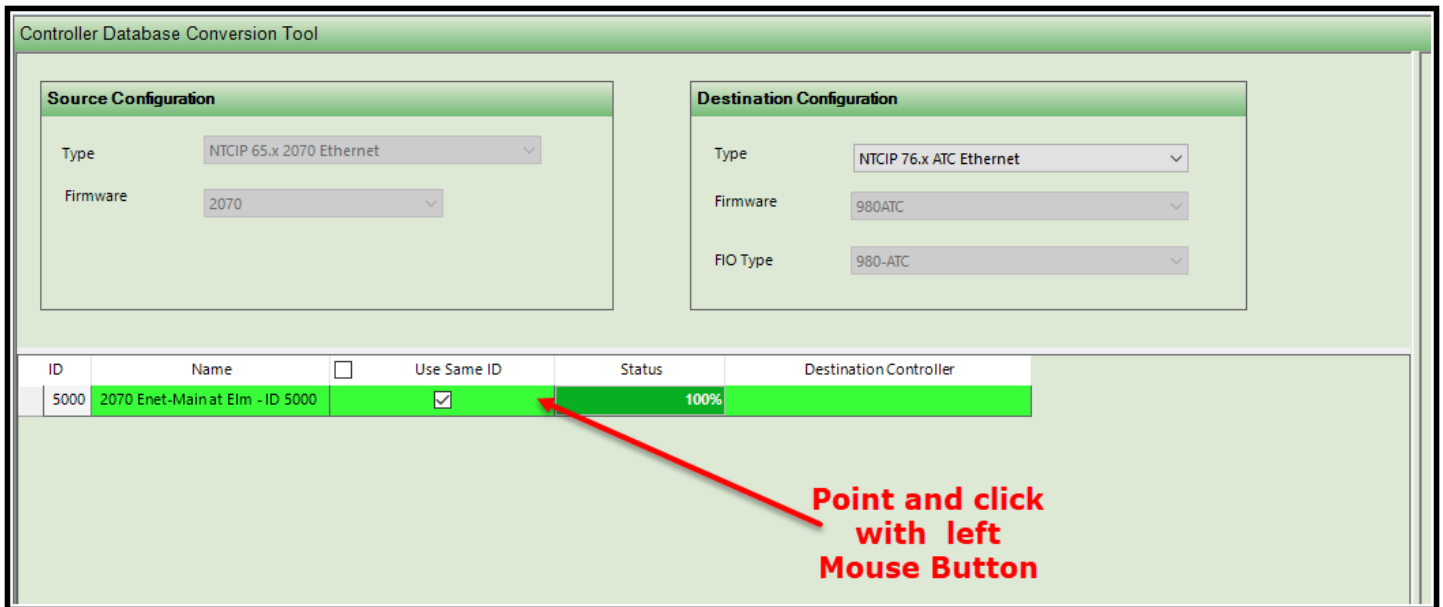
This next example will convert a V65.x database to a V76.x database using the same ID#. Id # 5000 is a V65.x database as shown below. Select it and then select the database Conversion Tool using the icon in the Action bar or right click selection as shown below.



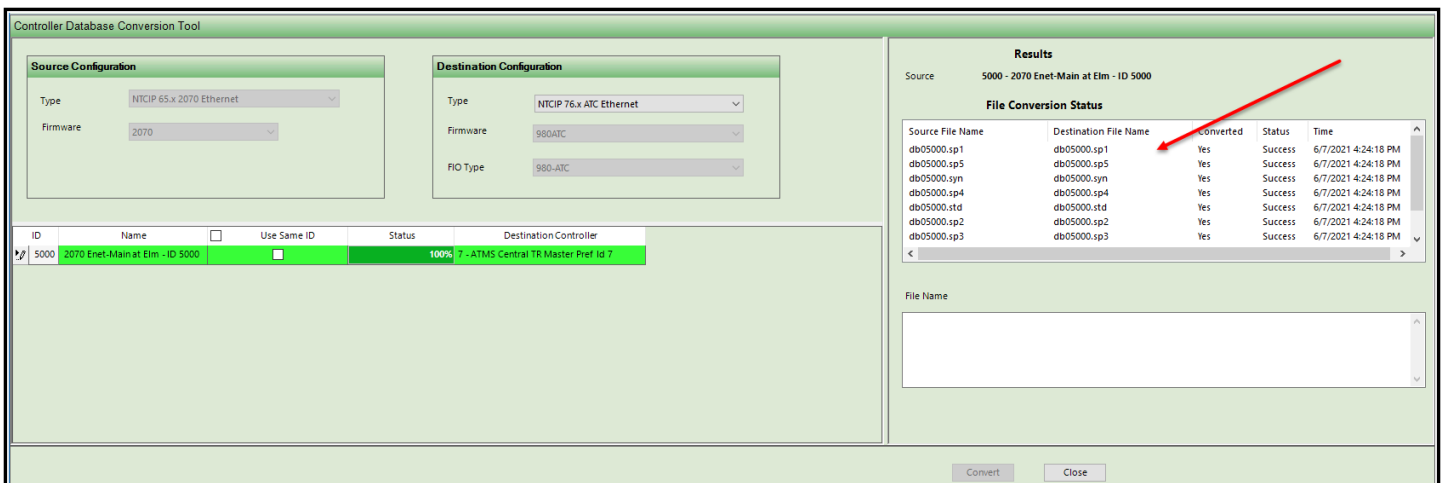
Set up the Destination configuration for the Type V76 and ensure that “Use Same ID” is checked. Hit the convert button and wait until the conversion is completed.



Select “No” so that we can see the conversion data. We will restart our ATMS client at a later time. To see the conversion data. Hover over the green bar with your mouse and left click mouse button.



The converted databases will appear under the Results area.



Close this window and restart the ATMS client to convert another. The controller type for ID 5000 will now be V76.

**Note: Bulk conversion using the Same ID option is supported as long as the Controller Type is the same. For example, you can select all your V76.x ATC Ethernet Controller Types and convert them to Scout V85.x Controller Types as long as all bulk controller types match.**

In this example, we will select two type Scout Ethernet (v85.1) controllers (ID 5634 and ID 9993) and convert them in bulk to Scout Ethernet v85.3 controllers. **Note: They will be converted using the same ID numbers and they must be offline in order to convert them.**



Alarm	Status	Lock	ID	Name	Notes	Docs	IP Address	Drop	PORT	Type
			5633	SCC v76 ATC			192.168.000.124	124	E-NET-5124	NTCIP 76.x ATC Ethernet
			5636	SCC -v85 commander			192.168.000.126	126	E-NET-5126	Scout Ethernet
			6652	SCC TR Master				1	E-NET-5001	ATMS Central TR Master
			9991	V76 ATC TEST for IO Logic			192.168.000.091	91	E-NET-5091	NTCIP 76.x ATC Ethernet
			15633	Converted V76 ID 5633 to V85.2 ID 15633			192.168.033.033	33	E-NET-5033	Scout Ethernet v85.2
			25563	Test 2			010.010.011.010	13	E-NET-5013	Scout Ethernet v85.2
			101	Test V76 2070-Enet Id 101	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.000.101	101	E-NET-5101	NTCIP 76.x 2070 Ethernet
			102	Test V76 2070 Enet - Id 102	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.102	102	E-NET-5102	NTCIP 76.x 2070 Ethernet
			103	Test V76 2070 Enet Id 103	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.103	60	E-NET-5060	NTCIP 76.x 2070 Ethernet
			310	V76 Virtual Controller - ID 310	<input type="checkbox"/>	<input type="checkbox"/>	127.000.000.001	11	E-NET-5011	v76 Ethernet Virtual Controller
			312	V76 Virtual Controller - Id 312	<input type="checkbox"/>	<input type="checkbox"/>	127.000.000.001	12	E-NET-5012	v76 Ethernet Virtual Controller
			800	Test VC Version 80 - Speed ID 800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	127.000.000.001	111	E-NET-5111	Scout Ethernet
			5634	SCC - v85 ATC	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.125	125	E-NET-5125	Scout Ethernet
			9993	V85 ATC V85-Scout Id 9993	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.093	93	E-NET-5093	Scout Ethernet
			9995	Test Commander with V85-Scout Id 9995	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.095	95	E-NET-5095	Scout Ethernet v85.2

Select both intersections and then run the Conversion Tool.

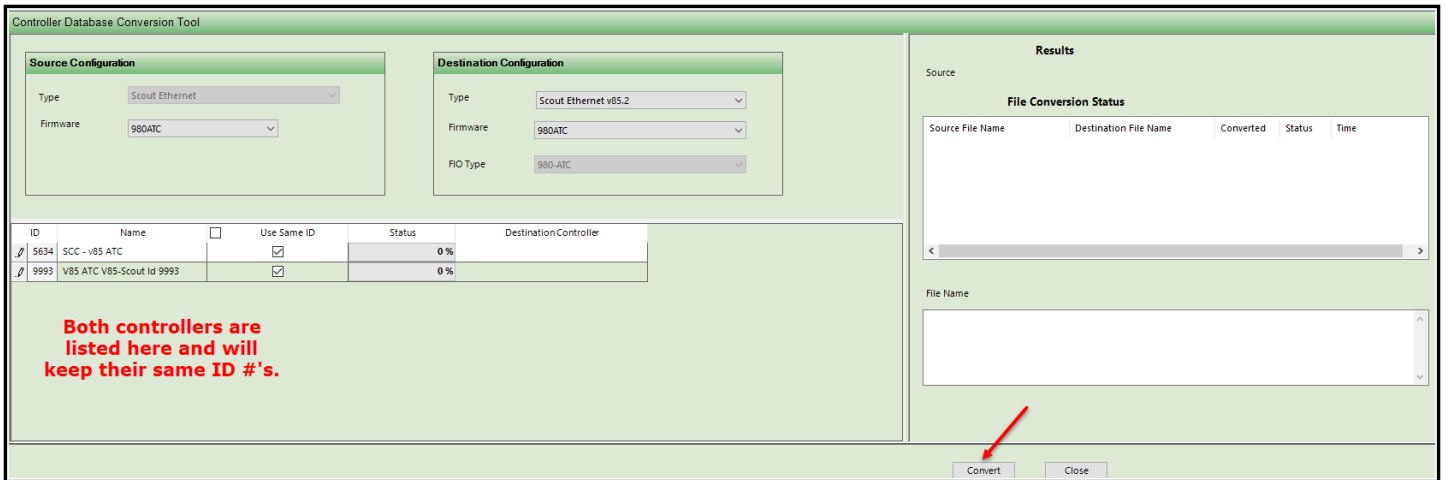
Alarm	Status	Lock	ID	Name	Notes	Docs	IP Address	Drop	PORT	Type	Revision	Flex Group	Group	Master	X-Reference	Lock
			5633	SCC v76 ATC	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.124	124	E-NET-5124	NTCIP 76.x ATC Ethernet		SCCTR controllers			0	
			5636	SCC -v85 commander	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.126	126	E-NET-5126	Scout Ethernet		SCCTR controllers			0	
			6652	SCC TR Master	<input type="checkbox"/>	<input type="checkbox"/>		1	E-NET-5001	ATMS Central TR Master		SCCTR controllers			0	
			9991	V76 ATC TEST for IO Logic	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.091	91	E-NET-5091	NTCIP 76.x ATC Ethernet					0	
			15633	Converted V76 ID 5633 to V85.2 ID 15633	<input type="checkbox"/>	<input type="checkbox"/>	192.168.033.033	33	E-NET-5033	Scout Ethernet v85.2					0	
			25563	Test 2	<input type="checkbox"/>	<input type="checkbox"/>	010.010.011.010	13	E-NET-5013	Scout Ethernet v85.2					0	
			101	Test V76 2070-Enet Id 101	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.000.101	101	E-NET-5101	NTCIP 76.x 2070 Ethernet	76.15j	All	Online Demo E-net Controllers		0	
			102	Test V76 2070 Enet - Id 102	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.102	102	E-NET-5102	NTCIP 76.x 2070 Ethernet	76.15j	All	Online Demo E-net Controllers		0	
			103	Test V76 2070 Enet Id 103	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.103	60	E-NET-5060	NTCIP 76.x 2070 Ethernet	76.16c	All	Online Demo E-net Controllers		0	
			310	V76 Virtual Controller - ID 310	<input type="checkbox"/>	<input type="checkbox"/>	127.000.000.001	11	E-NET-5011	v76 Ethernet Virtual Controller	76.15w	All	Online Demo E-net Controllers		0	
			312	V76 Virtual Controller - Id 312	<input type="checkbox"/>	<input type="checkbox"/>	127.000.000.001	12	E-NET-5012	v76 Ethernet Virtual Controller	76.15w	All	Online Demo E-net Controllers		0	
			800	Test VC Version 80 - Speed ID 800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	127.000.000.001	111	E-NET-5111	Scout Ethernet	80.05h	Speed Trap Controllers	Online Demo E-net Controllers		0	
			5634	SCC - v85 ATC	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.125	125	E-NET-5125	Scout Ethernet		SCCTR controllers	Online Demo E-net Controllers		0	
			9993	V85 ATC V85-Scout Id 9993	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.093	93	E-NET-5093	Scout Ethernet					0	
			9995	Test Commander with V85-Scout Id 9995	<input type="checkbox"/>	<input type="checkbox"/>	192.168.000.095	95	E-NET-5095	Scout Ethernet v85.2					0	

Bulk Convert ID 5634 and ID 9993

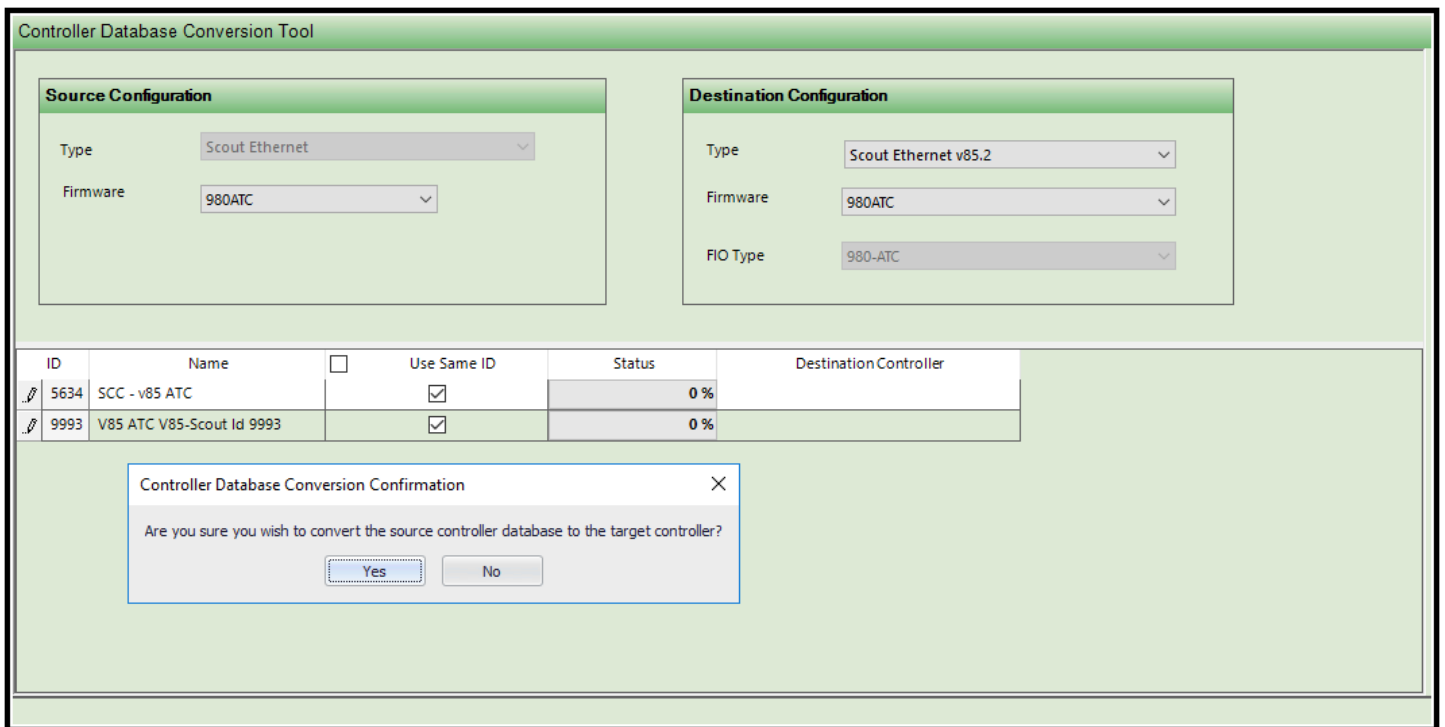
- Database >
- Real-Time >
- Utilities >
- Communication Status >
- Configuration >
- Virtual Priority >
- Synchro >
- Analytics >
- Go to ... Ctrl+G
- Go to selected controller on map

- Edit
- View
- Upload
- Download
- Compare
- Coordination Diagnostics
- Conversion Tool
- Upload Sync
- Local Download

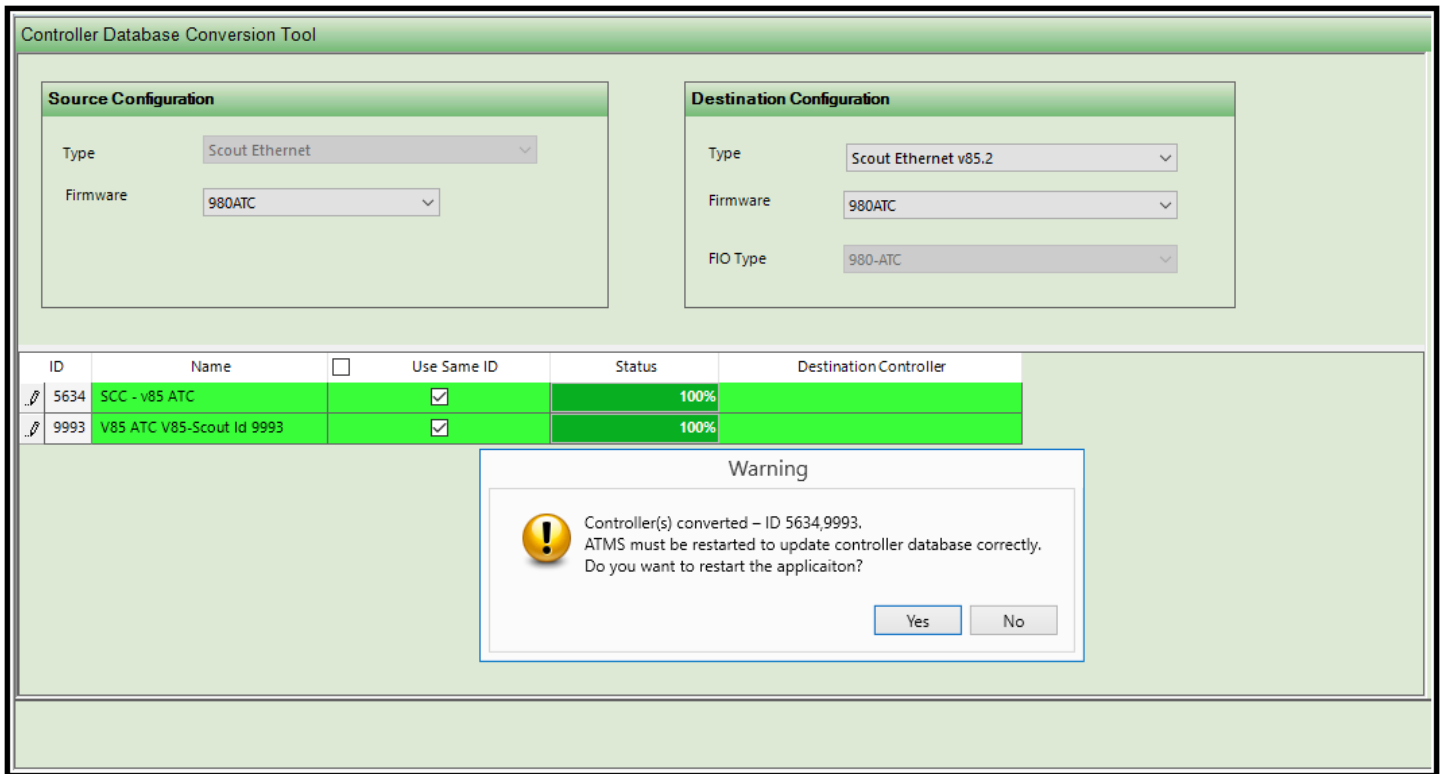
The screen below shows the conversion listing both controllers.



Hit the convert Button to convert both controllers. The following screen will be displayed.



Select Yes to complete the conversion of both controllers.



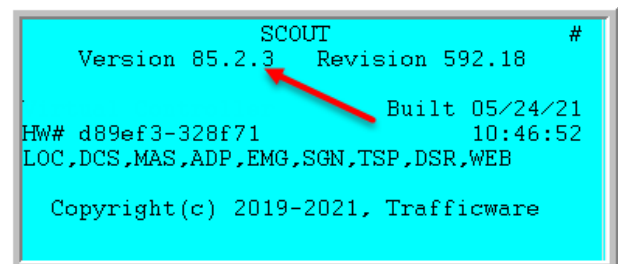
Restart the ATMS Client to complete the bulk conversion.

**NOTE:** It is the responsibility of the agency to ensure that ANY converted database is working as desired before field installation and operation. The user **MUST** verify that the converted database type matches the controller version in the field prior to any field uploads or downloads. Unpredictable results will occur if the agency fails to verify that the physical controller type and ATMS type match.

**ATMS List view**

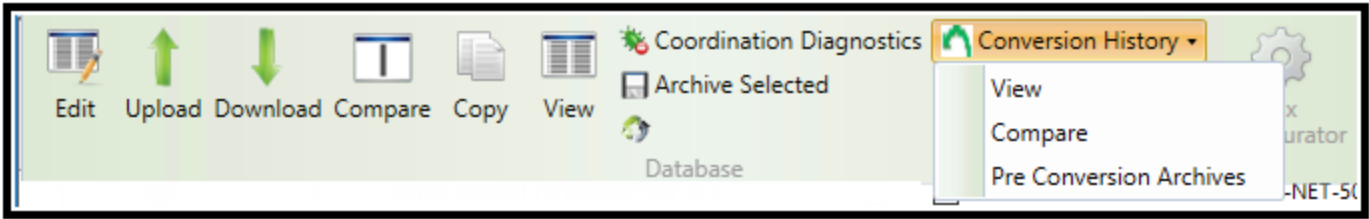
Alarm	Status	Lock	ID	Name	Type	IP Address	Drop	PORT
			50	M50 V76 2070 E-net - ID 50	NTCIP 76x 2070 Ethernet	192.168.000.050	50	E-NET-5050
			101	Test V76 2070-Enet Id 101	NTCIP 76x 2070 Ethernet	192.168.000.101	101	E-NET-5101
			102	Test V76 2070 Enet - Id 102	NTCIP 76x 2070 Ethernet	192.168.000.102	102	E-NET-5102
			103	Test V76 2070 Enet Id 103	NTCIP 76x 2070 Ethernet	192.168.000.103	60	E-NET-5060
			310	V76 Virtual Controller - ID 310	v76 Ethernet Virtual Controller	127.000.000.001	11	E-NET-5011
			312	V76 Virtual Controller - Id 312	v76 Ethernet Virtual Controller	127.000.000.001	12	E-NET-5012
			800	Test VC Version 80 - Speed ID 800	Scout Ethernet	127.000.000.001	111	E-NET-5111
			5634	SCC - v85 ATC	Scout Ethernet v85.2	192.168.000.125	125	E-NET-5125
			9993	V85 ATC V85-Scout Id 9993	Scout Ethernet v85.2	192.168.000.093	93	E-NET-5093
			9995	Test Commander with V85-Scout Id 9995	Scout Ethernet v85.2	192.168.000.095	95	E-NET-5095

**Controller type**



**Note:** Once all conversions have been completed and verified remove the controllers from the offline list. Then initiate an Admin Update.

## 5.2.10 Conversion History



ATMS provides this utility to monitor any conversions. This selection also includes the ability to archive the original databases if needed. **Note: Conversion history is available only if you use the same ID.**

Selections include:

- 1) **View** which will allow you to view all converted data.

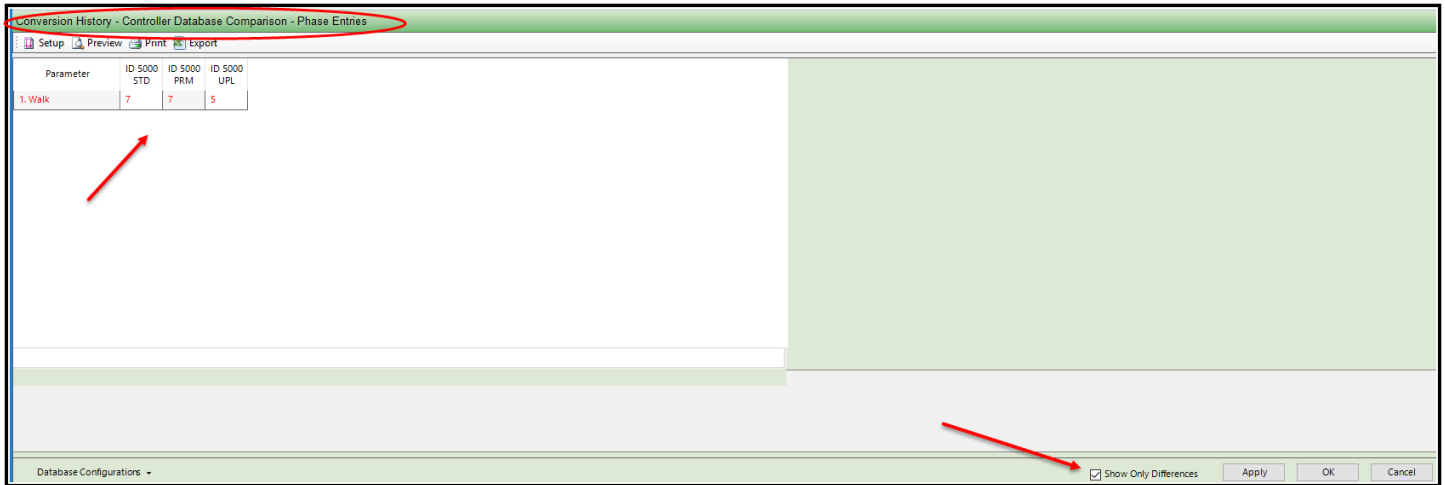
The screenshot shows a window titled 'Conversion History - Controller Database Editor - Channels Assignments'. The window contains a table with the following data:

Channel	PH/OLP #	Type	Flash	Flash 1-2 Hertz	Dimming Green
Channel 01	7	OLP	DRK		
Channel 02	6	VEH	DRK		
Channel 03	2	VEH	DRK		
Channel 04	3	PED	DRK		
Channel 05	3	OLP	YEL		
Channel 06	2	OLP	YEL		
Channel 07	6	OLP	Red		
Channel 08	3	OLP	YEL		
Channel 09	1	OLP	YEL		
Channel 10	1	PED	DRK		
Channel 11	5	OLP	DRK		
Channel 12	4	VEH	Red		
Channel 13	1	PED	DRK		

Below the table, there is a 'Table 1' label and a navigation bar with tabs: 'Adv Warning', 'Auto Flash', 'Channels Assignments', 'Channels Assignments Plus', 'MMU Permissives', 'MMU to Controller Mapping', 'Overlap Parms', 'Overlap Programming', 'Overlap+', 'Phase Entries', 'Phase Times+ Alt', 'Ring Input Map', 'Ring Sequences', 'SDLC Devices', 'Temperature Alert', 'TOD Parameters', 'Unit Parms', 'Unit Parms FYA'. A red arrow points to the 'Channels Assignments' tab. At the bottom, there is a 'Config' dropdown set to 'Standard', a 'Filter' dropdown set to 'Controller', and a 'Category Display' dropdown set to 'Full Name'.

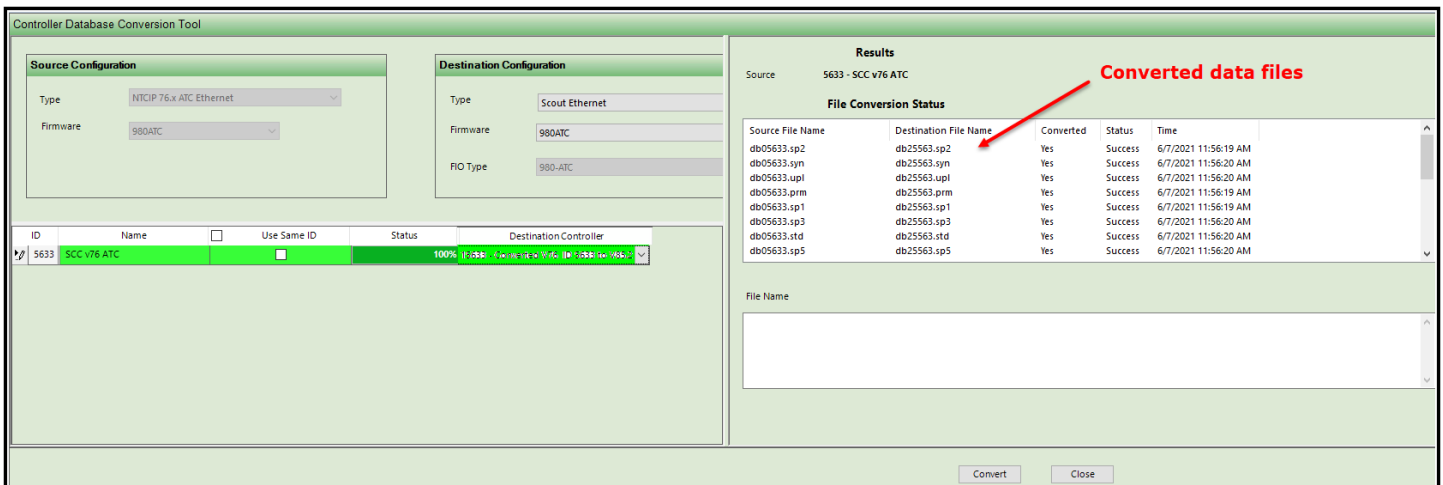
You can select the database that you want to review using the “Config: selection.

2) **Compare** will compare the converted database data.

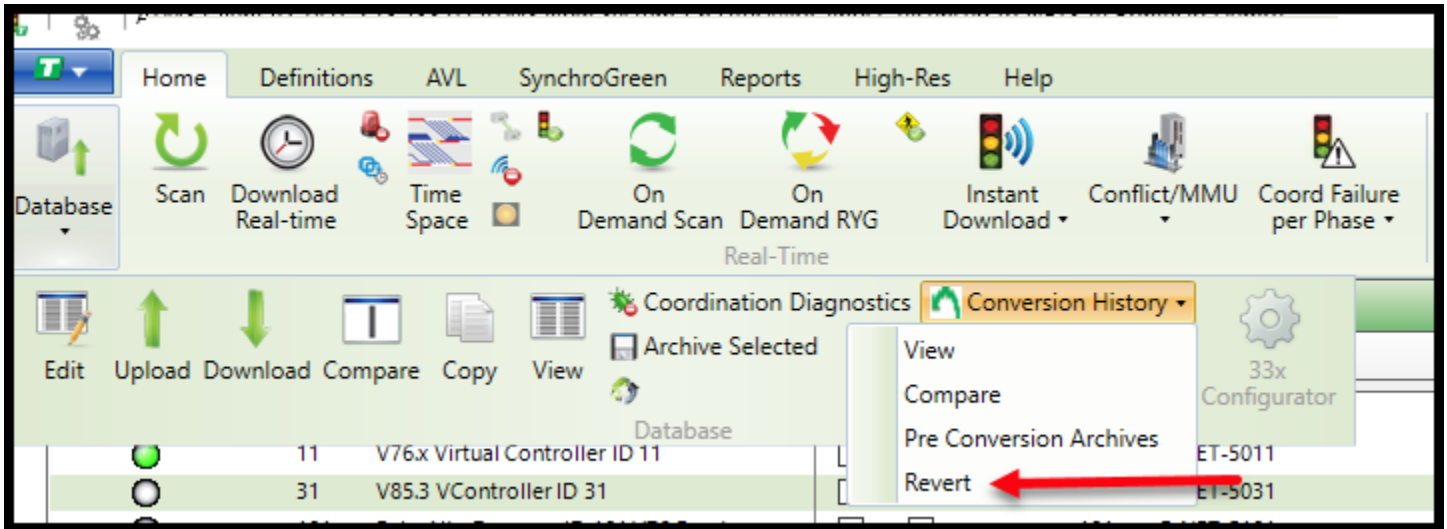


3) **Pre Conversion Archives** will list any existing archived databases prior to conversion. Note: Please contact ATMS support if you need to restore an archived database using its original controller type.

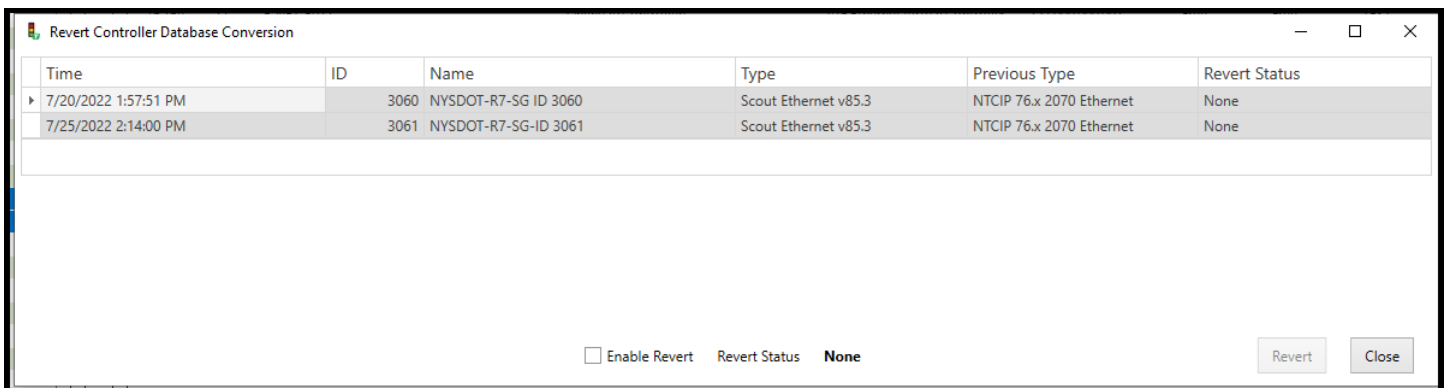
If you want to review the converted data file list, you can select the controller and select the **Database-> Conversion Tool option**. Then you can choose the **Green** selection bar to review all conversions under the results section.



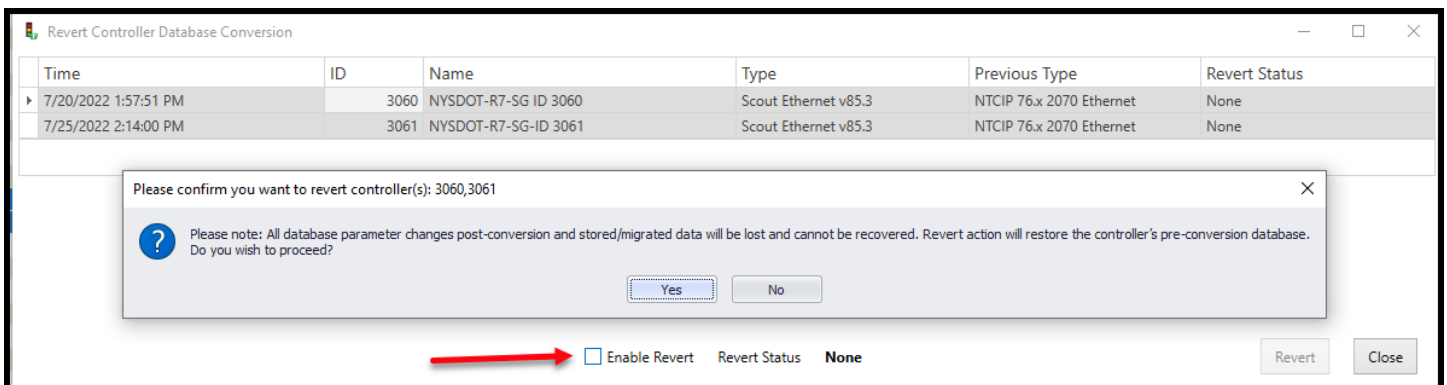
In addition, a Revert tool was added to the Conversion History section, to revert back to the original Controller type and its original database. One or multiple controllers can also be selected.



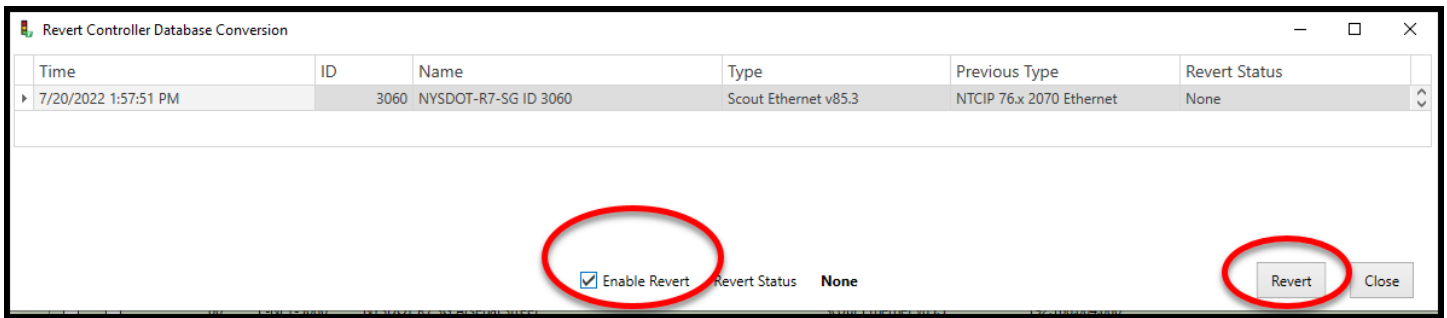
When **Revert** is selected, the following screen will be displayed.



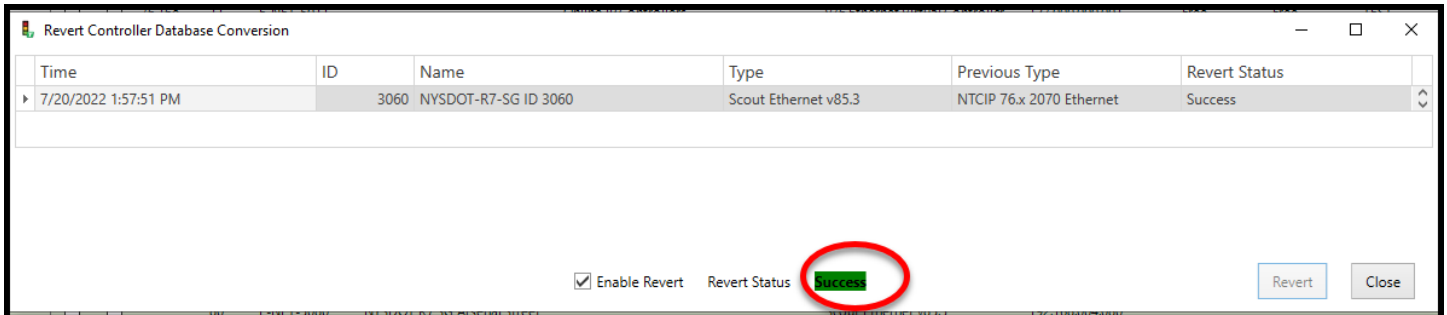
The list shows to previous type of controller and its reversion status. Check the Enable Revert Box and a Confirmation box will come up to warn the user that any post-conversion data that was entered by the user will be lost.



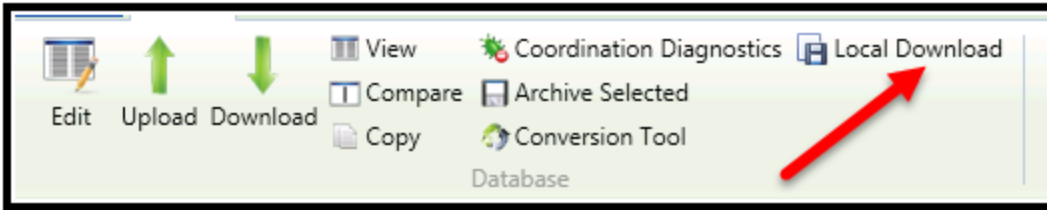
If **Yes** is selected, then the Enable Revert checkbox will be checked and the Revert Key will be accessible.



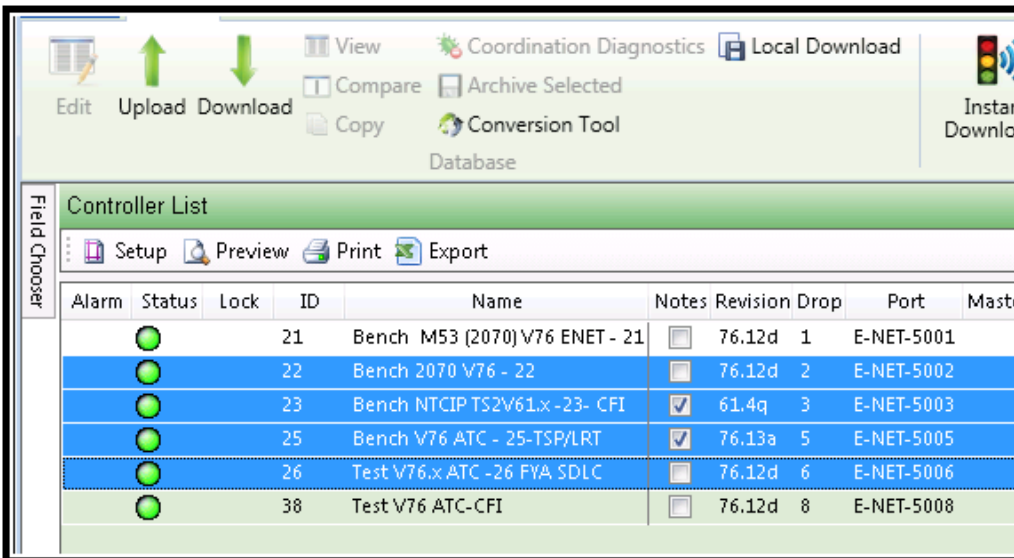
Selecting Revert will revert controller to its original type and database. A Green Success box will appear next to Revert Status.



## 5.2.11 Local Download

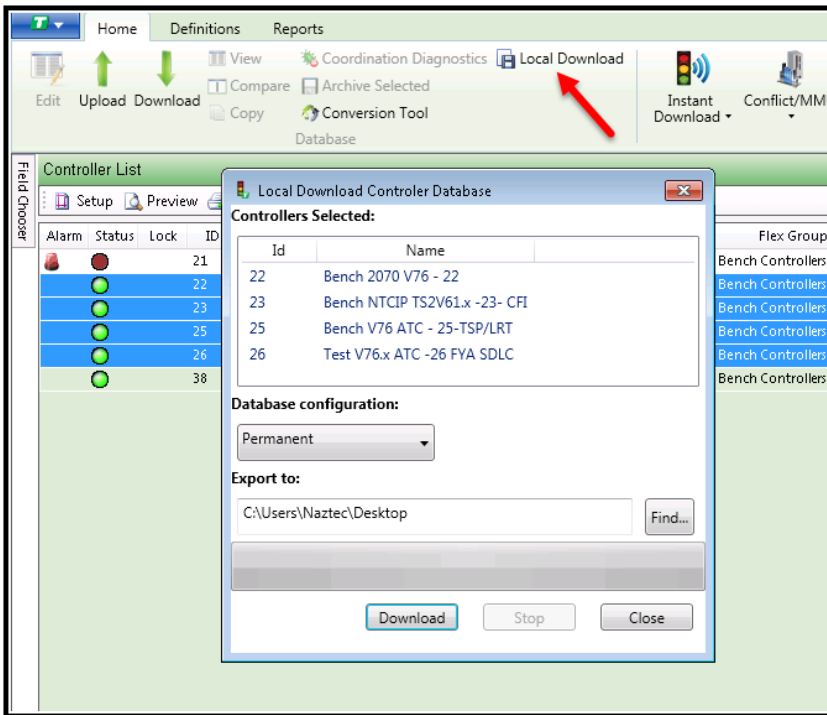


Local Download allows the user to copy selected databases to a directory so that they can e-mail it to their Cubic | Trafficware representative for review. First select controllers on the overview screen as shown below:

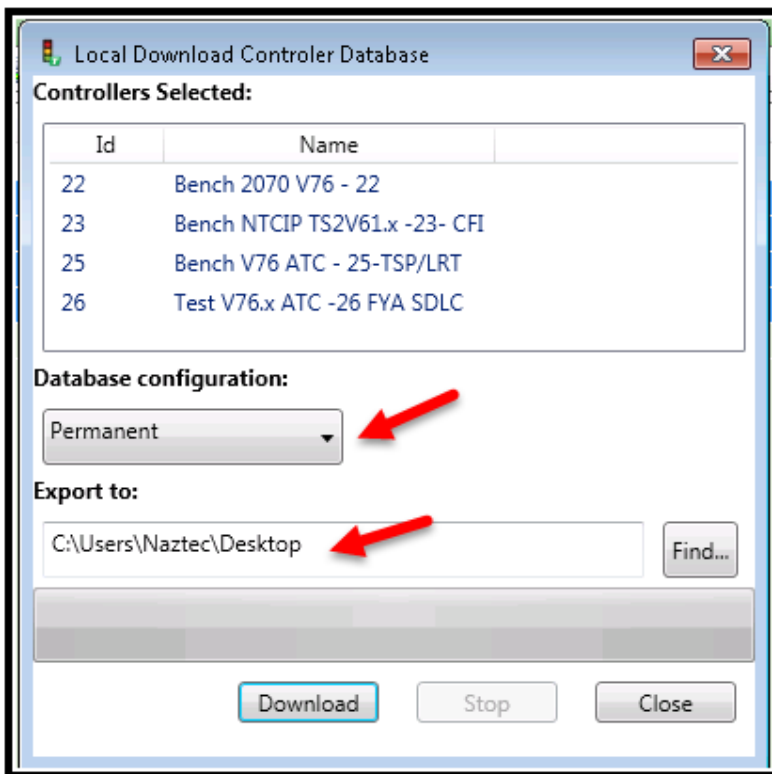


Next select Local Download icon and the following screen will come up.

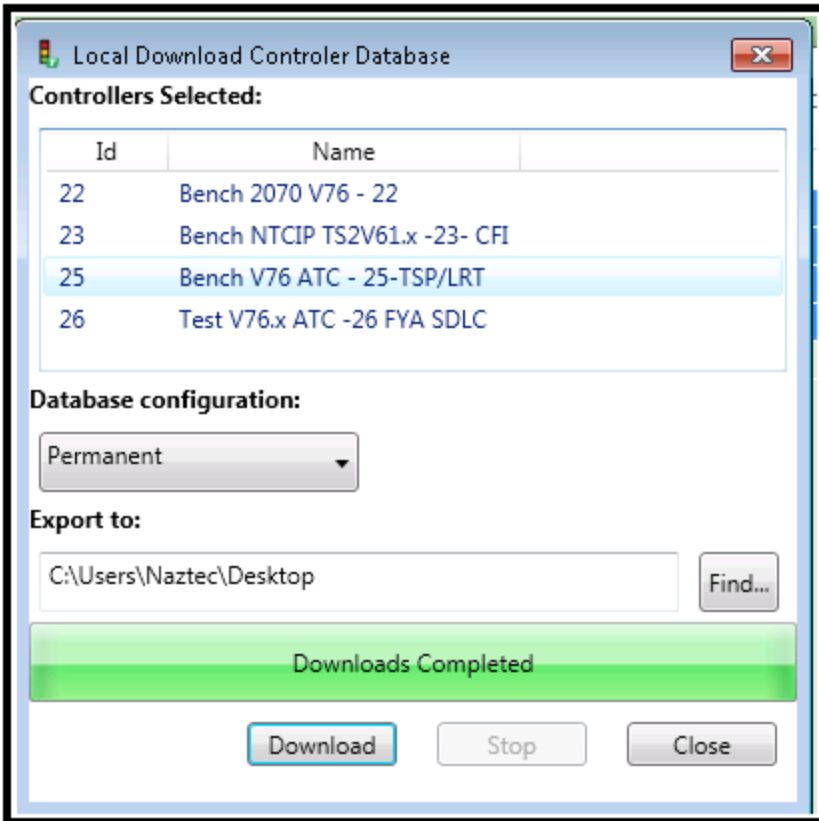




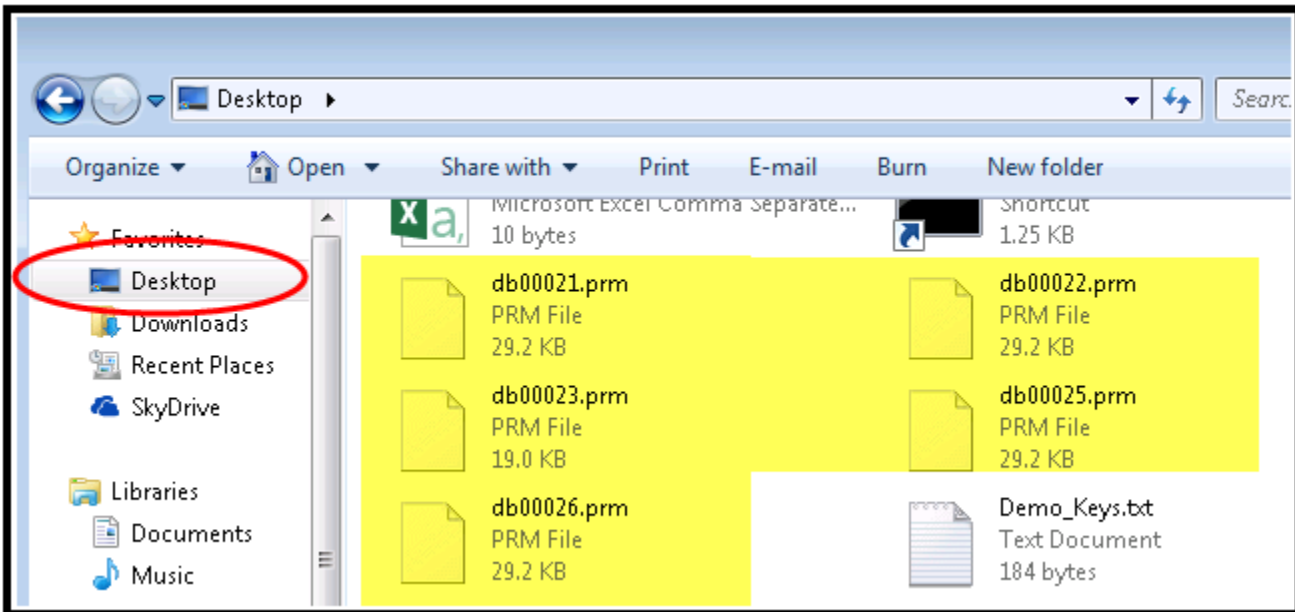
You can next select which database you would like to save and to which directory you would like to save it to.



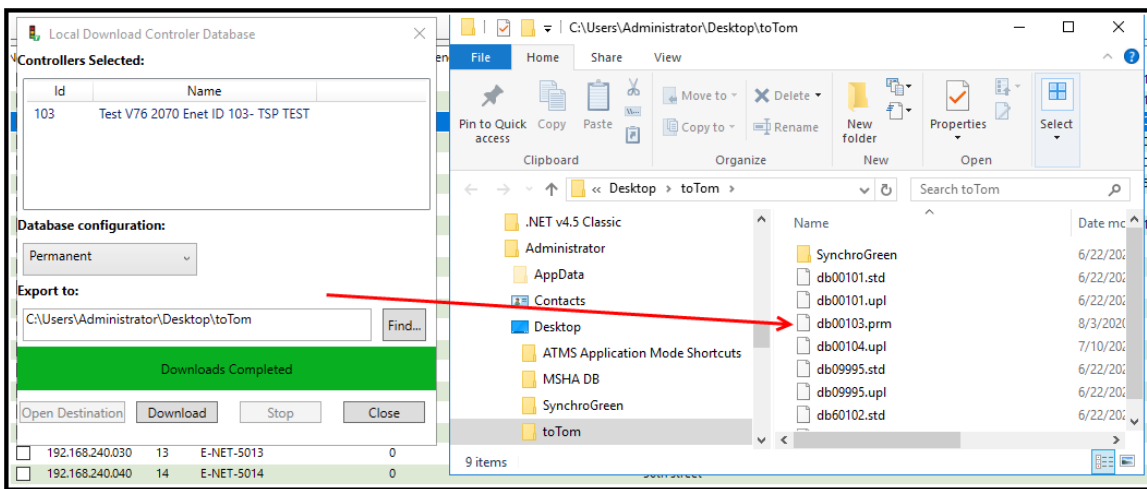
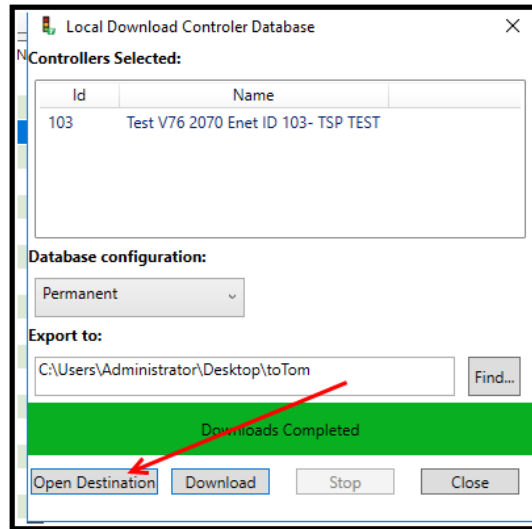
Selecting download will copy the databases to the directory that you select. to the directory that was selected. The following screen is displayed when the download is completed.



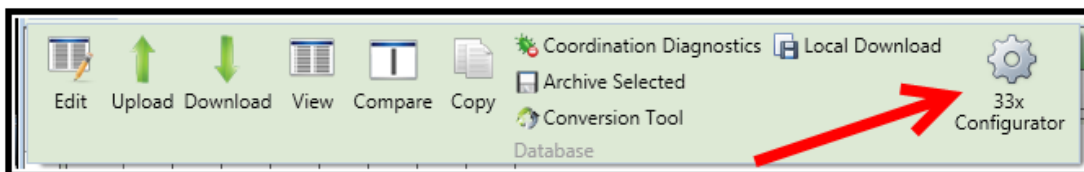
The files will be located in the directory folder as shown below:



As of ATMS 2.10.1 the local download has added an “Open Destination” selection button. This selection allows the user to access the folder that they have exported heir file(s) to directly.



## 5.2.12 33x Configurator



This feature is only available for two Controller types; NTCIP v65.x 2070 Ethernet or NTCIP v65.x 2070 RS232. It is intended for those agencies that utilize Model 330, 332, or 336 cabinets. It is a user friendly way to view and/or edit the 2070-2A input Mapping tab as shown below.

Controller Database Editor - User Input Map

Preview Print Export

Field Chooser

Pin	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Pin 1	2	16	8	22	3	17	9	23
Pin 2	6	20	12	26	198	199	181	189
Pin 3	15	1	21	7	27	13	28	14
Pin 4	189	189	189	189	4	18	10	24
Pin 5	130	134	132	136	200	201	202	203
Pin 6	189	5	19	11	25	178	208	207
Pin 7	192	193	194	195	196	197	189	189
Pin 8	189	189	189	189	189	189	189	189

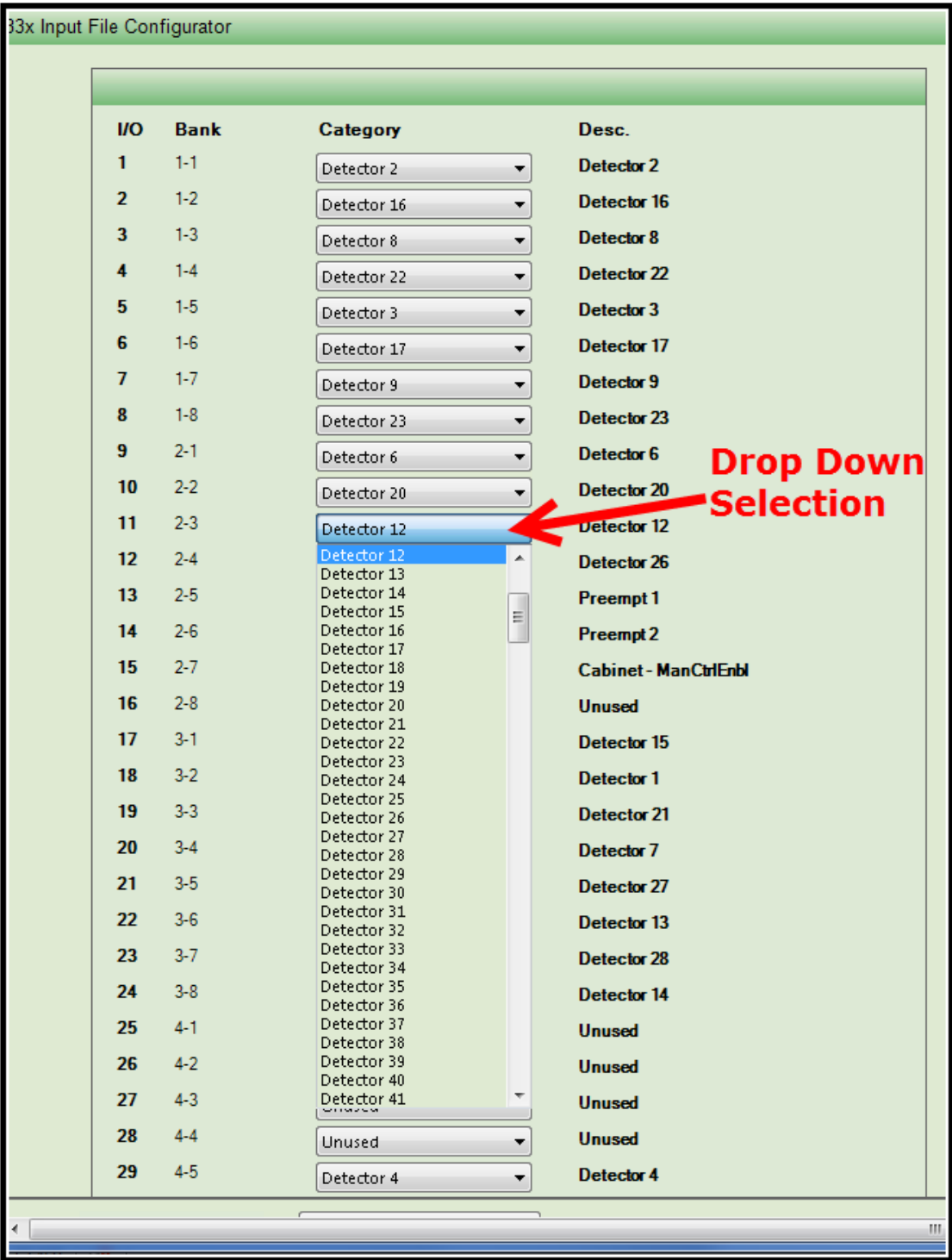
**2070-2A Input Mapping**

Table 1

IO Logic / User Input D Map / **User Input Map** / User Output D Map / User Output Map

Database Configuration: Standard Filter: I/O

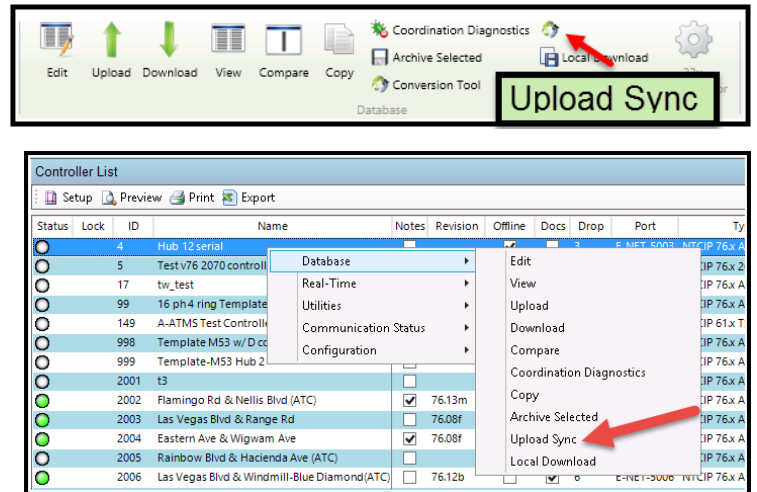
The user will select the 33x Configurator and the following screen will be displayed.



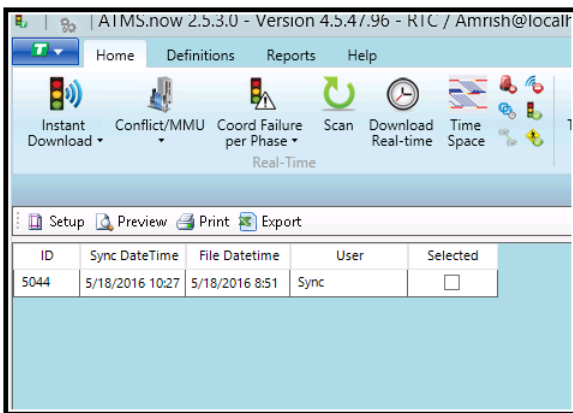
The user is allowed to select via a drop down list the specific **input** that is needed for any of the 64 inputs that are allowed via their cabinet type. Simply selecting the function will remap it once the database is saved and downloaded to the controller. Please note that I/O is latched and if the user changes the mapping, then the controller will need to be powered/OFF then ON (physically or via the Run-Timer) to latch the new mapping.

## 5.2.13 Upload Sync

Upload Sync has been added for those agencies that utilize StreetSync and want to copy their upload database to the permanent database and create a date/timestamped Archive of this database. After performing sync operation in StreetSync you will be notified that ATMS has some upload files that have been modified in the field via ATMS alarm number 268 being reported. Once this alarm has been reported, the user is allowed to right-click and select Database-> Upload Sync.



Next a screen will be displayed of all controllers that have been modified since the last sync. Specifically, these controllers have been modified in the field and have been uploaded by a StreetSync user and they have a later date/time stamp than the permanent that resides on ATMS.



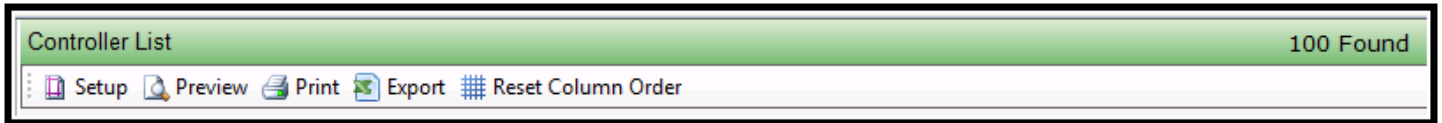
Selecting the controllers that you want to update and hitting the Sync button will copy the synced Upload file to the Permanent file and create an Archive file.



## 5.2.14 Overview Screen and Detail Pane Toolbars

A toolbar above the overview screen is provided to the user to allow them to export the data shown on the pane to Excel or a printer. The items on the toolbar will be appropriate to what data is displayed.

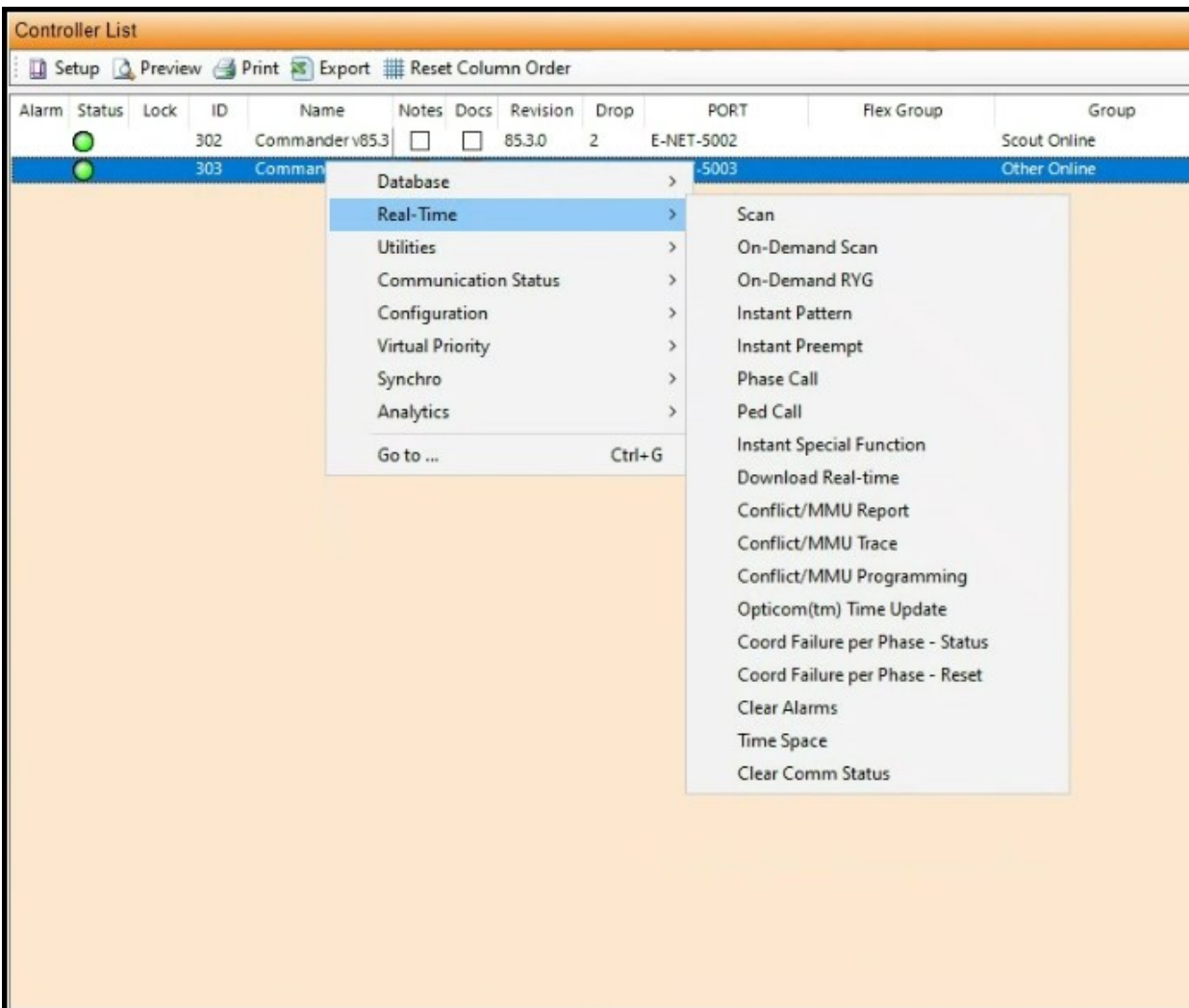
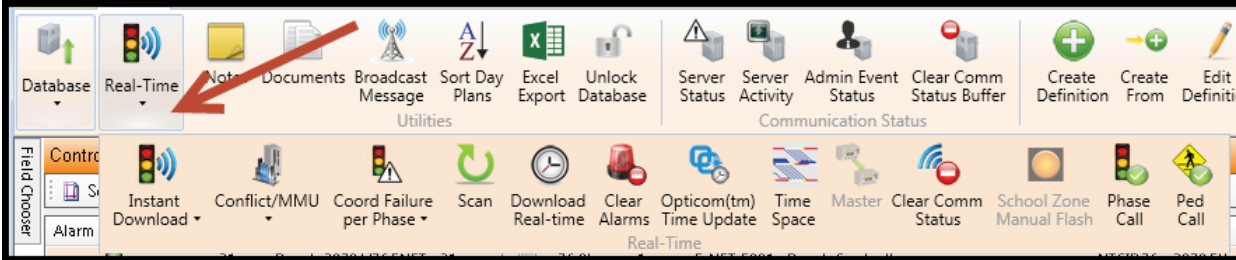
Below is the Overview toolbar followed by the Detail pane toolbar.



### 5.3 Real-Time

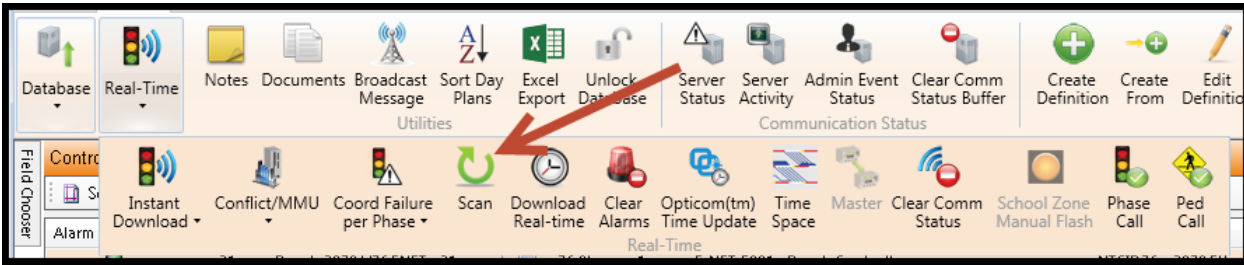
The *Actions* under the *Real-Time* functions offer the ability to view and apply intersection status and conditions directly with the field. Examples of this are view real-time status screens called “Scan Screens”, downloading manual preempt calls or patterns, or implementing additional levels of system control.

Some *Real-Time Actions* can be programmed to be automatically performed in the *Scheduler* (discussed in Chapter 6).





### 5.3.1 Scan Screens

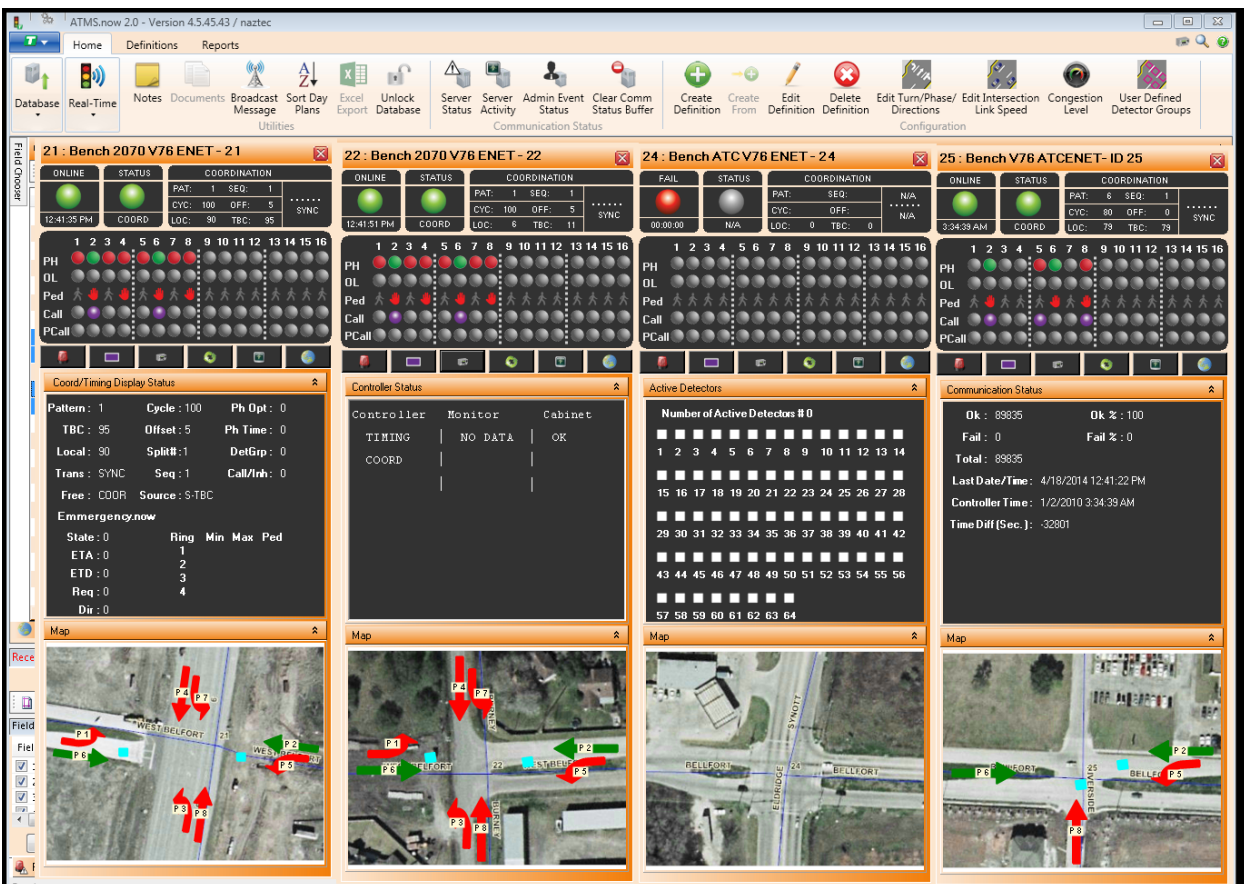


*Scan Screens* are used to display real-time status from one or more intersections. They depend on the agency setting up continuous Full status or GYR polling via the scheduler. The refresh rate, or real-time accuracy of these displays is dependent on the speed of communications provided and the number of simultaneously competing higher priority requests such as upload or download. The **ATMS Administrator** assigns a priority to all communication requests and *Scan Screen* displays will be interrupted when a higher priority request is received on its assigned communication channel.

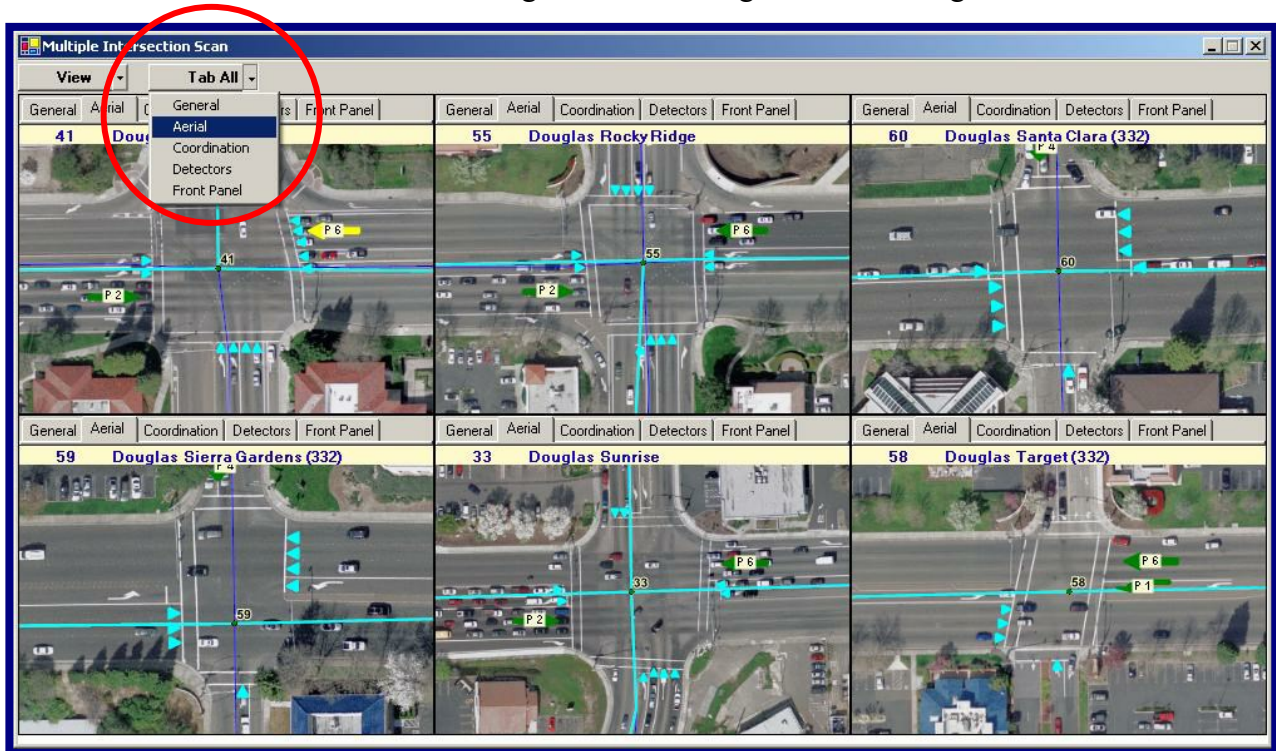
After highlighting the target controller in the Overview Pane, select *Real-Time...Scan*. A window will appear with an individual window for each of the selected controllers. The *Scan* window(s) offer individual views for General Information, Aerial, Coordination, Detectors, Front Panel, and Alarms. The Aerial screens will display the *GIS Scan Data* layer information and will need to have the desired data points assigned to each screen using the *Scan Screen Builder* in the *Definitions* module.

All of the R/Y/G returns, detector calls, timing counters, pattern information and alarms are already scanned during the “Full Status” task performed by the *Scheduler*.

The below picture shows a *Scan* window for four intersections selected from the *List* or *GIS map*.



**ONLY** in the Legacy display mode, the *Scan Screen* window offers two view settings, 1) *Tile* or *Film Strip*, and 2) *Tab* view. The *Tile View* displays all of the selected windows in a three across format. The *Film Strip View* places the same selected *Scan* windows in a single-row, left to right view. The figure below shows the *Tile View*.



The second view option setting is the *Tab All* view setting. This drop-down option enables the user to quickly select a specific tabbed view for all controllers within the *Scan* window, or individual tab views can be achieved by selecting the desired tab for each individual controller *Scan*.

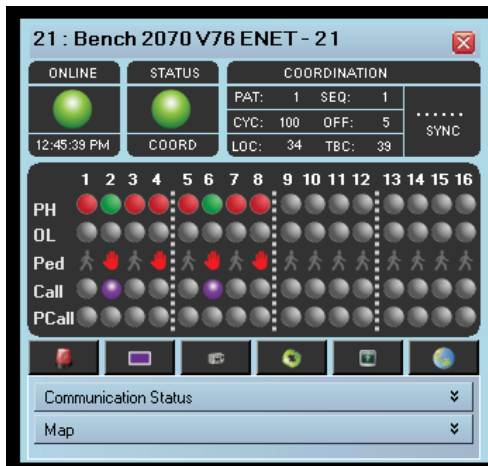
## General Information Status Screen

The *General Information* screen is the most commonly used *Scan Screen* in the system.

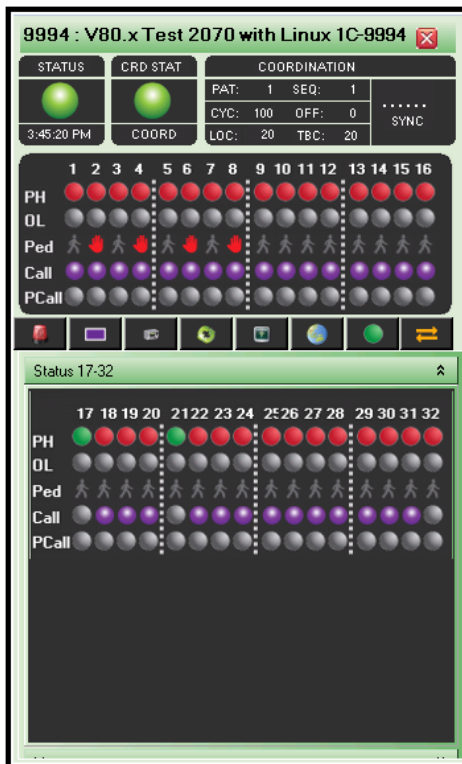
*General Information* displays the controller's time of day, phase, pedestrian, and overlap outputs. It displays phase and pedestrian calls. It gives the user a quick view of on-line and coordination status as well as general coordination information.

In addition, there are icons that will select addition specific real-time status such as alarms, detector inputs, communication, coordination and controller front panel status.

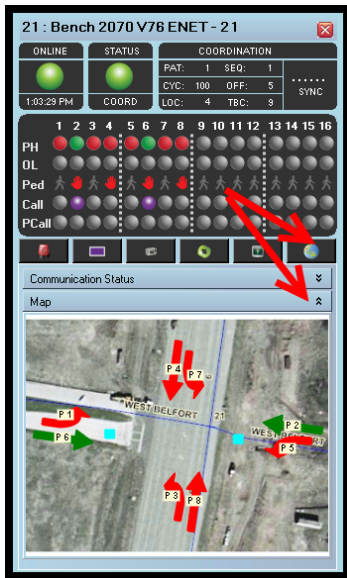
Below is the General Information Scan screen for V50.x, V61.x, V65.x, and V76.x controller types.



Below is the General Information Scan screen for the controller type Scout.x.

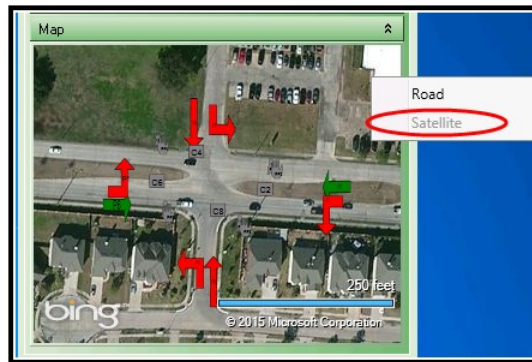
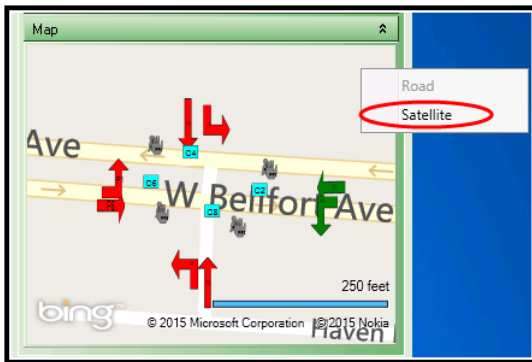


## Map View Icon

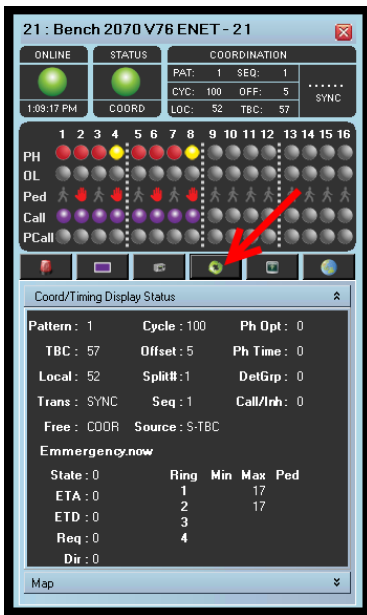


The *Map* selection displays a zoomed view from the *GIS map*. The *GIS Scan Data* layer for that specific intersection will be displayed in real-time. Each individual view offers the ability to navigate within each specific *Aerial* tab.

This view is always available using the drop down selector or via the Map icon. The user can select either the Satellite Mode or the Road Mode for the background map image by right-clicking the mouse over the map and choosing the background type.



## Coordination/ Timing Status Icon

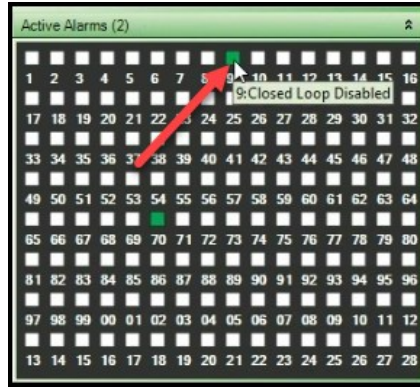
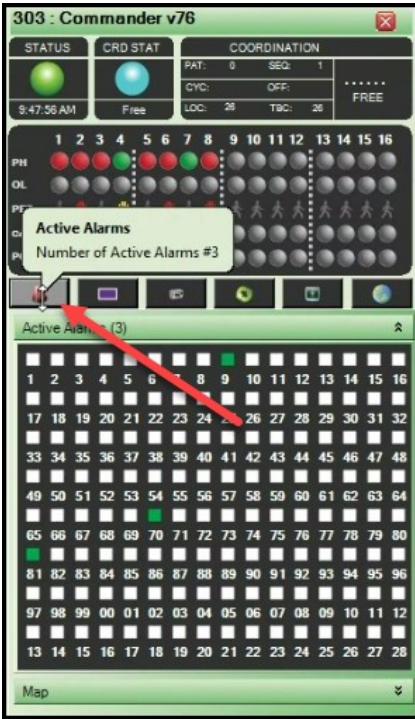


The *Coordination* status tab displays the same coordination status as displayed on the controller under MM>7>2. It also displays timing status as displayed on the controller under MM>7>1. In addition to the active coordination information, the *Coordination* tab also displays any alternate phase time tables, phase option tables, alternate detector groups or call/inhibit tables associated with the active pattern. For those users with the Emergency.now module, emergency vehicle status is also displayed.

## Alarms

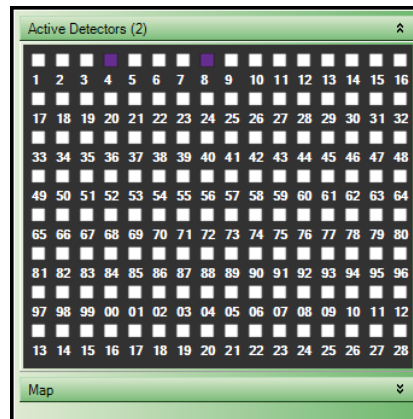
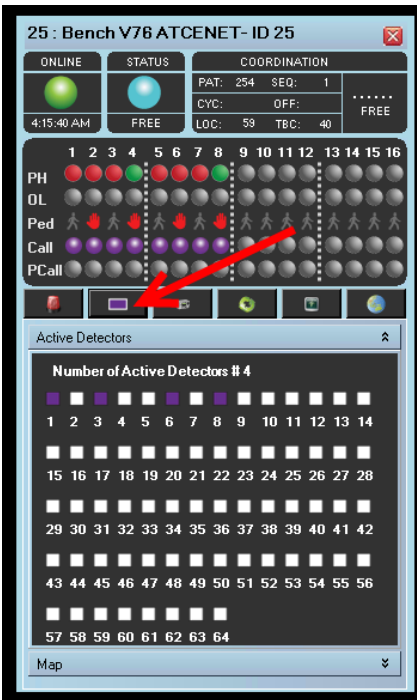
The *Alarm* status tab displays the un-cleared alarms directly from the controller. The screen will display the same information as screen MM>1>6>8 on the controller.

All alarm numbers include an on-screen alarm description. By hovering over the alarm with your mouse, a balloon tip with the alarm description will appear.

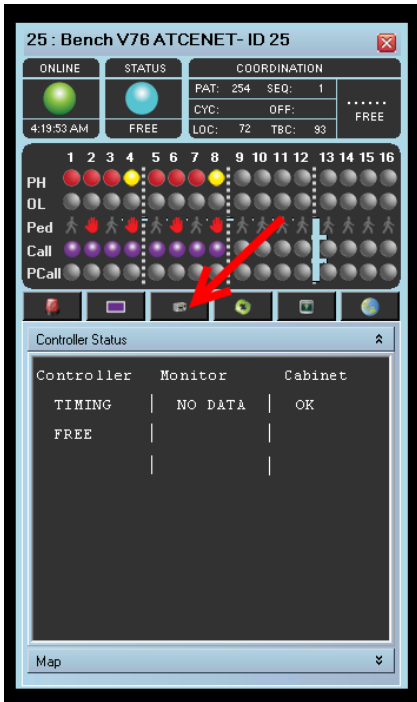


## Active Detectors Icon

The *Detector* status scan tab displays real-time detector channel inputs for up to 64 channels or 128 channels in Scout.x. Active detectors are shown in **PURPLE**.

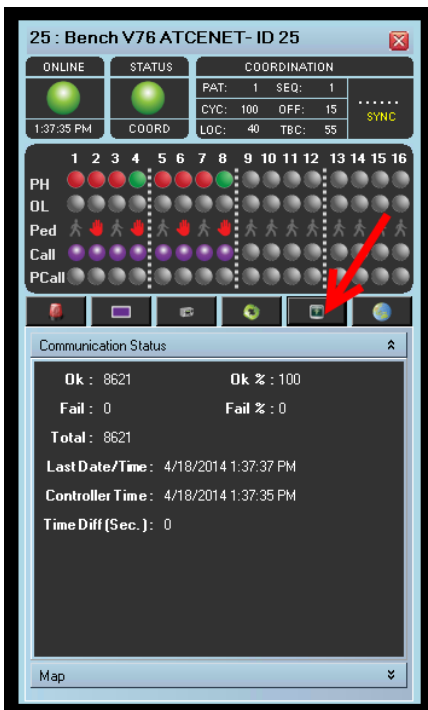


## Front Panel Status



The *Front Panel* tab displays the same status as menu MM>7>9>5 on the TS2 or 2070 controller. This is also the default “Time Out” screen on both controllers.

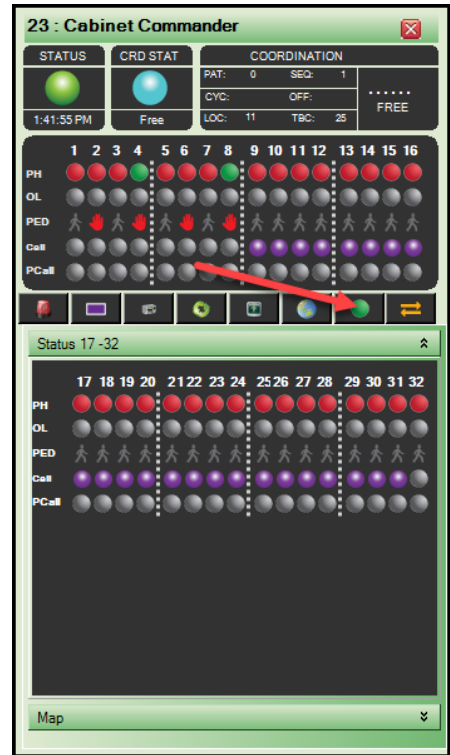
## Communications Status Icon



The *Communications Status* icon shows the user the active communications status as well as the controllers and servers time and the difference in those times.

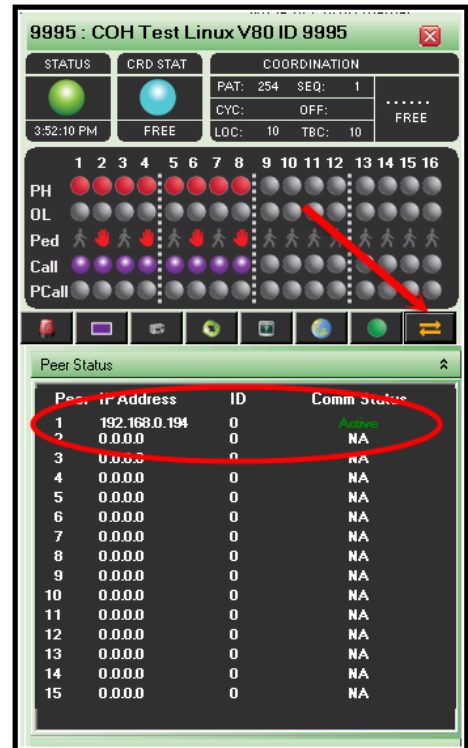
## Channels 17-32 Status Icon

For Scout.x controllers the Channel 17-32 status icon has been added to coincide with the Scout software's available 32 channels. This gives the user a full display of all vehicle, ped, and call statuses.



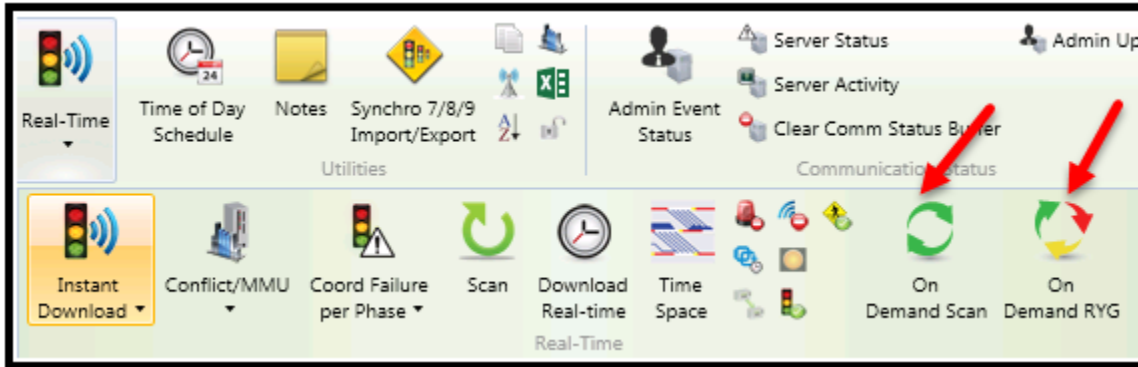
## Peer to Peer Status Icon

For Scout.x controllers the Peer to Peer status icon has been added so that the user can verify if Peer to Peer communication is working as desired. This status screen displays each controller's programmed Peers (up to 16) and if they are actively communicating.



### 5.3.2 On Demand Scan and On Demand RYG Scanning

Agencies utilizing serial communications (Direct connect or Dialup Modem) may want to consider selecting the On Demand Scan options. Serial data, depending on the BAUD rate may be slow to update when scheduling Full status or GYR polling. By using this feature, the agency will **NOT** have to schedule continuous Full status or GYR status polling via the scheduler. When the user wants to monitor a particular intersection, he can use this to start communications to the particular intersection. When selected, it will bring up the real time data via the scan screen and begin the polling of the intersection.

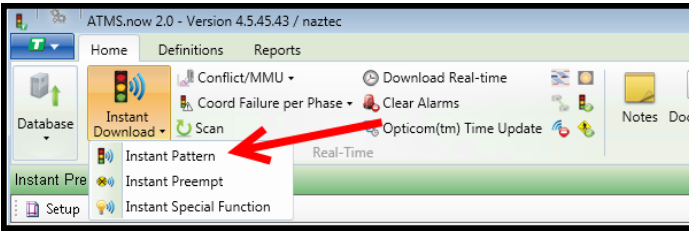


Selecting this will bring up the scan screen as normal and as soon as the user closes the scan screen, the communications will be stopped.

To gather data such as Alarms, Split history or Detector Vol/Occ data, the user should set up schedules for each on a daily basis.



### 5.3.3 Instant Pattern

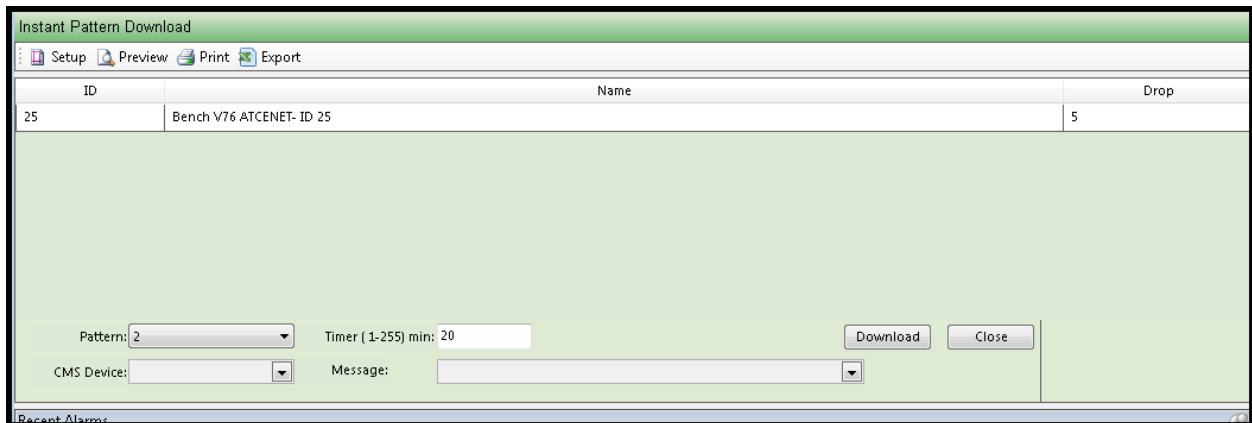


The Instant Pattern selection has been made available for users to manually control a controller, group or flex-group of controllers by immediately overriding the current operation with a Pattern and running that pattern for a specific duration of time or indefinitely. Select the intersection, or group of intersections, select *Real-Time>Instant Download>Instant Pattern*, then choose the

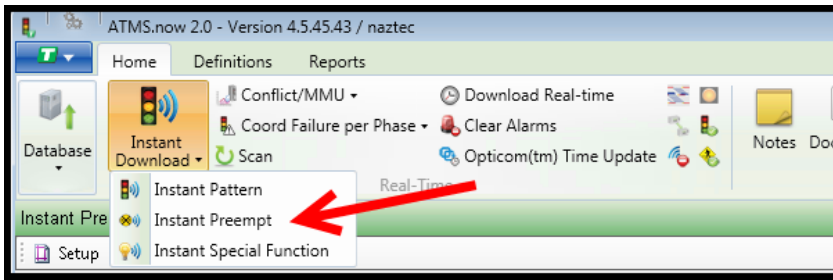
pattern that you want to implement and a duration of time that it is to be implemented (1 minute to 254 minutes, 255 indicates indefinitely). The “Timer” entry is in Minutes for all Patterns except “STOP TIME”. STOP TIME is sent with a “Timer” value in seconds. Available Patterns include Free, Flash, Revert (manually reverse the existing pattern back to TOD), 48 programmed patterns for V76 (and below), and 253 programmed patterns for Scout.x controllers.

In addition, if the user has previously defined CMS devices, the user can choose one and choose a message to be displayed when running this special operation. By depressing the *Download* selection, that pattern will be sent immediately to the controller(s) and force the controllers to run that pattern until the Timer value expires. The controller(s) will then revert back to the scheduled system pattern operation.

Due to the power of the “Stop Time” command, it is highly recommended to use discretion in regards to which user(s) have this feature enabled under User Definitions. Also note that programming a “Stop Time” value of 255 will not allow an indefinite “Stop Time” period.



### 5.3.4 Instant Preempt



The *Instant Preempt* selection has been made available for users to manually control a controller, group or flex group of controllers by immediately overriding the current operation with preemption (Train, EVP, or Transit) and running that preemption for a duration of time or indefinitely. The user will select the intersection, or group of intersections, choose

the preemption (H-P 1-12 and L-P 1-4) that they want to implement and a duration of time that it is to be implemented (1 second to 9999 seconds). The “Timer” for this function is in seconds. In addition, if the user has previously defined CMS devices, the user can choose one and choose a message to be displayed when running this special operation. By depressing the *Download* selection, that preempt command will be sent immediately to the controller(s) and force the controllers to run that preemption until the Timer value expires. The controller(s) will then exit preemption as programmed and revert back to the scheduled system operation.

**NOTE:** It is highly recommended to use discretion in regards to which user(s) have this feature enabled under User Definitions.

A screenshot of the 'Instant Preemption Download' dialog box. The window title is 'Instant Preemption Download'. At the top, there are buttons for 'Setup', 'Preview', 'Print', and 'Export'. Below is a table with the following data:

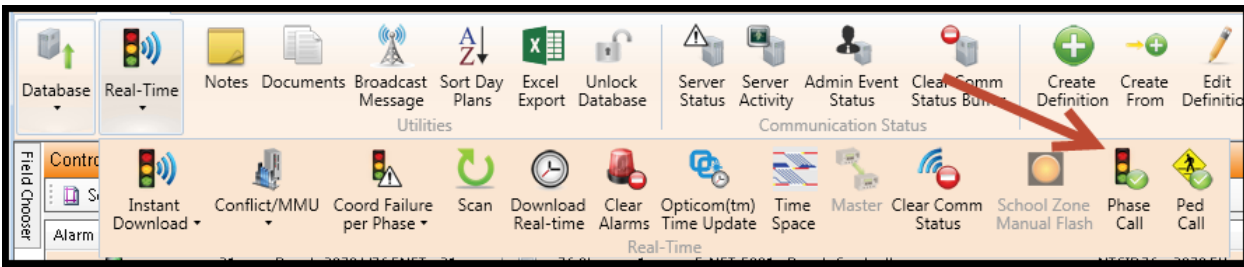
ID	Name	Drop
21	Bench 2070 V76 ENET - 21	1

Below the table, there are configuration fields:

- Preemption: 1 (dropdown menu)
- Timer (1-9999) Sec: 120 (text input)
- CMS Device: Alpha Sign (dropdown menu)
- Message: Incident Ahead-Merge to right Lane in 1 mile-Please use caution (dropdown menu)

At the bottom right, there are 'Download' and 'Close' buttons.

## 5.3.5 Phase Call

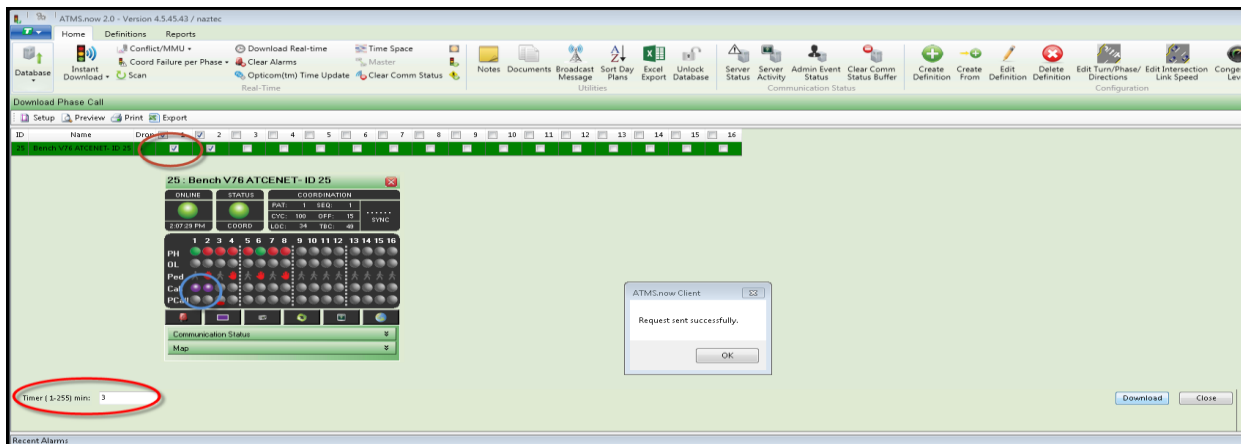


The *Phase Call* function allows the user to remotely place a call on a phase without downloading a Recall, which is part of the controller database and has to be removed. The *Phase Call* command is sent to a controller(s) with a time value. This allows the controller to acknowledge a call for a specific amount of time then release after the timer has expired, without requiring any further actions.

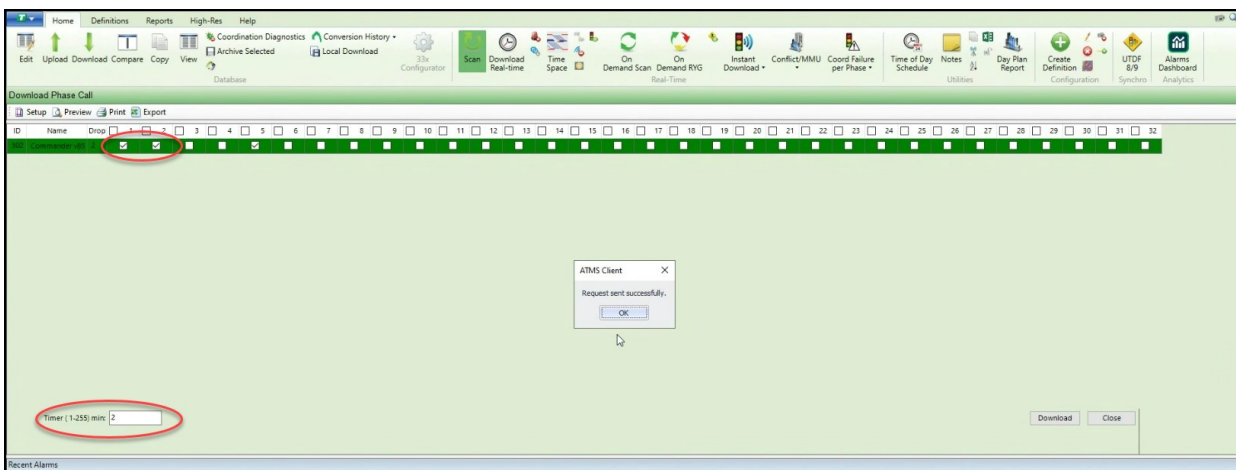
To perform a *Phase Call*, select the controller(s) for the command. Navigate to *Real-Time...Phase Call*. Check the boxes for the phases that you want to place a call. Next, enter a value (in minutes), for the call to be placed. The example below places a *Phase Call* on Phase 1 for a period of 2 minutes (circled in RED). Select the “Download” button to send.

The illustration below shows a *Phase Call* placed for Phase 1 while a “General Information” Scan Screen is active (circled in BLUE). The call will remain for 2 minutes until the phase is served (if the timer expires), whichever is first.

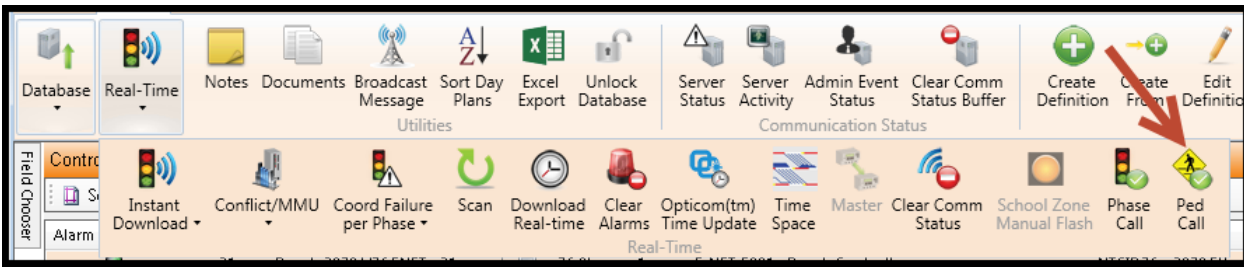
### V76 and below 1-16 channels:



### Scout.x 1-32 channels:

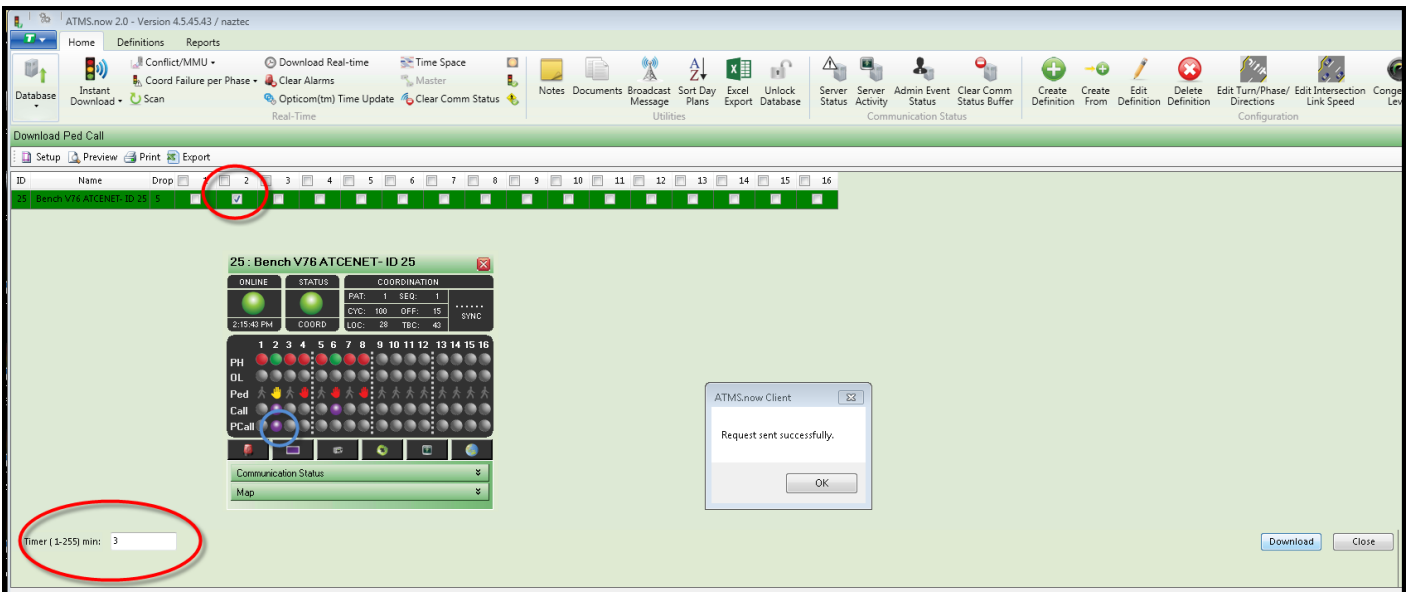


## 5.3.6 Ped Call

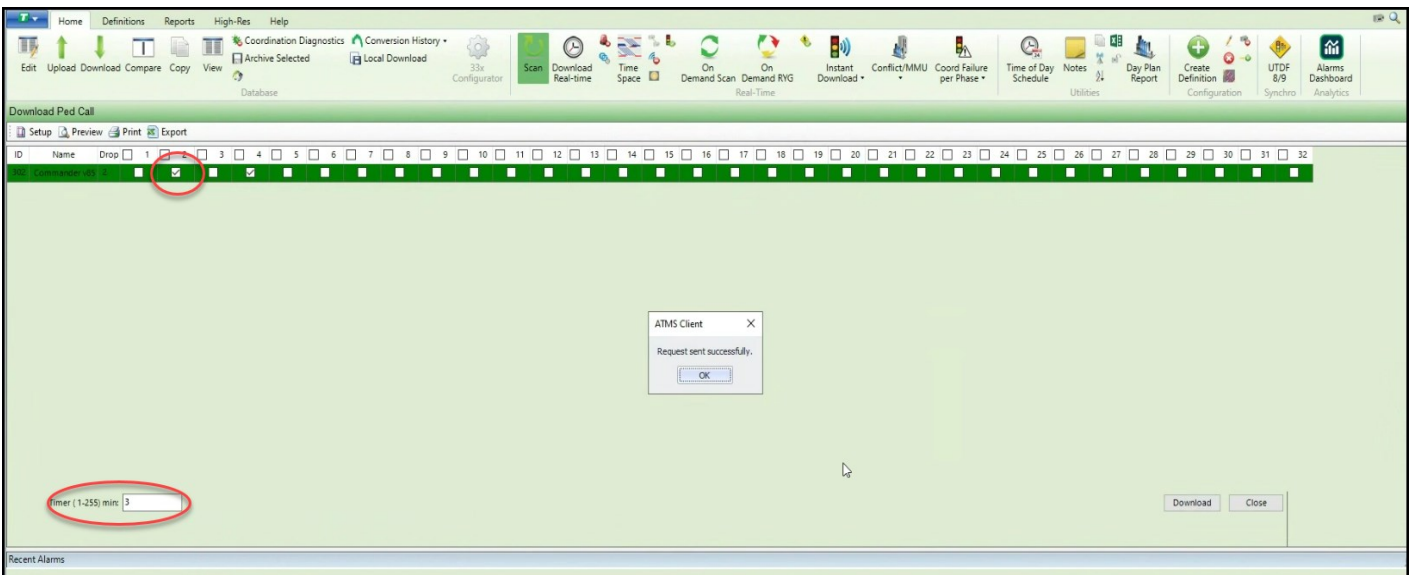


The *Ped Call* icon works just like the Phase call icon. Ped calls can only be placed on ATC, 2070, Scout controllers with version 76.x and Scout.x software or above.

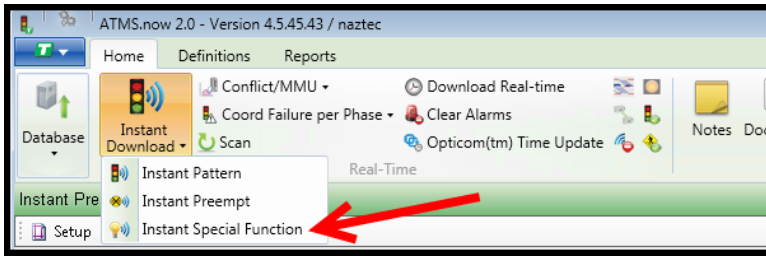
### V76 and below 1-16 channels:



### Scout.x 1-32 channels:



### 5.3.7 Instant Special Function (Output Control)



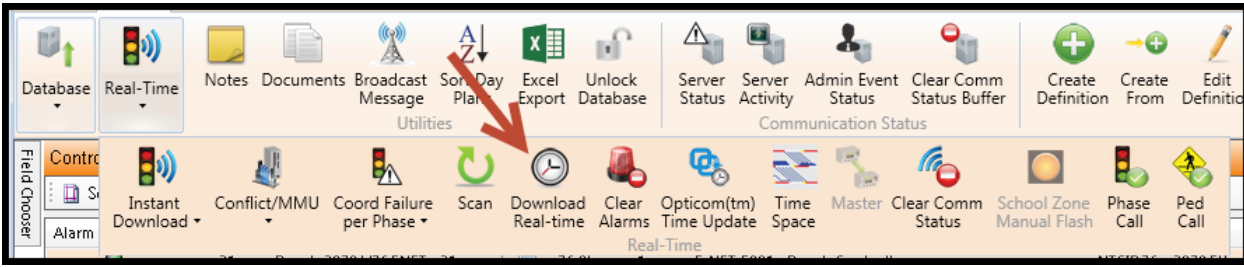
The *Instant Special Function* selection has been made available for users to manually control a controller, group or flex group of controllers by immediately overriding or adding to the current operation a **special function output** and running that special function output for a duration of time or indefinitely. The user will select the intersection

or group of intersections, choose the special function output (1-24) that they want to implement and a duration of time that it is to be implemented (1 minute to 254 minutes, 255 indicates indefinitely).

In addition, if the user has previously defined CMS devices, the user can choose one and choose a message to be displayed when running this special operation. By depressing the *Download* selection, that pattern will be sent immediately to the controller(s) and force the controllers to run that preemption until the timer value expires. The controller(s) will then revert back to the scheduled system operation.

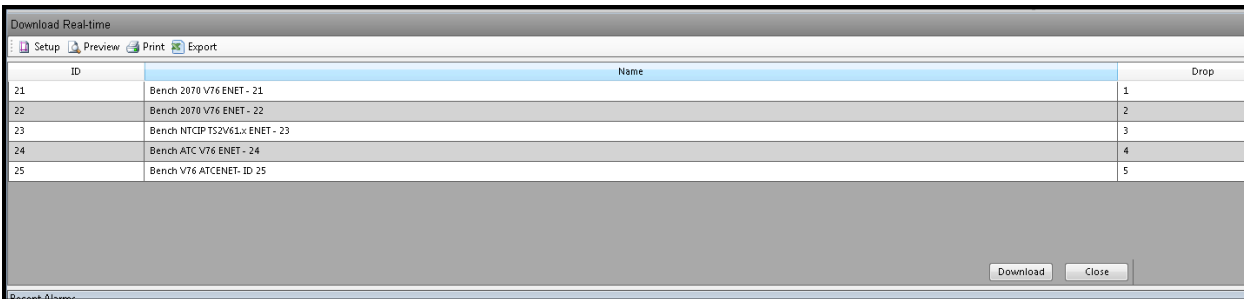
A screenshot of the 'Instant Special Function Download' dialog box. The window title is 'Instant Special Function Download'. It has a menu bar with 'Setup', 'Preview', 'Print', and 'Export'. Below the menu bar is a table with three columns: 'ID', 'Name', and 'Drop'. The table contains five rows of data. Below the table are configuration fields: 'Function:' with a dropdown menu set to '4', 'Timer (1-255) min:' with a text input field containing '5', 'CMS Device:' with a dropdown menu set to 'DakTronics CMS Sign #', and 'Message:' with a dropdown menu set to 'Incident Ahead-Merge to right Lane in 1 mile-Please use caution'. There are 'Download' and 'Close' buttons at the bottom right.

### 5.3.8 Download Real-Time

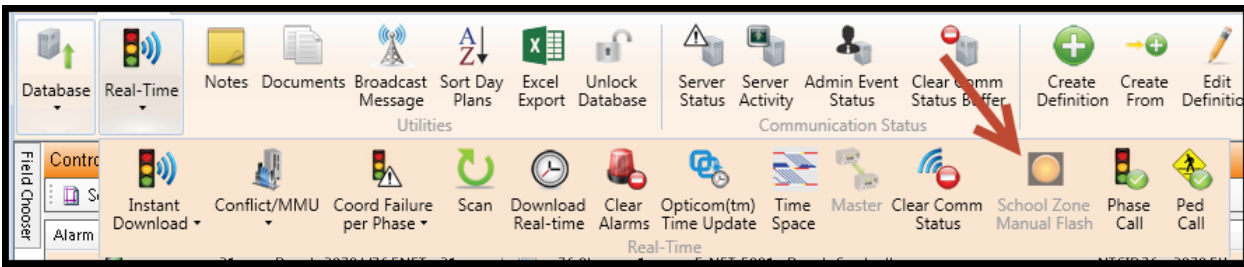


The *Download Real-Time* selection has been made available for users to manually send the central server’s time to a controller, group or flex-group of controllers. Automatically performed time-sync downloads are performed by the *Scheduler* at programmed times.

The user will select the intersection or group of intersections, and then depress the *Download* selection. The server’s time will be sent immediately to the controller(s).



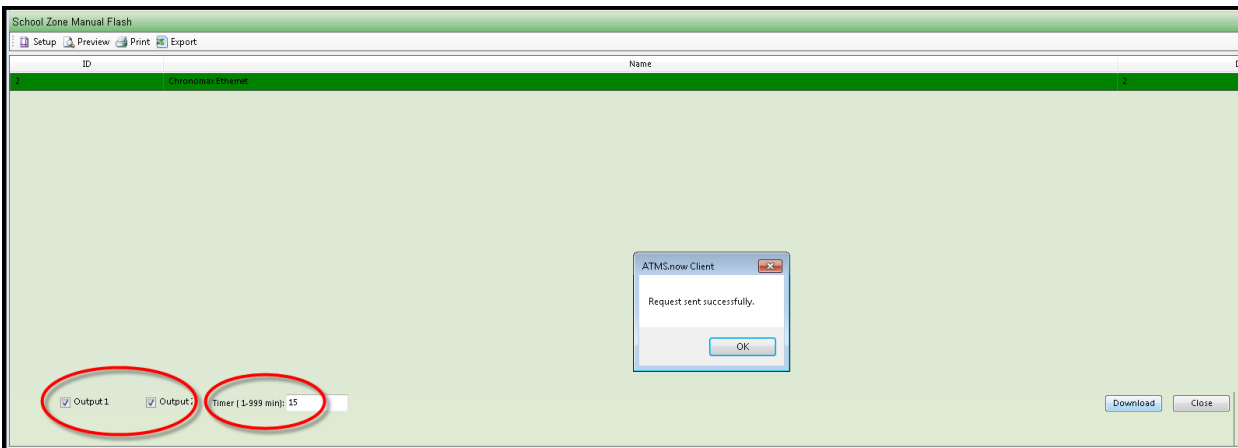
### 5.3.9 School Zone Manual Flash



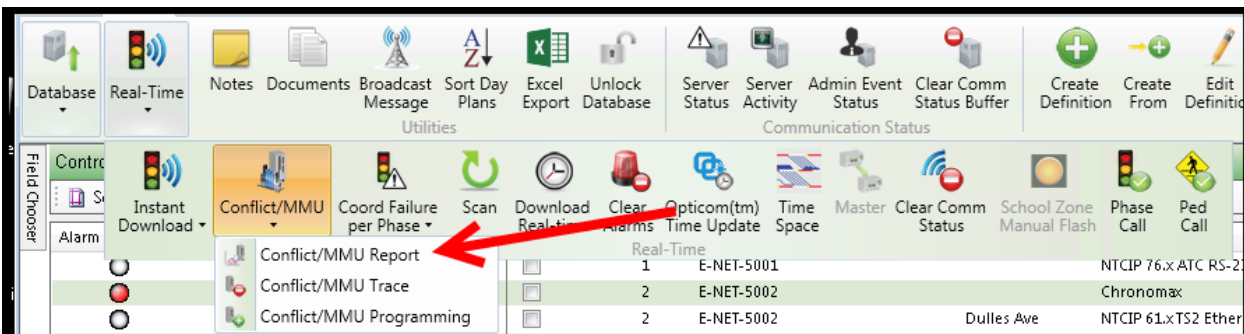
This selection enables the user to manually send an override command to the Chronomax Time Clock. This function requires a timer value and overrides the clocks scheduled TBC operation, and can be set to an “ON” or “OFF” state for the programmed period of time.

To perform a *School Zone Manual Flash* command, select one or more Chronomax Clocks from the *List* or *GIS* map. Navigate to *Actions...Real-Time...School Zone Manual Flash*. The selected Chronomax Clock(s) will appear in the main window. Check one or both desired clock output channels (Output 1 and/or Output 2) to activate, enter a “Timer” value in minutes for the override to occur. Select the “Download” button to send the override. A confirming message will appear the transaction.

Select “Close” to exit without action.

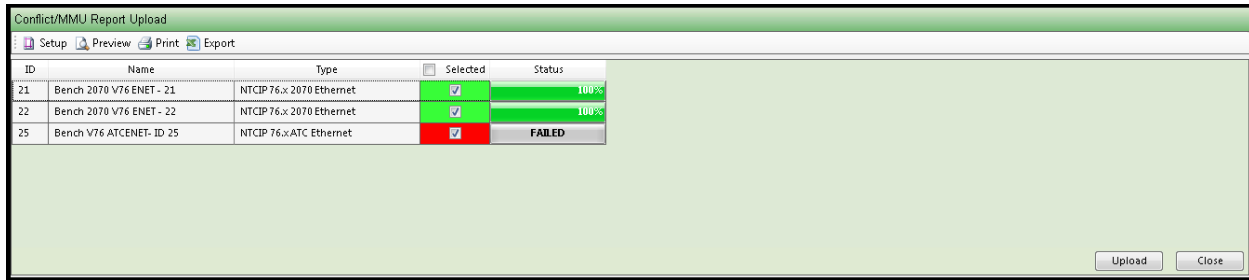


### 5.3.10 Conflict / MMU Report

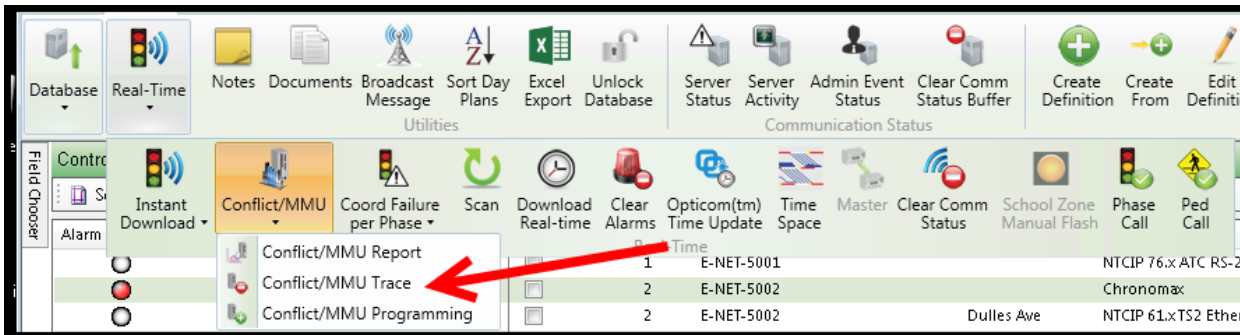


The Conflict/MMU Report selection has been made available for users to upload the internal monitor reports on Cubic | Trafficware brand CMU’s or MMU’s via the controller’s communications port. The user will select the controller(s) and then depress the *Upload* selection.

This Conflict/MMU monitor report will be sent immediately to the server for report purposes. Accessing the reports can be performed through the *Conflict/MMU* tab of the *Details* pane as described in section 4.2.

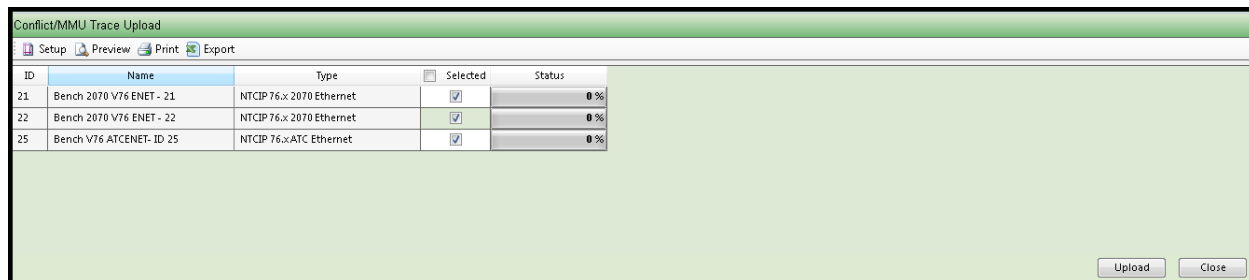


### 5.3.11 Conflict / MMU Trace



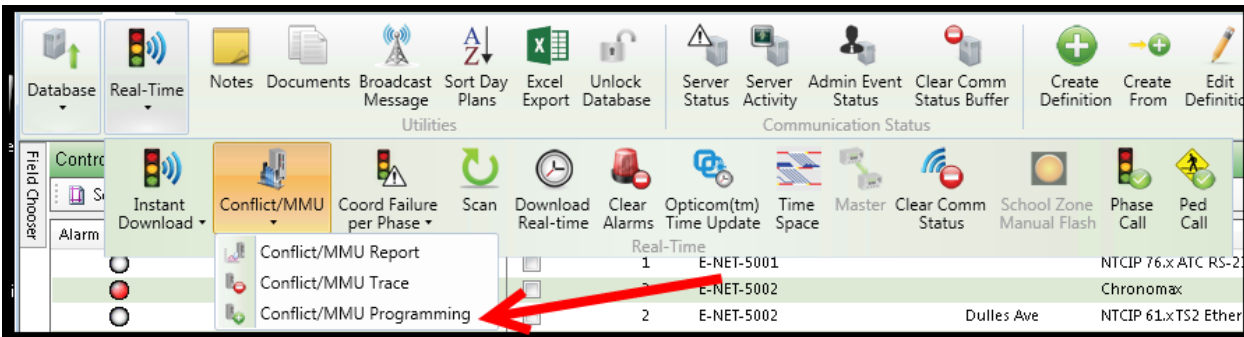
The Conflict/MMU Trace Report selection has been made available for users to upload the monitor Trace report from Cubic | Trafficware brand CMU's or MMU's via the controller's communications port. The user will select the controller and then depress the *Upload* selection. The Conflict/MMU monitor Trace report will be sent immediately to the server for report purposes.

This Conflict/MMU monitor report will be sent immediately to the server for report purposes. Accessing the reports can be performed through the *Conflict/MMU* tab of the *Details* pane as described in section 4.2.



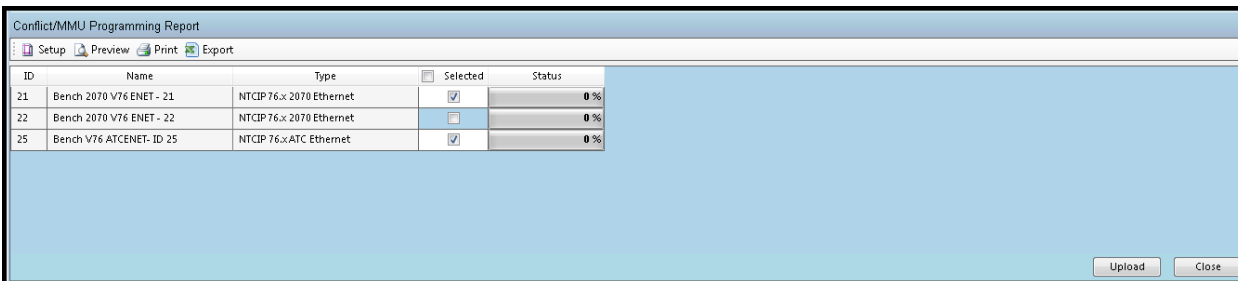


### 5.3.12 Conflict / MMU Programming

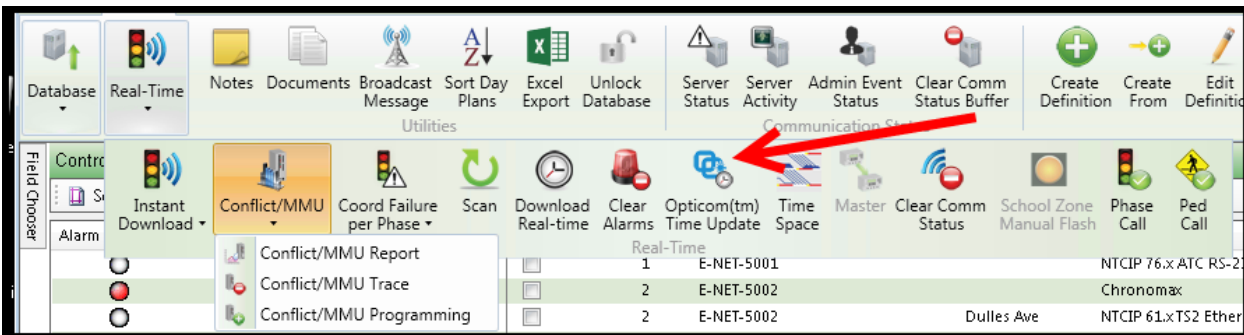


The Conflict/MMU Programming Report selection has been made available for users to upload the TS2 MMU or Conflict monitor's report from a controller. The user will select the controller and then depress the *Upload* selection. The Conflict/MMU Programming monitor report will be sent immediately to the server for report purposes to verify correct conflict programming.

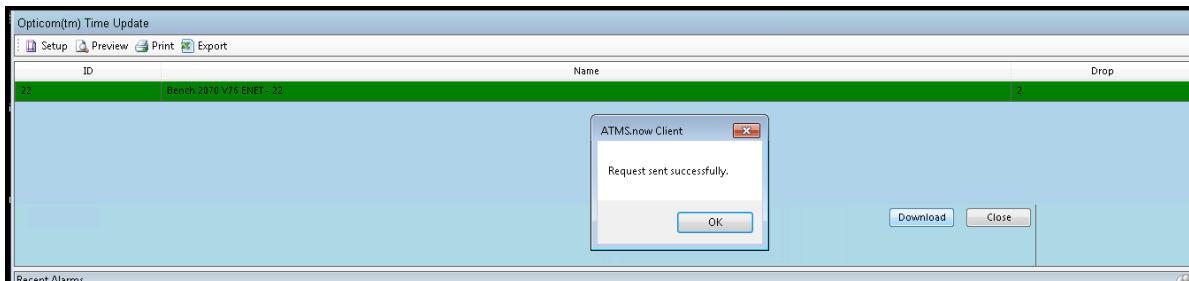
This Conflict/MMU monitor report will be sent immediately to the server for report purposes. Accessing the reports can be performed through the *Conflict/MMU* tab of the *Details* pane as described in section 4.2.



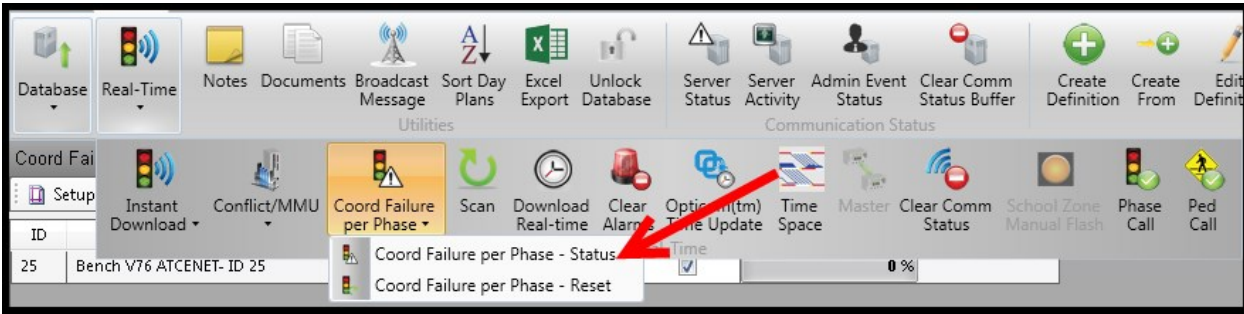
### 5.3.13 Opticom Time Update



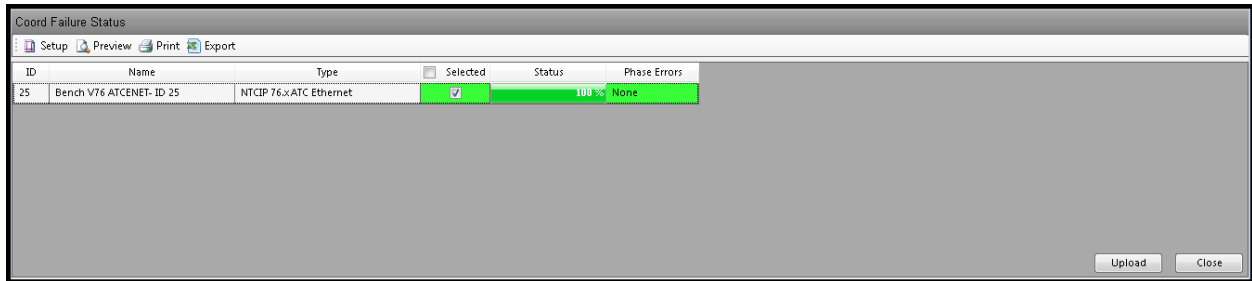
This selection will download the server's time to any Opticom unit that is connected to the selected controller(s). This will enable a constant time reference to be used by both the controller and the Opticom units, and enable the Opticom logs to display accurate event data.



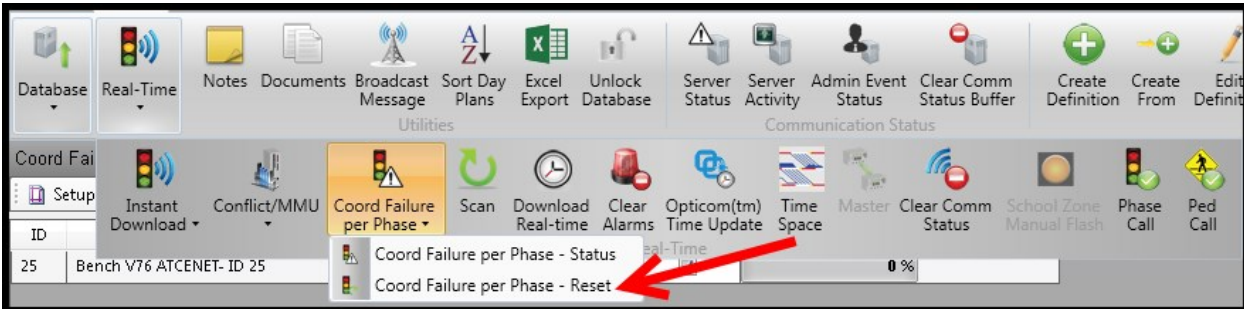
### 5.3.14 Coord Failure per Phase – Status



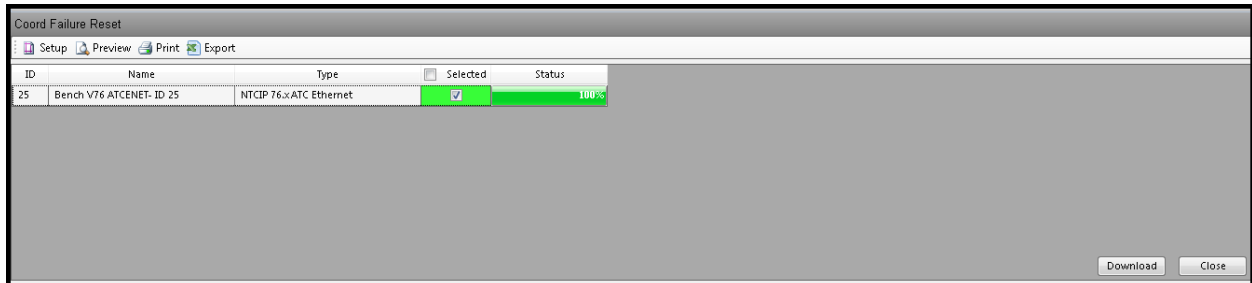
This selection will upload the results of the Coord Diagnostics from the selected controller (MM>2>8>5) and give you the Phase errors so that you can modify your database to resolve coordination errors.



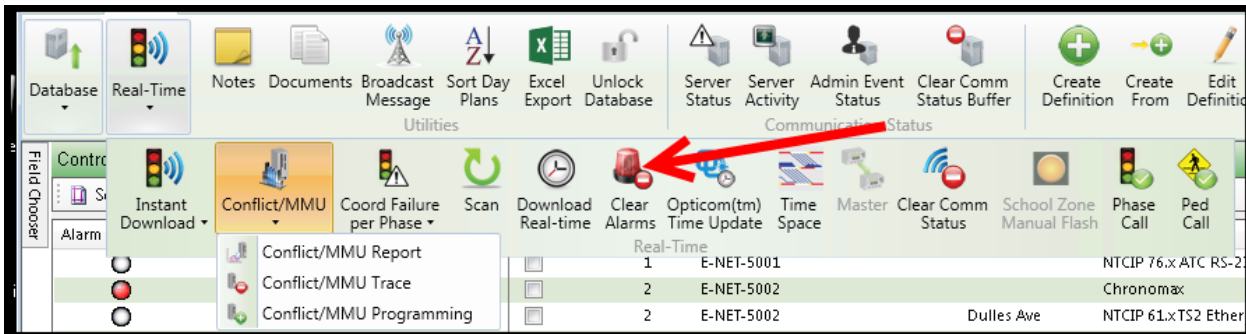
### 5.3.15 Coord Failure per Phase – Reset




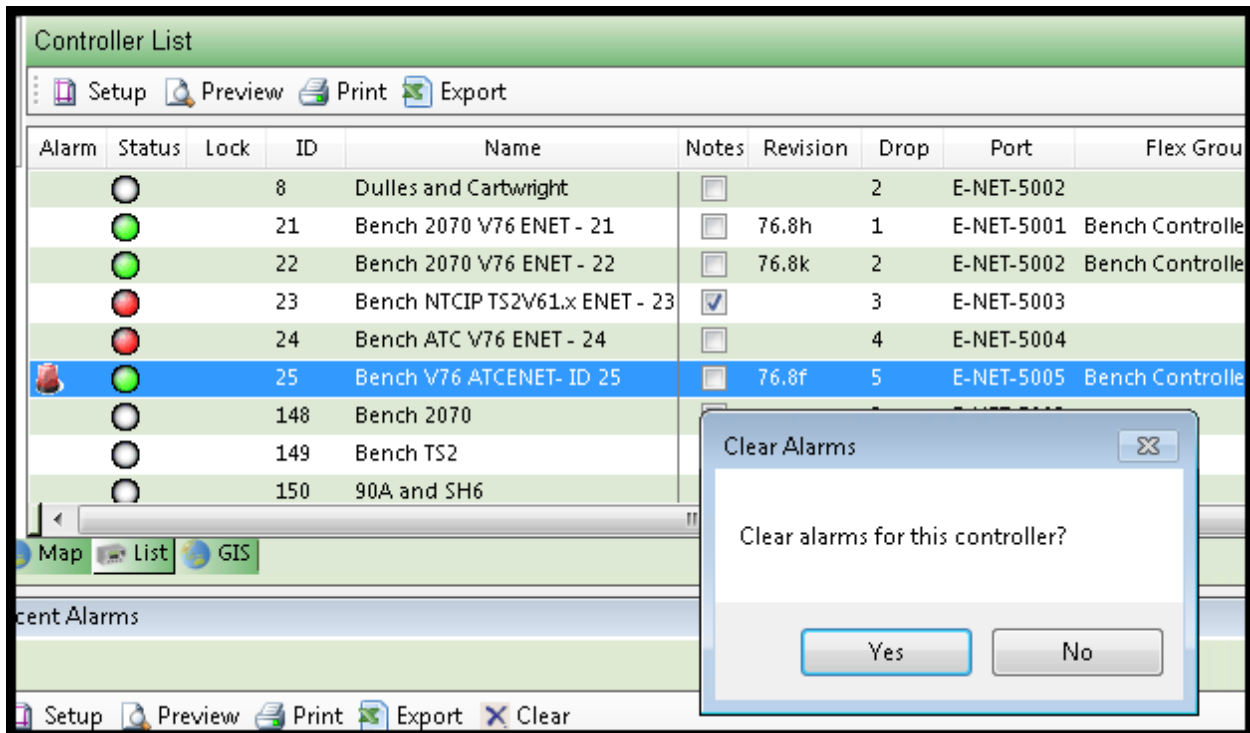
This selection allows you to reset any coordination diagnostic failures (errors), once you've fixed them, so that the controller can attempt to transition back into coordination while the same pattern is active.



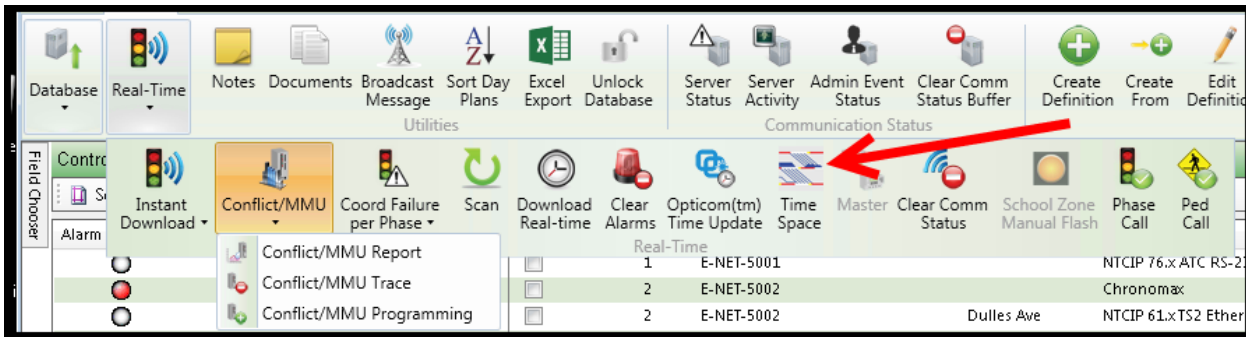
### 5.3.16 Clear Alarms



The *Clear Alarms* selection has been made available for users to clear the real-time alarm data on the *List View* for a controller, group or flex group of controllers. To clear the alarms, select the controller(s) and then navigate to *Actions...Real Time...Clear Alarms*. A verification message will come up asking the user “Clear Alarms for This Controller?” and if the user depresses the “Yes” selection, the alarms for that controller(s) will be cleared and the  icon will disappear from the Alarm column on the *List View*.



### 5.3.17 Time Space Diagram



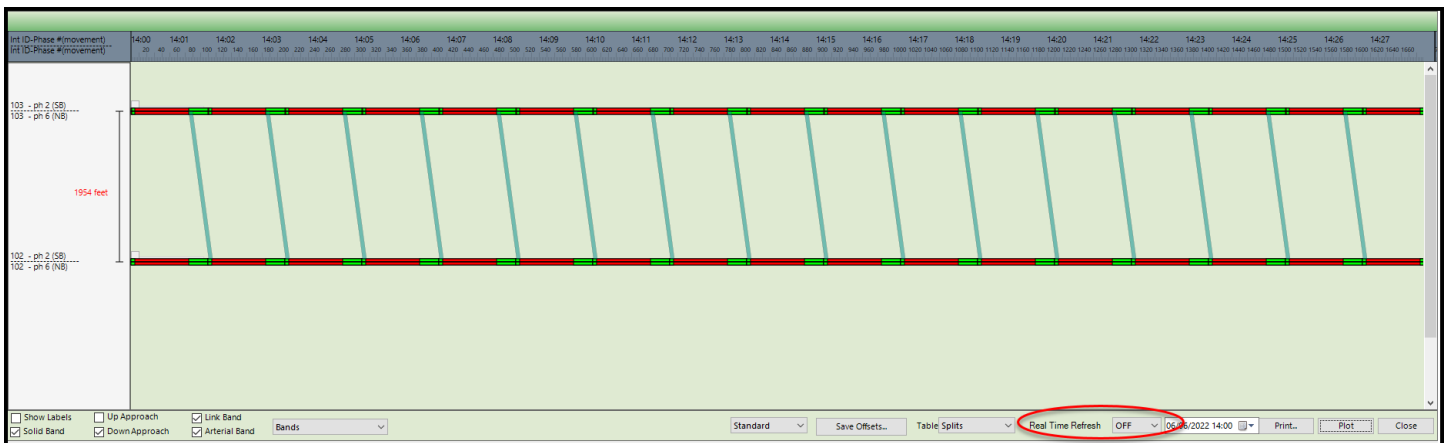
**ATMS** can generate a *Time Space* diagram for controllers that are in coordination. The *Time Space* utility provides a bi-directional Green Band calculation and Delay-Flow calculations. The Delay-Flow band is designed to illustrate the delay time of the cars in the platoon that did not stay within the Green Band and were “Delayed” in the coordination operation. All calculations automatically update in real-time at a user-defined rate of 15, 30, 45, and 60 second intervals, or can be set to calculate from historical values that have been saved on the server.

ATMS 2.11 and below the *Time Space* utility uses the speed and distance information from the *Actions...Configurations...Edit Intersection Link Speed*. If this section is not accurately completed, the *Time Space* diagram will not work properly.

**Starting with ATMS 2.12, the time space diagram will use Intersection Layout screens to generate the speed and distance relationships that link the intersections. Please refer to the Intersection Layout section in this chapter for more details. Intersection Pin must be placed in the center of the intersection. Refer to Intersection Layout>Intersection Link Speed Set-Up to link adjacent intersections.**

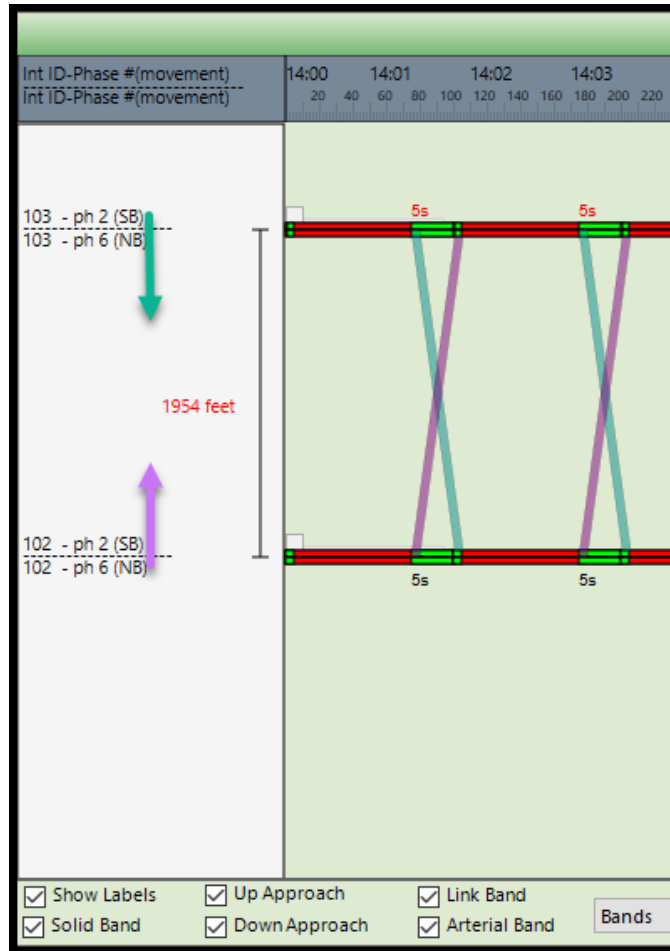
To initiate a diagram, select any number of adjacent controllers from the *List* or *Map*, then navigate to *Actions...Real-Time...Time Space*. For a real-time *Time Space* diagram, set the “Real Time” value to the desired time interval value for the report resolution. The interval resolution can be set to 15, 30, 45, or 60 seconds as shown in the left most circle below. At any time you can refresh the diagram for a current real-time reading instead of waiting for the selected interval counter to expire. This can be done by selecting the “Plot” button on the bottom right of the screen.

A historical *Time Space* can be generated from the stored database by setting the “Real Time Refresh” value circled below to “OFF”. Next, select the desired Date/Time value from the drop-down.

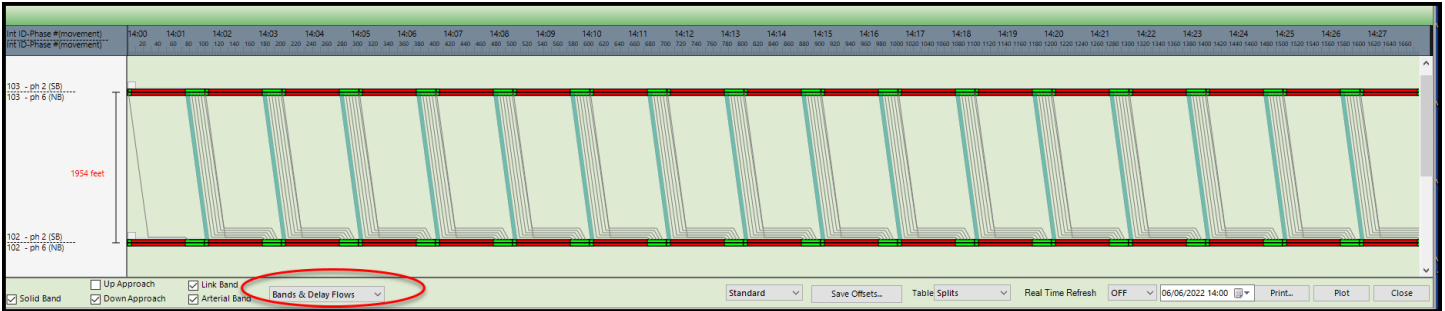
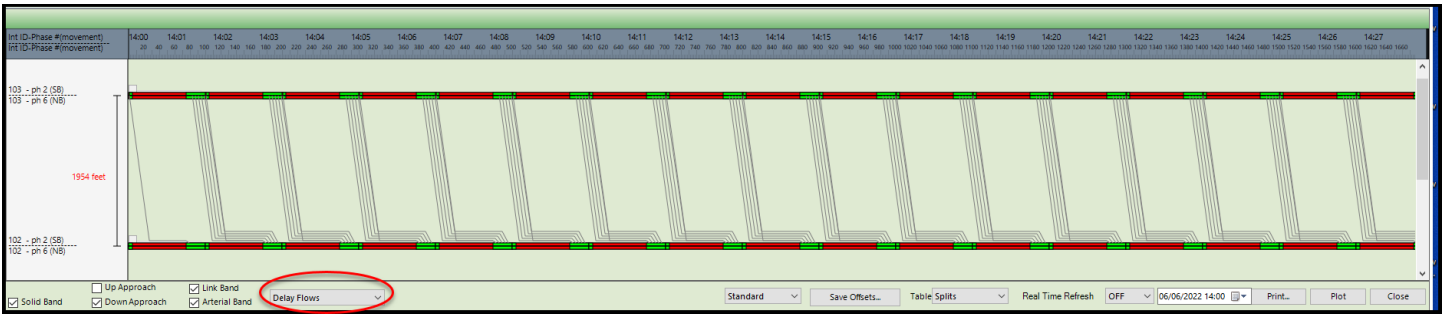


Beginning with ATMS 2.12 Time Space diagrams support both one way and path-based Time space relationships. *In addition, Time Space diagrams now support controllers that coordinate on multiple corridors, as well as controllers that operate multiple intersections.*

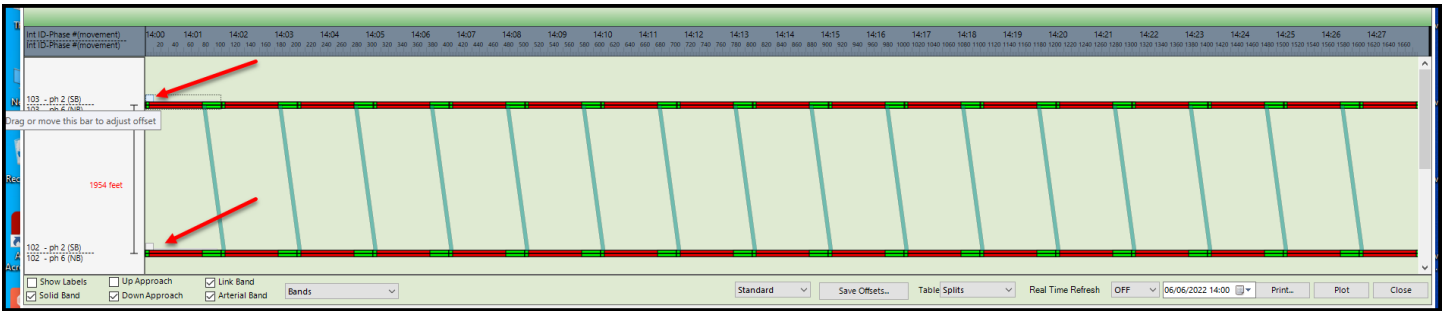
Notice below that the Time Space relationship displays different coordinated phases based on the direction of travel (Phase 2 southbound and Phase 6 northbound).



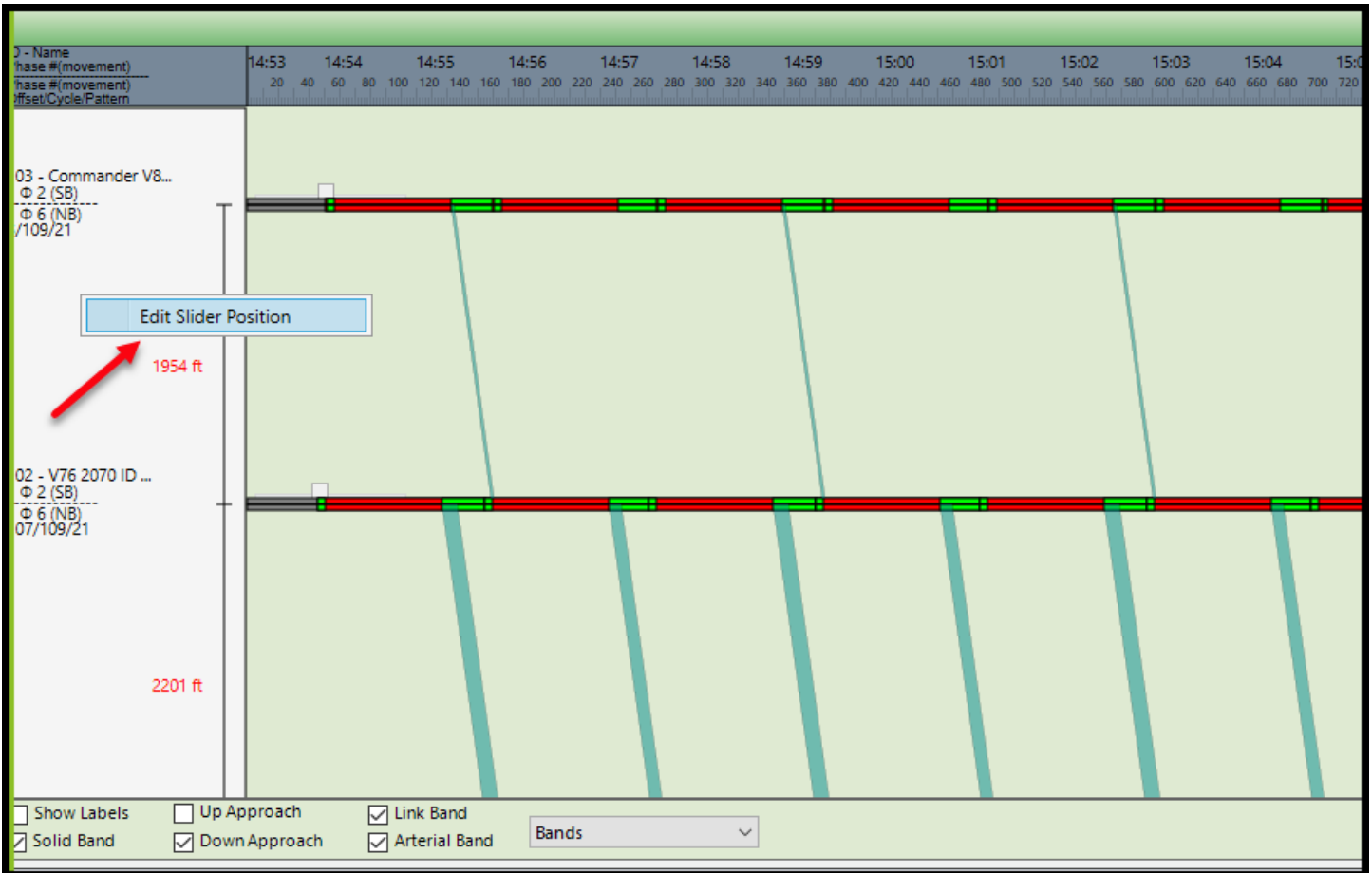
The user can display various information by checking the appropriate boxes on the bottom of the time space diagrams. This information includes Labels, Solid Bands, Up Approach, Down Approach, Link Bands and Arterial Bands.



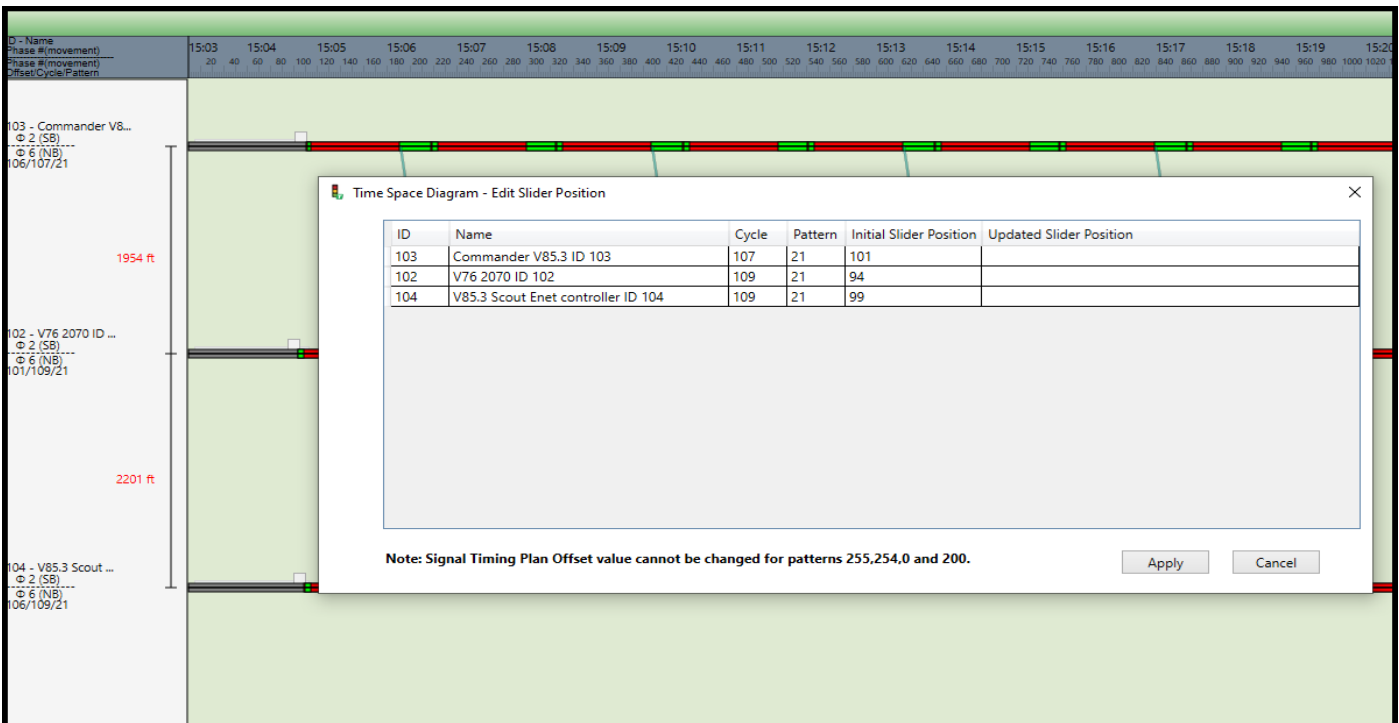
Offsets can be adjusted by moving the white Box on the time line as shown below.

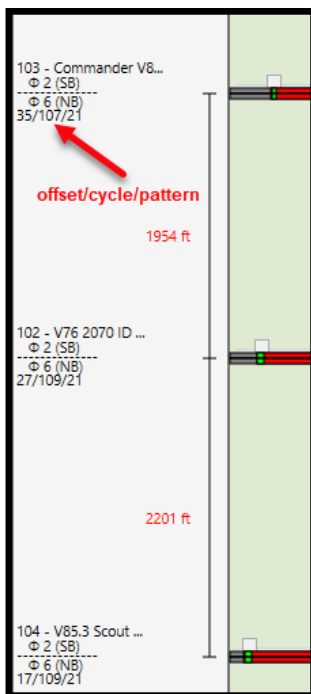
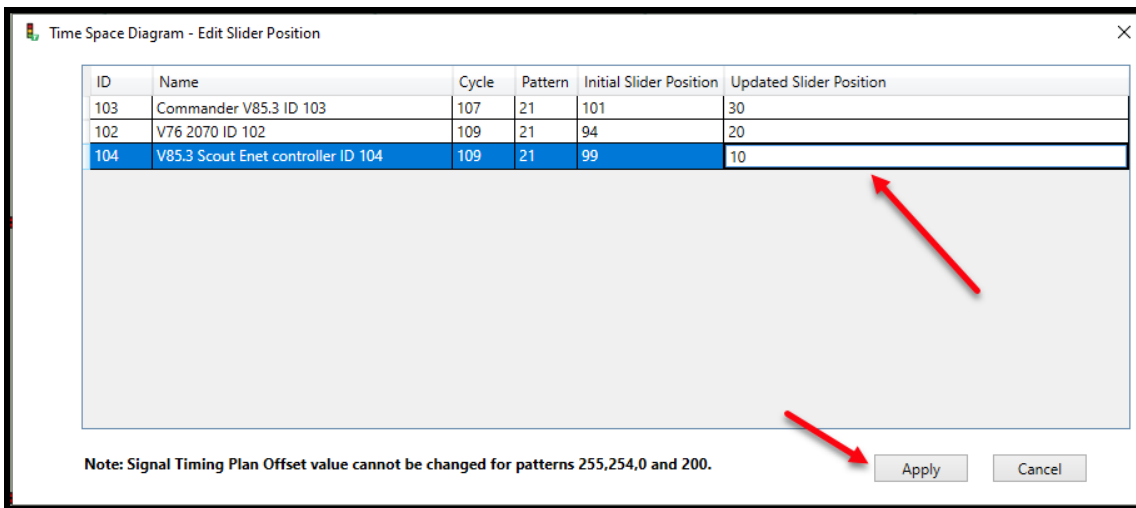


ATMS 2.14 has added an additional way of changing offsets for the entire group of selected intersections. Simply right click on the list of intersections to the right of the diagram and the “Enter Slider position tab will be displayed as shown below.



Clicking on that tab will bring up the Slider Position adjustment table where you can enter by hand the desired slider position for the selected corridor. Enter the desired slider positions in the “Updated Slider Position” column.

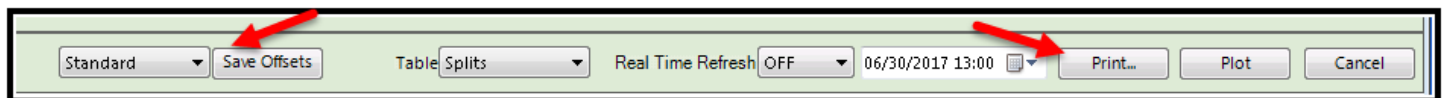




The slider position is used to generate new offsets for each intersection. When completed, hit the Apply button and the time space diagram will be updated with the new offsets.

You can view the adjusted offsets on the left side of the time space diagram.

Refer to the bottom of the Time Space diagram, as shown below. The user can transfer any adjusted offset data to the selected database and save it using the **Save Offsets** button. In addition, capability has been added to print out the Time Space display shown below by using the Print button.

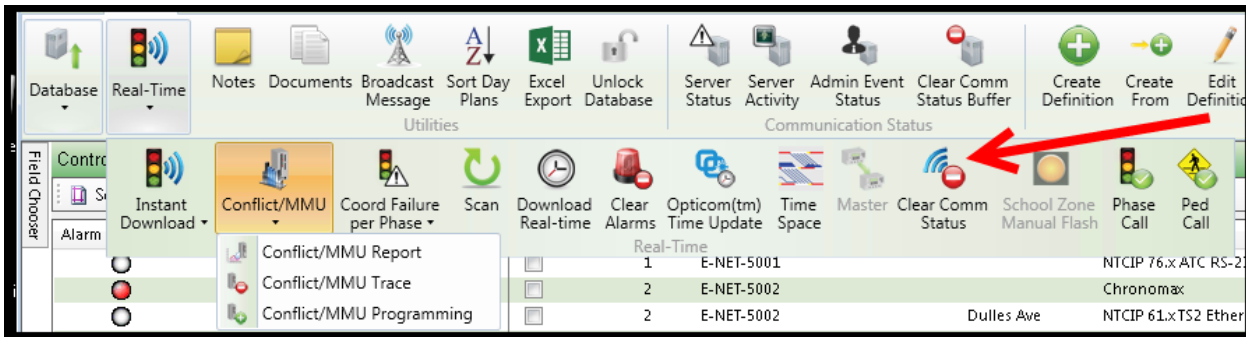


The Time Space Diagram that has been added in **ATMS** requires the local firmware in the controllers to be the following revisions for this feature to properly calculate: 61.3k or higher for 970/980/981 series controllers, v76 or higher for ATC and Scout x. for Commander controllers.







\*\*\*Older controller firmware versions will not report correctly to this feature.



### 5.3.18 Clear Comm Status



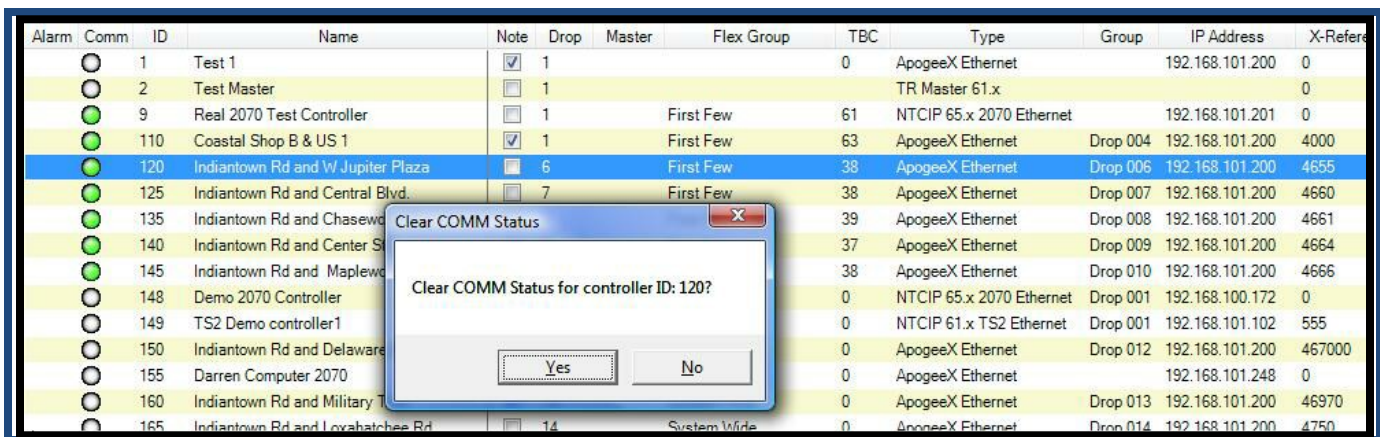
The “Status” LED on the *List* view displays the status of the last attempted transaction with a controller. The LED displays colors for the following default status categories:

- GREEN  - On Line and communicating
- RED  - Off Line and should be communicating
- YELLOW  - Intersection is in Flash
- CYAN  - Intersection has reported a Coordination Failure
- PURPLE  - Intersection is in Preemption
- GREY  - Off Line and not being polled for status

The user may customize some of the alarm colors under the *Definitions Module Alarm > Alternate Alarm Description* selection.

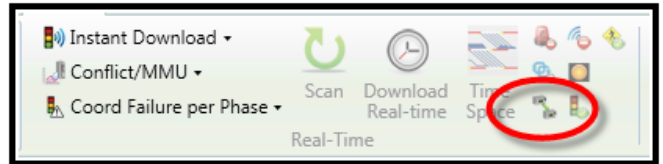
The *Clear Comm Status* action is occasionally needed to clear old or incorrect status data from the last attempted transaction to the controller. Clearing the old data enables controllers that have had a manual change in status, such as placing them on the *Controllers Offline* list, removing them from a “Full Status” poll, or a failed transaction, to display an accurate real-time status instead of the status of the last transaction.

To perform a *Clear Comm Status* action, select a controller or multiple controllers from the *List* or *GIS* map, then navigate to *Actions...Real-Time...Clear Comm Status*. A confirming message will appear. Select “Yes” to clear or “No” to exit.



### 5.3.19 Real Time Master

This selection is used with any Centralized Traffic Responsive Master to show its status in real time. It will show the following screen below to assist the user in selecting proper indexes and parameters for their centralized TR Master. In addition, The user can set a Master e-mail notification that will notify the user every time the pattern changes.



Central Traffic Responsive - Central TR Master ID 1000

#### General Status - Master Configuration

General		Computed Values		
		Param	Index	
Active	Yes	Max V+0	0	1
ID	1000	Offset	0	1
Type	Traffic Responsive	Split	0	1

#### Configuration

Configuration	Coordination Mode	Pattern	Offset
MTBC	TRI	0	1
MSYS	TBC	0	1
MCLP	TBC	0	1
MTRI	TR	0	1
MTRE	TR	0	1
FAIL	SBY	0	1
MTST	TBC	0	1

#### Detectors

#	Status	Raw_Vol	Raw_Occ	Smooth_Vo	Smooth_Oc
1	ONLINE	0	0	0	0
2	ONLINE	0	0	0	0
3	ONLINE	0	0	0	0
4	ONLINE	0	0	0	0
5	ONLINE	0	0	0	0
6	ONLINE	0	0	0	0
7	ONLINE	0	0	0	0
8	ONLINE	0	0	0	0
9	ONLINE	0	0	0	0
10	ONLINE	0	0	0	0

#### Poll Timers

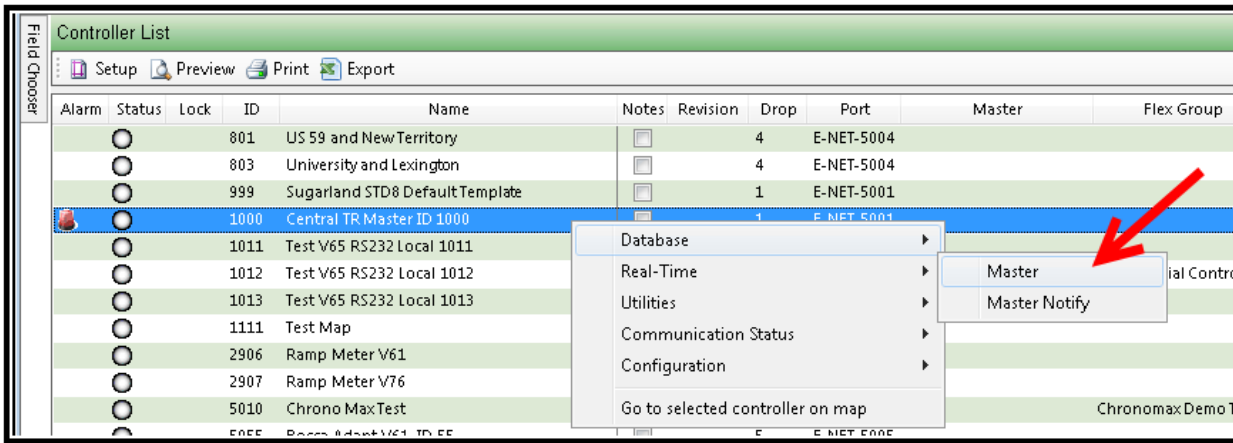
Current	NOPOLLS
Detector VO	36
Pattern	766
Re-Establish Comm	1656

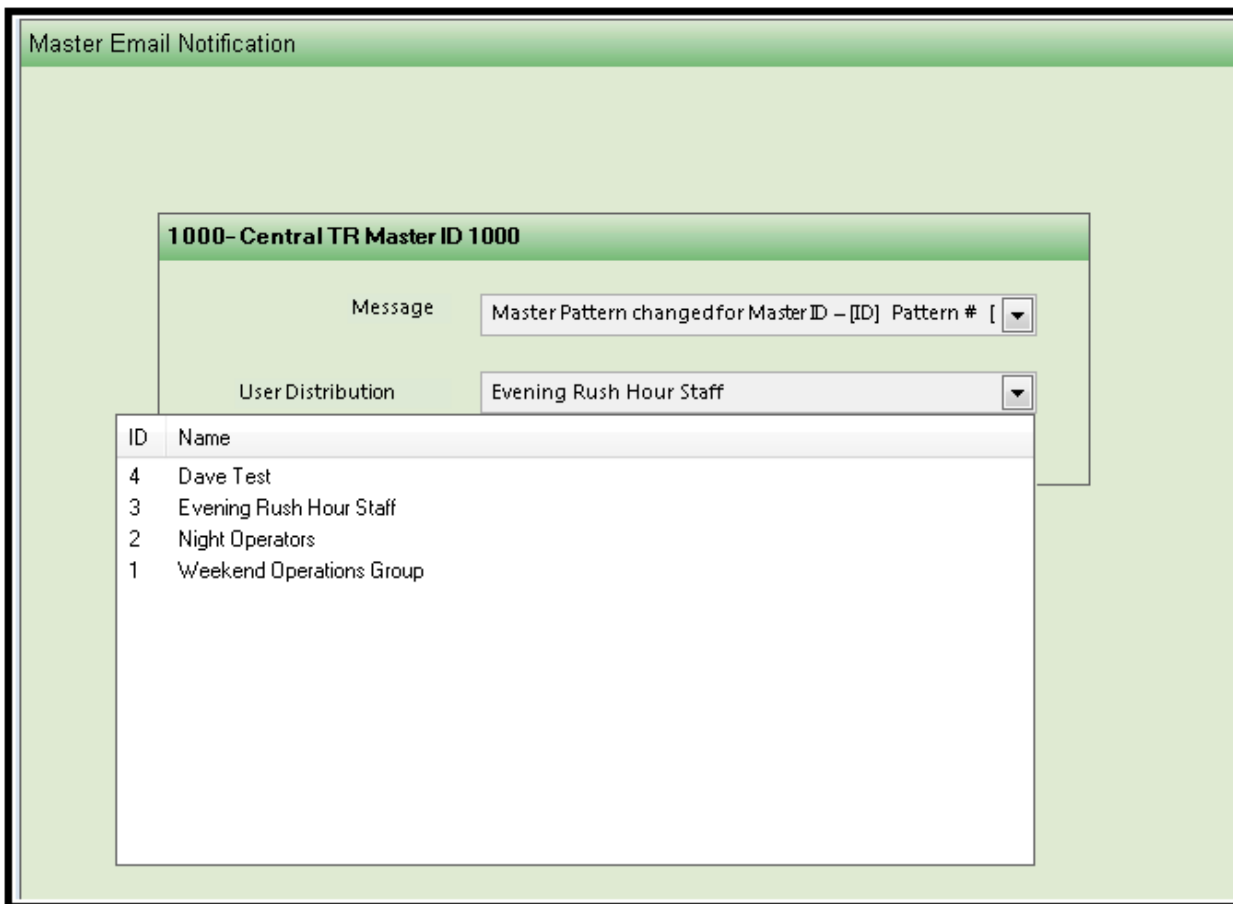
#### Sub System

Pos	ID	Status
1	23	ONLINE
2	26	ONLINE
3	27	ONLINE
4	36	ONLINE
5	0	UNDEF
6	0	UNDEF
7	0	UNDEF
8	0	UNDEF
9	0	UNDEF
10	0	UNDEF
11	0	UNDEF
12	0	UNDEF
13	0	UNDEF
14	0	UNDEF
15	0	UNDEF
16	0	UNDEF
17	0	UNDEF
18	0	UNDEF
19	0	UNDEF
20	0	UNDEF
21	0	UNDEF

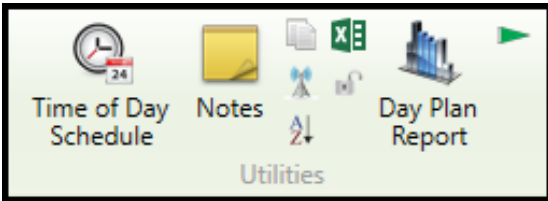
In addition, there is a Real-Time selection to create an e-mail notification to a user distribution List via the selection of Master Notify as shown below.



Once selected, the following screen is displayed so that the user can notify that Pattern changes are occurring with a specific defined message to a specified User notification group.

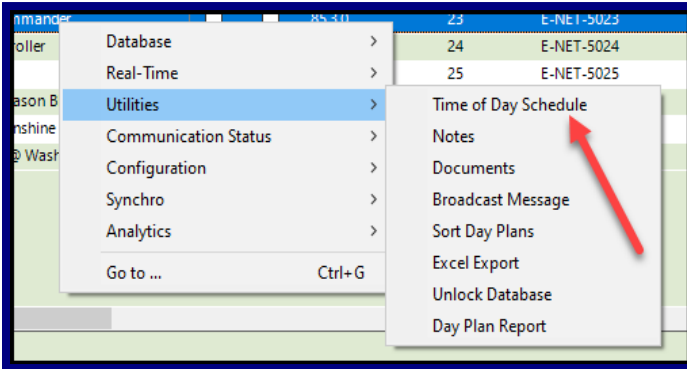


## 5.4 Utilities



The *Utilities* section of the *Actions* pane allows the user to perform informational tasks specific to controllers. These include printing coordination schedules, creating indexed notes and documents, and import/export of Synchro data.

### 5.4.1 Time of Day Schedule



The *Time of Day Schedule* presents a printable calendar of coord data. This data can be displayed and printed in Daily, Work Week, Weekly, or Monthly formats. The Monthly format is shown below and is selectable by the circled selection at the top of the screen. The selection for the formats is made by clicking on the corresponding icon boxes at the top of the calendar screen. The user can print these pages by selecting the corresponding icon on the upper left of the screen in the desired format (The print area and format areas are circled in **RED**).

**Time of Day Schedule : 405 - Elm Ave and Military Trail**

Print icons (circled in red) | 1 Day | 5 Work Week | 7 Week | 31 Month (circled in red)

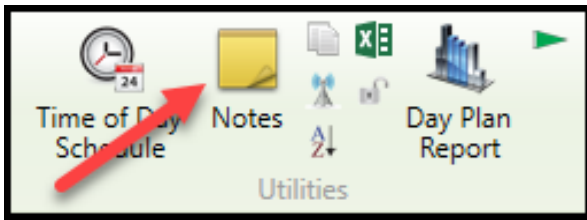
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
November 27	28	29	30	December 01	2	3
	00:00 P 254 09:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 09:00 P 254
4	5	6	7	8	9	10
00:00 P 254 09:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 09:00 P 254
11	12	13	14	15	16	17
00:00 P 254 09:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 09:00 P 254
18	19	20	21	22	23	24
00:00 P 254 09:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 09:00 P 254
25	26	27	28	29	30	31
00:00 P 254 09:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 07:00 P 1 15:00 P 254	00:00 P 254 09:00 P 254

December 2005  
S M T W T F S  
27 28 29 30 1 2 3  
4 5 6 7 8 9 10  
11 12 13 14 15 16 17  
18 19 20 21 22 23 24  
25 26 27 28 29 30 31

January 2006  
S M T W T F S  
1 2 3 4 5 6 7  
8 9 10 11 12 13 14  
15 16 17 18 19 20 21  
22 23 24 25 26 27 28  
29 30 31 1 2 3 4  
5 6 7 8 9 10 11

Database Configuration: Standard [v] [Close]

## 5.4.2 Notes



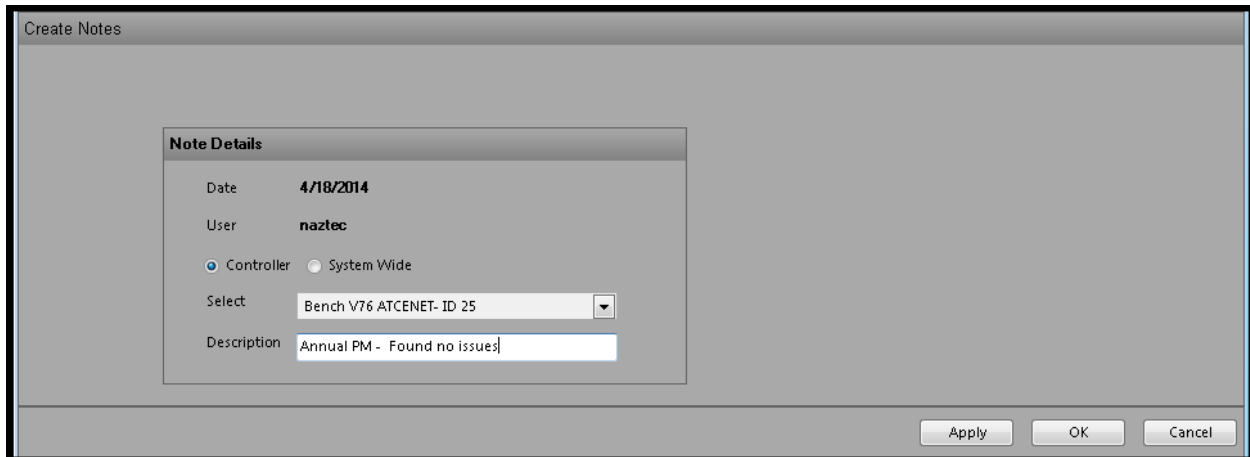
The *Notes* section of *Utilities* enables users to create both *Notes* for specific controllers and general system-wide use.

Each *Note* provides a date and named user for reference.

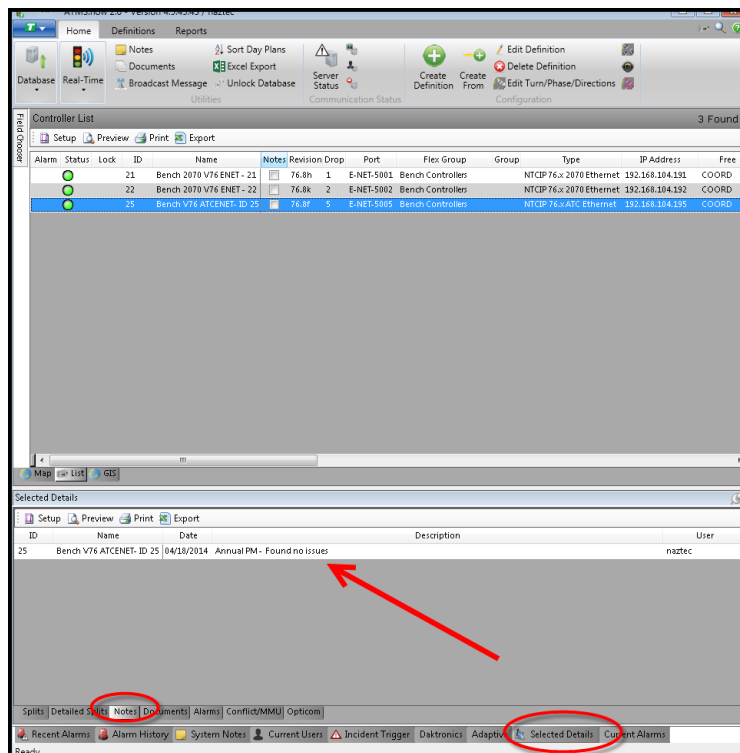
Each *Note* is displayed in the *Selected Details* pane, either the *System Notes* tab for System-Wide notes, or *Selected*

*Details...Notes* tab section for Controller notes.

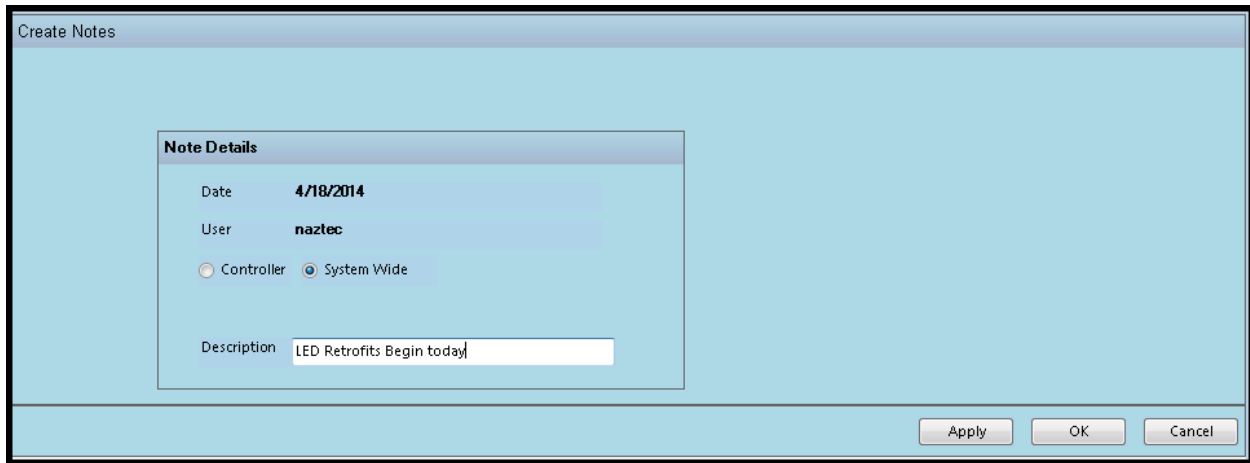
To create a specific Controller *Note*, choose *Utilities...Notes*. Next, select “Controller”. This will open a “Select” box for specific controller selection. Choose the specific controller for the *Note*. Finally, enter the desired *Note* text in the “Description” box. Save and close.



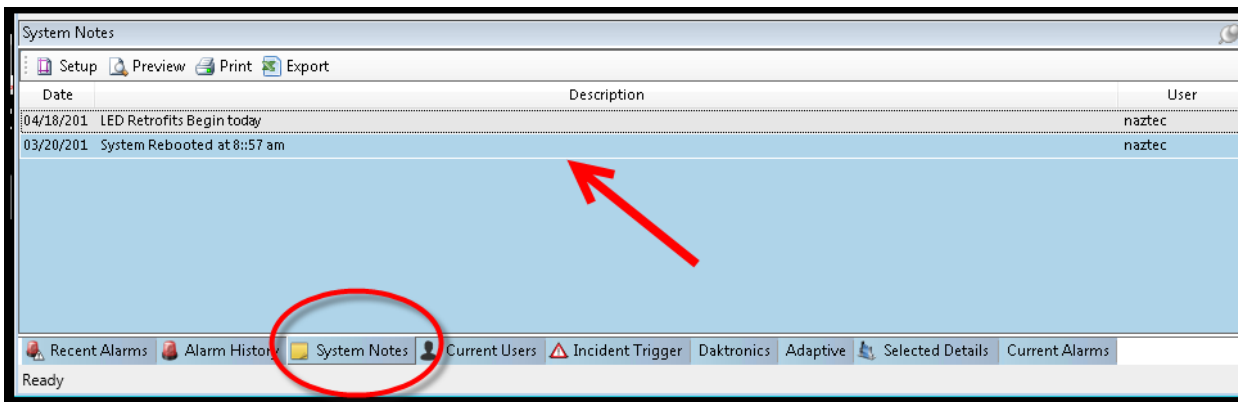
To view a controller-specific *Note*, select the controller in the Overview Pane, the *Notes* file can be viewed in the *Detail Pane* by choosing *Selected Details...Notes*.



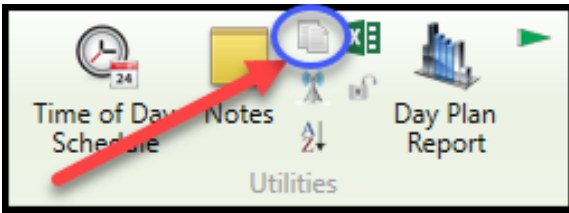
To create a general *System Note*, choose *Utilities...Notes*. Next, select “System Wide”. Next, enter the desired *Note* text in the “Description” box. Save and close by hitting the OK button.



To view the *System Note*, select the *System Notes* tab in the *Details Pane*. Regardless of the controller selection activity on the *List* or *Map*, the information will remain unchanged in the *System Notes* tab.



### 5.4.3 Documents

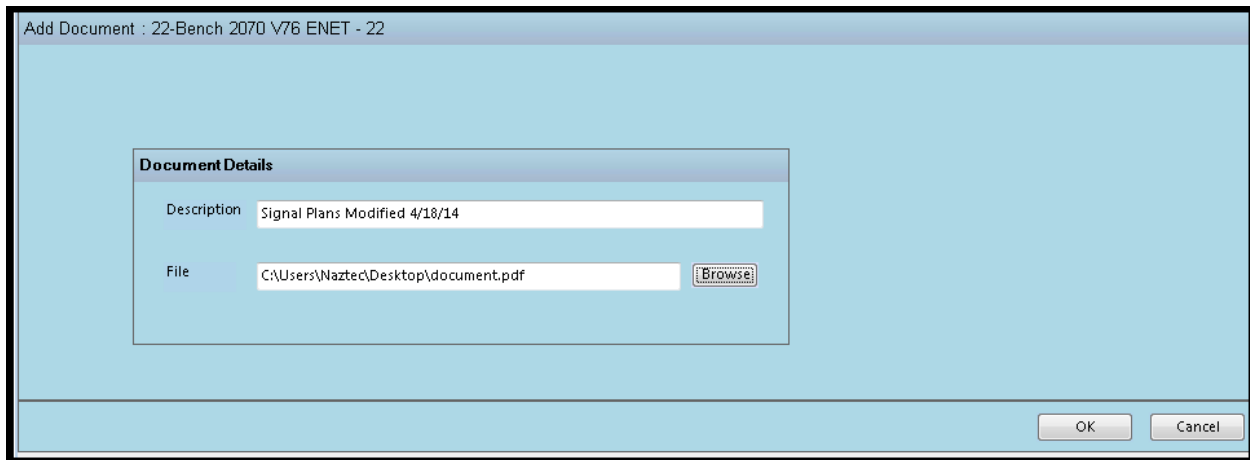


This feature enables the system to index specific documents such as cabinet prints, pictures and files by controller.

The user can easily access and view documents in the *Selected Details* pane.

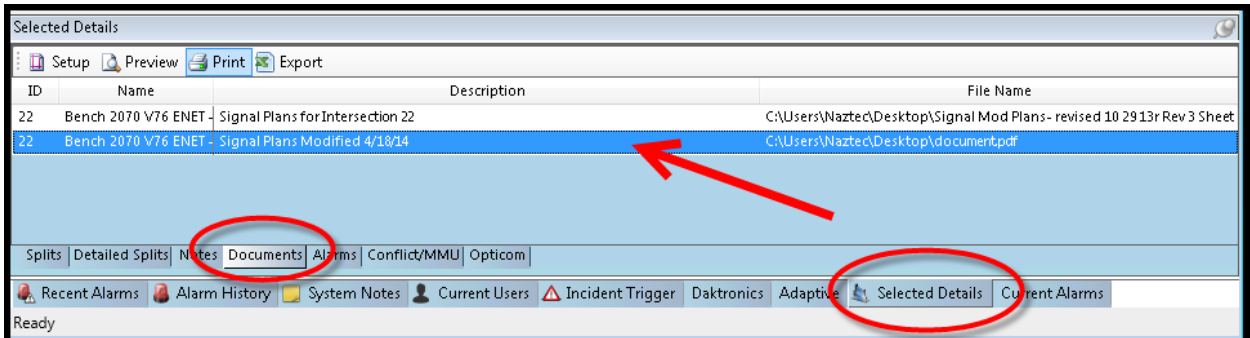
Viewing the documents requires third party programs such as Excel, Word, AutoCAD, Adobe, Paint, etc, to view the corresponding *Document*. These programs are not included in the basic ATMS software package.

To create a *Document*, select a controller from the *List* or *Map* view, then choose *Utilities...Documents* to associate files, such as spreadsheets or drawings, related to the intersection. Type the desired text in the “Description” box, and “Browse” to the desired file in the “File” box.



**As of ATMS 2.10.1, the user can select multiple documents via this selection.**

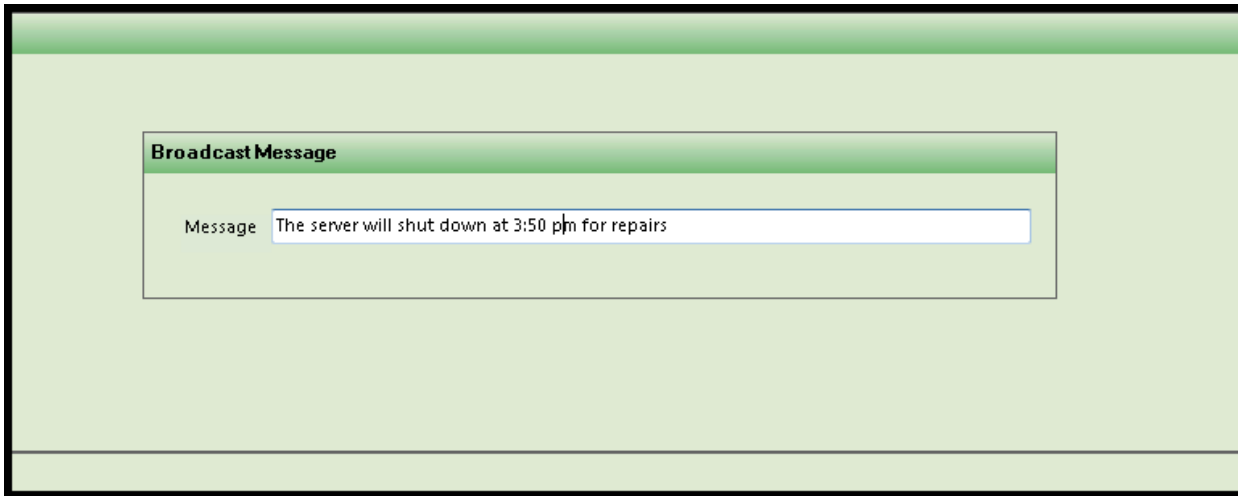
When the controller is selected (GIS or List), the Documents file can be viewed in the Detail Pane by choosing Selected Details...Documents. Double-clicking on the file name will launch the application and file.



#### 5.4.4 Broadcast Messages

**ATMS** provides the ability to send text messages to everybody logged on to the system. Navigate to *Utilities...Broadcast Message*. A text box will appear in the main *Overview Pane*. The message box will accept any ASCII character within the message.

Select “Send” to send the message, or “Close” to exit.

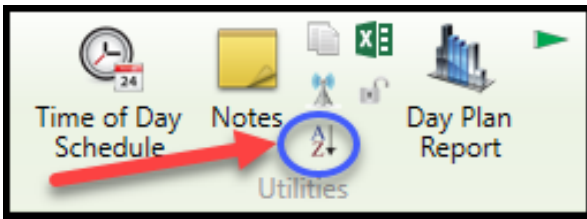


The screenshot shows a dialog box titled "Broadcast Message" with a green header bar. Inside the dialog, there is a label "Message" followed by a text input field containing the text "The server will shut down at 3:50 pm for repairs". The dialog box is centered on a light green background.

The text message will be sent to everyone that is logged on at the time it is sent.



## 5.4.5 Sort Day Plans



**ATMS** provides the ability to sort time entries that are not displaying chronologically on a Day Plan database. The following picture shows an example of a Day Plan that has mixed entries, and could be sorted to more easily read the chronological order. By performing the *Sort Day Plan* action, the entries will be automatically organized.

The database below needs sorting.

Event	Hour	Minute	Action
Event 1	2	0	99
Event 2	0	0	99
Event 3	11	23	99
Event 4	15	18	1
Event 5	11	0	15
Event 6	2	2	12
Event 7	23	0	11
Event 8	21	0	13
Event 9	0	0	0
Event 10	0	0	0
Event 11	0	0	0
Event 12	0	0	0

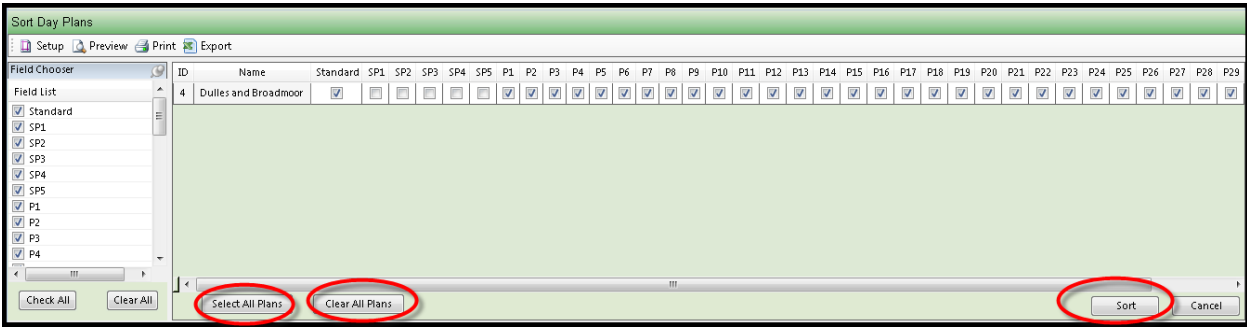
To perform a *Sort Day Plan*, select a controller or multiple controllers from the *List* or *GIS* map. Next, navigate to *Utilities...Sort Day Plans*.

The selected controller(s) will appear with boxes for the Standard and Special databases and all 32 (64 for Scout.x) Day Plans in the Permanent database. Check all desired boxes to perform the “Sort”.

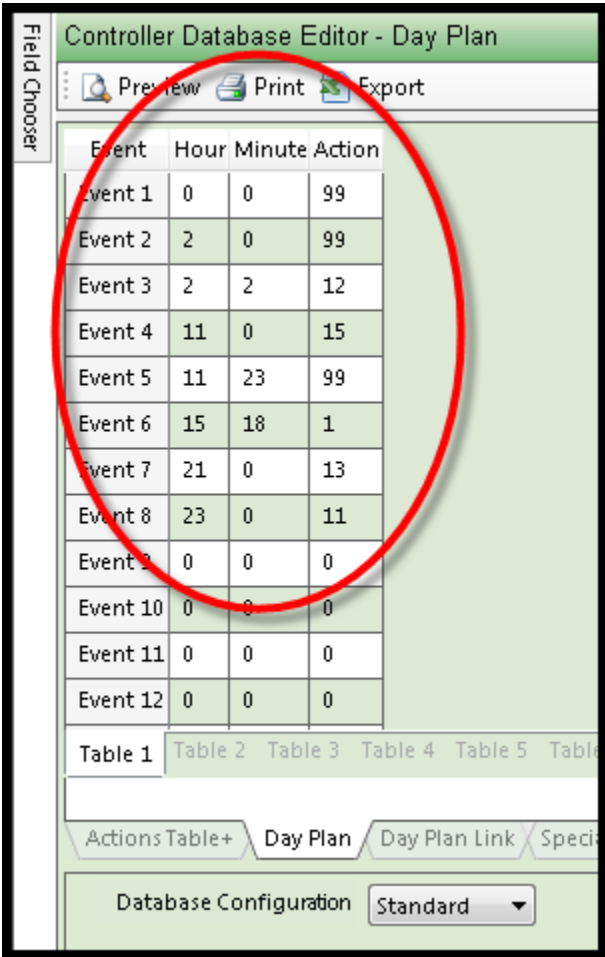
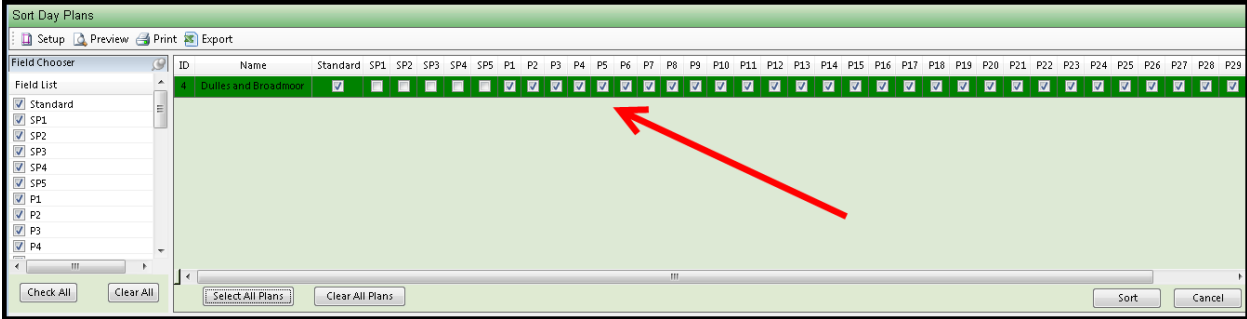
The *Field Chooser* window enables the user to select which database and Plan boxes are displayed.

All of the boxes can be selected by selecting the “Select All Plans” button.

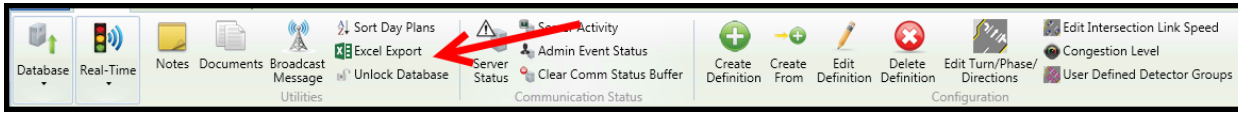
All boxes can be cleared for re-selection by selecting the “Clear All Plans” button.



Select the “Sort” button once your selections have been made. Each controller that properly executes the “Sort” will appear **GREEN**.



## 5.4.6 Excel Export



**ATMS** provides the ability to export a controller database into a custom-formatted Microsoft Excel timing sheet. This feature is designed to enable users to customize their own Excel-based file, and export the entire controller database or specific data parameters to the file.

**Cubic | Trafficware does not provide or maintain these Excel files, but provides this tool for the customer customize their exports.** Once each file is prepared to use for this tool, save or copy it to the server at the: “C:/Naztec/ExcelExport” folder. We have provided in ATMS a NEMA TS2 (v61.x) Excel file for your reference.

To perform an *Excel Export*, select a controller from the *List* or *GIS* map, then navigate to *Actions...Utilities...Excel Export*. A list of available Excel files will appear under “Template Name”. This list is generated from the available files in the “Template” folder. Select the template.

In the bottom left of the window, select the Database to export. The default will be the “Standard”.

Select the “Export” button to execute the command. A new window will appear to save the file to a specified location and designate a custom file name.



Starting with ATMS 2.9, Cubic | Trafficware has modified all the names that are used by the Excel Template. The updated names are unique based on controller type and data parameter. Each name will have a unique identifier that can be used by the agency’s Excel development team to create their customized Excel spreadsheet. Once referenced, any future changes to the ATMS database will not affect the Excel spreadsheet from working.

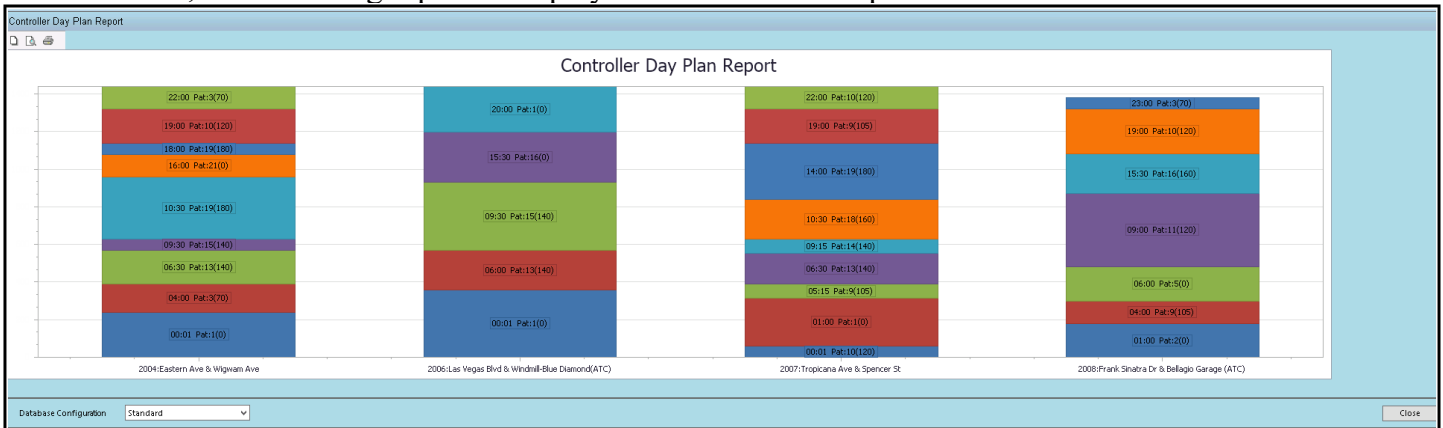
## 5.4.7 Day Plan Report

The Day Plan report is a Utility that allows the user to select multiple controllers and to view their day plans side-by-side to assure that intersections are lining up with coordination schedules.

First select a controller or multiple controllers and then Select Utilities->Day Plan report as shown below:

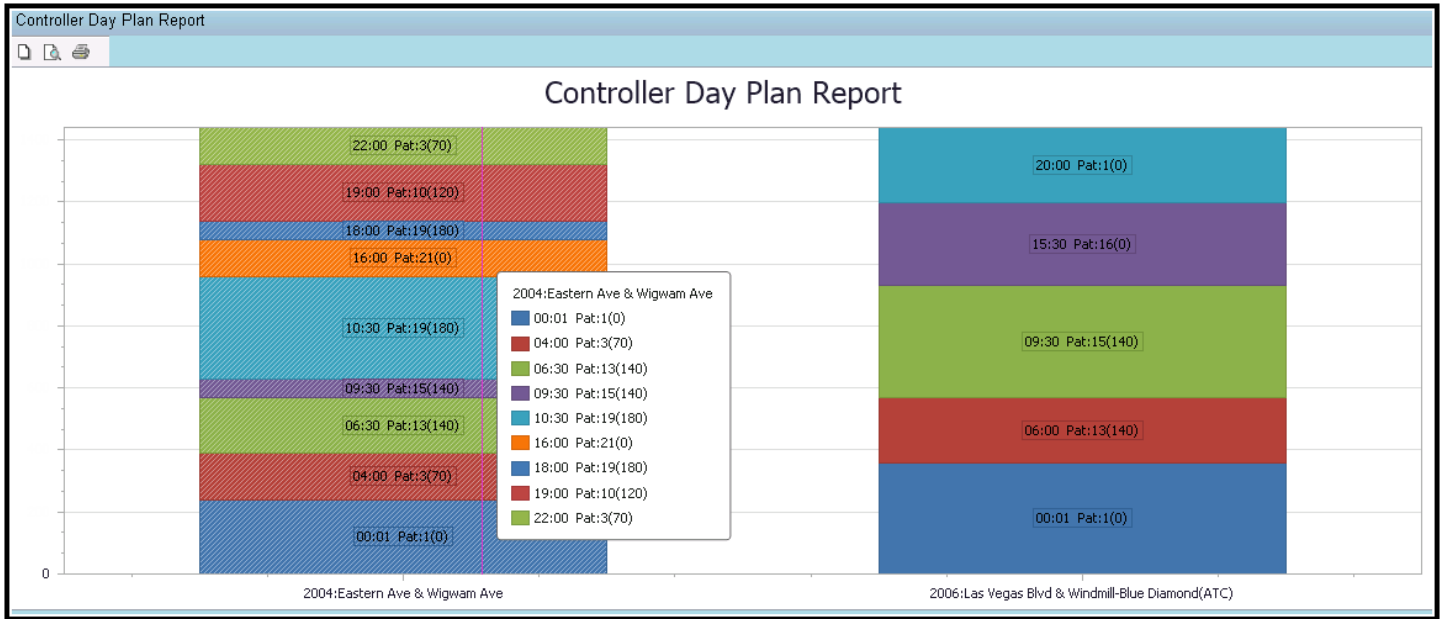
Status	Lock	ID	Name	Notes	Revision	Offline	Docs	Drop	Port	Type
<input type="radio"/>		4	Hub 12 serial			<input checked="" type="checkbox"/>	<input type="checkbox"/>	3	E-NET-5003	NTCIP 76.x.ATC Ether
<input type="radio"/>		5	Testv76 2070 controller			<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	E-NET-5001	NTCIP 76.x.2070 Ether
<input type="radio"/>		99	16 ph 4 ring Template			<input checked="" type="checkbox"/>	<input type="checkbox"/>	189	E-NET-5189	NTCIP 76.x.ATC Ether
<input type="radio"/>		149	A-ATMS Test Controller			<input checked="" type="checkbox"/>	<input type="checkbox"/>	40	E-NET-5040	NTCIP 61.x.TS2 Ether
<input type="radio"/>		998	Template M53 w/ D connector 40 Det			<input checked="" type="checkbox"/>	<input type="checkbox"/>	9	E-NET-5009	NTCIP 76.x.ATC Ether
<input type="radio"/>		999	Template-M53 Hub 2			<input checked="" type="checkbox"/>	<input type="checkbox"/>	39	E-NET-5039	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2002	Flamingo Rd & Nellis Blvd (ATC)	<input checked="" type="checkbox"/>	76.13m	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2	E-NET-5002	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2003	Las Vegas Blvd & Range Rd	<input type="checkbox"/>	76.08f	<input type="checkbox"/>	<input checked="" type="checkbox"/>	120	E-NET-5120	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2004	Eastern Ave & Wigwam Ave	<input checked="" type="checkbox"/>	76.08f	<input type="checkbox"/>	<input checked="" type="checkbox"/>	143	E-NET-5143	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2006	Las Vegas Blvd & Windmill-Blue	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	6	E-NET-5006	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2007	Tropicana Ave & Spencer St	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	99	E-NET-5099	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2008	Frank Sinatra Dr & Bellagio Gara	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	E-NET-5008	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2009	Blue Diamond Rd & I-15 NB Ram	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			6.x.ATC Ether
<input checked="" type="radio"/>		2010	Blue Diamond Rd & I-15 SB Ram	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			6.x.ATC Ether
<input checked="" type="radio"/>		2011	Boulder Hwy & Desert Inn Rd-La	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			6.x.ATC Ether
<input checked="" type="radio"/>		2012	Blue Diamond Rd & Dean Martin-Imuust (ATC)	<input checked="" type="checkbox"/>	76.12a	<input type="checkbox"/>	<input type="checkbox"/>			6.x.ATC Ether
<input checked="" type="radio"/>		2013	Boulder Hwy & Nellis Blvd (TSP)	<input type="checkbox"/>	76.08f	<input type="checkbox"/>	<input type="checkbox"/>			6.x.ATC Ether
<input checked="" type="radio"/>		2014	Las Vegas Blvd & Warm Springs Rd (ATC)	<input type="checkbox"/>	76.12b	<input type="checkbox"/>	<input type="checkbox"/>	14	E-NET-5014	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2015	Flamingo Rd & Burnham Rd	<input checked="" type="checkbox"/>	76.08f	<input type="checkbox"/>	<input checked="" type="checkbox"/>	76	E-NET-5076	NTCIP 76.x.ATC Ether
<input checked="" type="radio"/>		2016	Sandhill Rd & Harmon Ave	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	139	E-NET-5139	NTCIP 76.x.ATC Ether

Once selected, the following report is displayed on the overview pane:

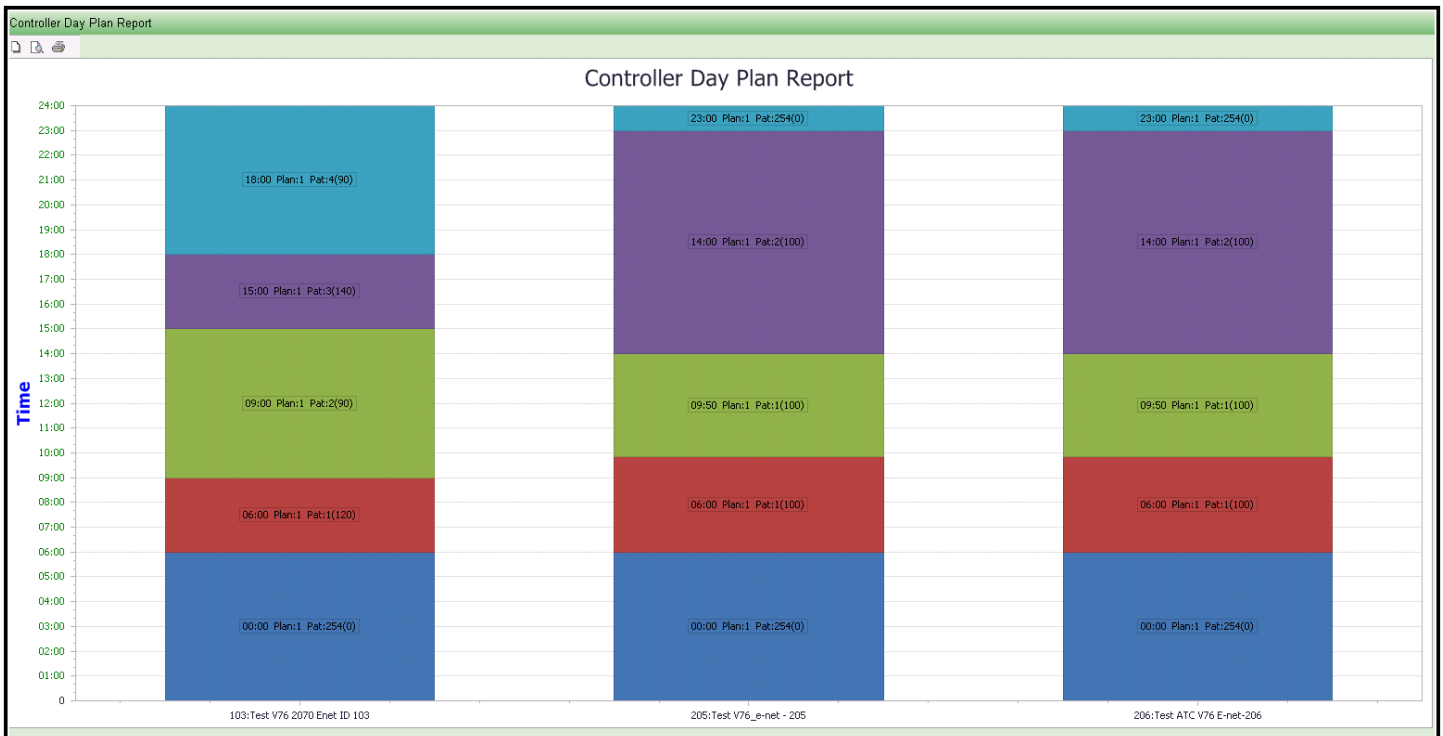


Each controller's schedule is displayed along the X axis. Each schedules is displayed along the Y axis using military time from midnight (00:00:00 AM) to 23:59:59 PM. Each color change represents a new pattern for that controller. The Y-axis scale is in minutes that goes from 0 minutes (midnight) to 1440 minutes (the following day's midnight).

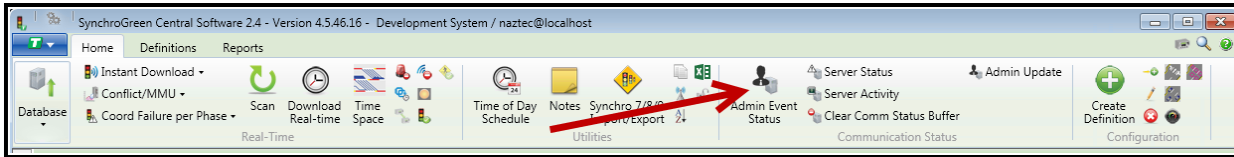
Hovering the mouse over a schedule identifies the particulars of a controller's schedule in a list view.



This tool allows users to quickly verify that controllers along a corridor have their schedules lined up for coordination.



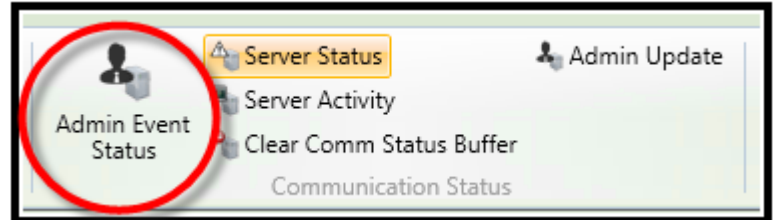
## 5.5 Communication Status



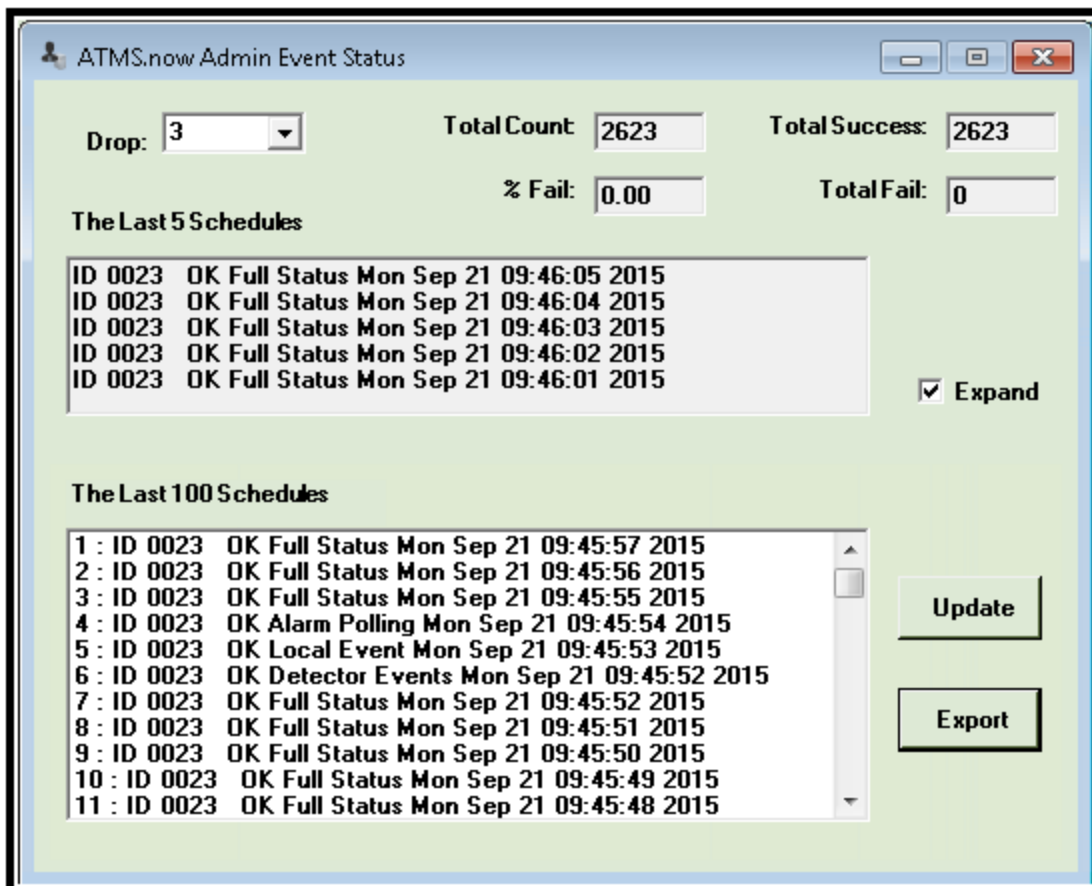
The Communication Status section is used to interface directly to the Comm Server and Administrator to view various status screens. This includes communication status and Administrator event status. This area can assist the user in determining the stability of the system or various communications links.

### 5.5.1 Admin Event Status

The Admin Event Status allows the user that is running the client to investigate the integrity of the administrator program. They user must select the Drop via the pull down selection. Once selected, the Admin Event Status will list the scheduled tasks that it has completed and issue a Date/Timestamp for monitoring purposes. The top section displays the communications integrity, the second section display

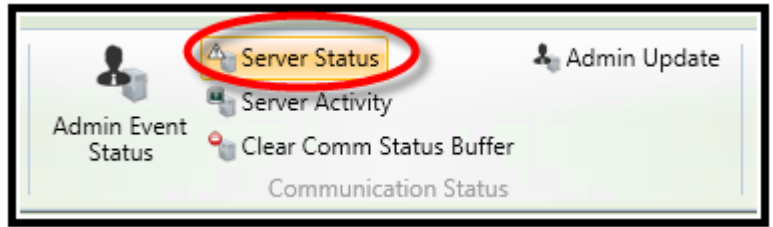


live events as they occur in real-time and the bottom section will show the last 100 events once the **Update** key is selected. The last 100 events can be exported to a text file via the **Export** key for user convenience.



## 5.5.2 Server Status

The Server Status will display Communications Server activity based on the drop that the user selects. This information, such as transfer time, successes/failures of the communications lines and activity queue counts can assist users in validating their communications.



ATMS.now Comm Server Status

Drop:

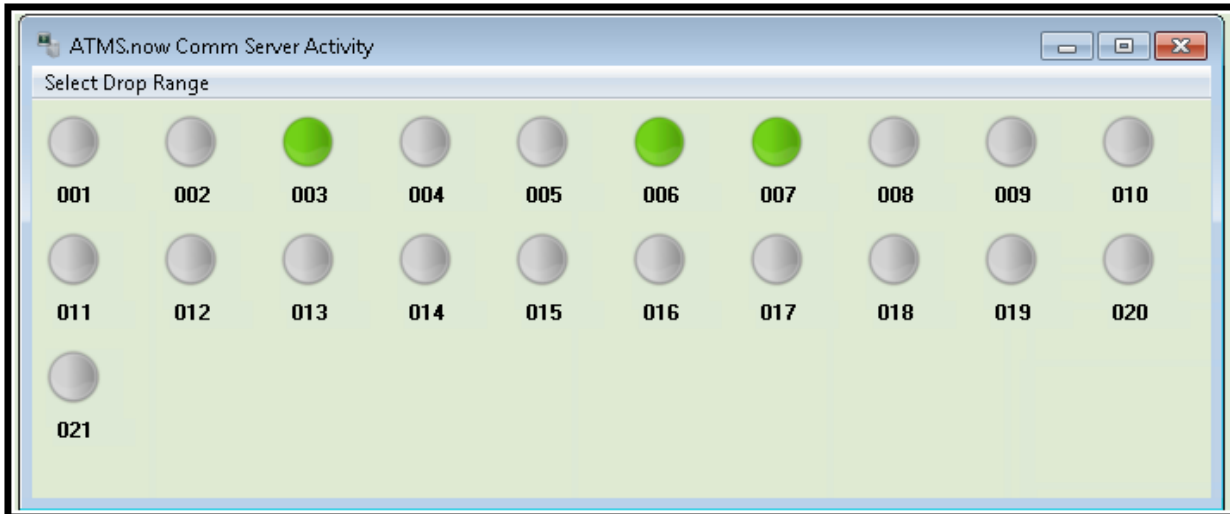
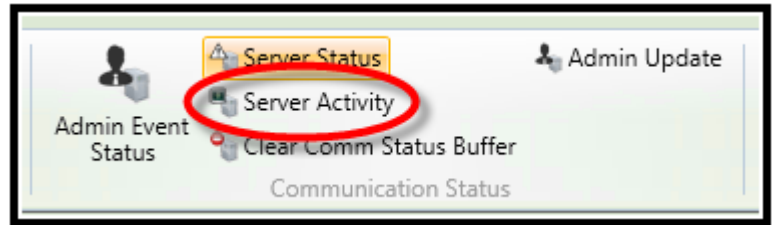
Current	Status
Activity: <input type="text" value="Full Status"/>	Last Transfer: <input type="text" value="0.094 sec(s)"/>
Controller ID: <input type="text" value="26"/>	Total Requests: <input type="text" value="3407"/>
User ID: <input type="text" value="0"/>	Total Success: <input type="text" value="3406"/>

Queue Counts	Drop Setup
Upload/Download: <input type="text" value="0"/>	Port: <input type="text" value="5006"/>
Scan: <input type="text" value="0"/>	Connect Type: <input type="text" value="ETHERNET"/>
Camera: <input type="text" value="0"/>	Check Incoming: <input type="text" value="OFF"/>
Alarm Poll: <input type="text" value="0"/>	Line: <input type="text" value="CONNECTED"/>
Local Volume: <input type="text" value="0"/>	

### 5.5.3 Server Activity

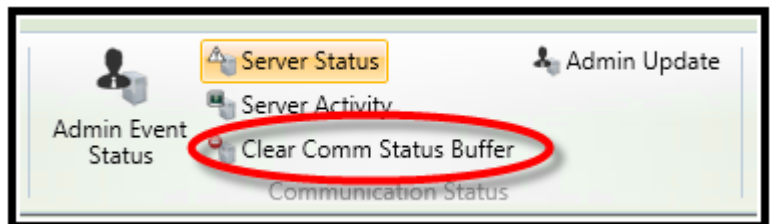
The server Activity selection will allow the user to view the current activity on each drop.

A  display indicates comm activity where a  indicates no comm activity. A drop down selection is available for the user to display up to 50 drops at a time simultaneously.

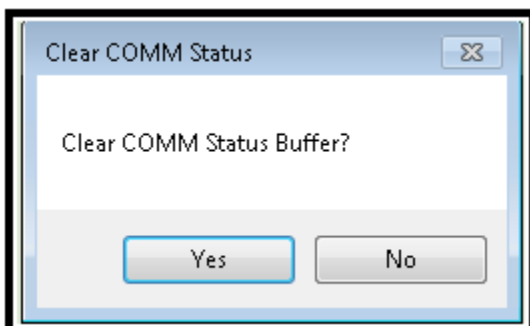


### 5.5.4 Clear Comm Status Buffer

The Clear Comm Status Buffer allows the user to clear out communications for all controllers and force the client to repopulate the communications on the list view. This can be used to clear status of controllers that you have put offline or that you have disabled the Full status or RYG Status. Once cleared you should see a  displayed on the list view.



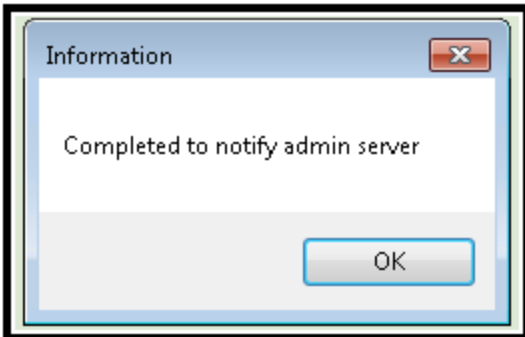
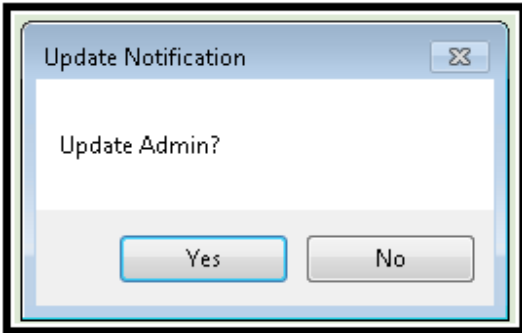
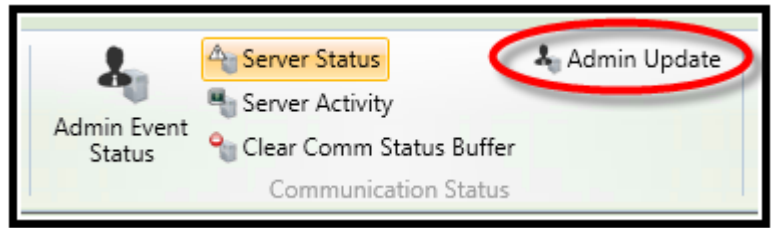
Once this is selected, the following confirmation screen will be displayed:





## 5.5.5 Admin Update

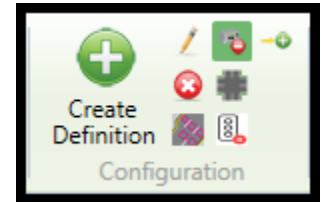
The Admin update is used to update the Administrator if the user adds a new controller to the ATMS system, edits the configuration of a controller or modifies any scheduled activity. If you run any of the above activities and *do not* run **Admin Update**, the administrator will not recognize that you have modified it. It has been added to allow the operator to control when Administrator updates occur so as not to impact users currently running ATMS. When you run Admin Update, the following is displayed to verify that the Update was initialized.



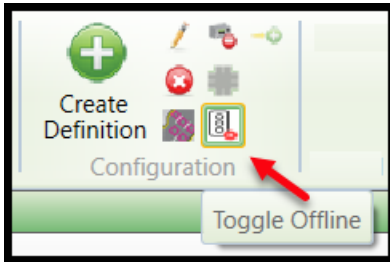
It is highly recommended to run Admin updates after modifying anything in the configuration section, adding or modifying Groups/Flex Groups, modifying the Controller Offline status or adding/modifying scheduled activities.

## 5.6 Configuration

The following selections are described *Configuration* settings of basic controller setup and edit screens. Please note that each function can operate on one or multiple controllers at a time.



### 5.6.1 Controllers Offline

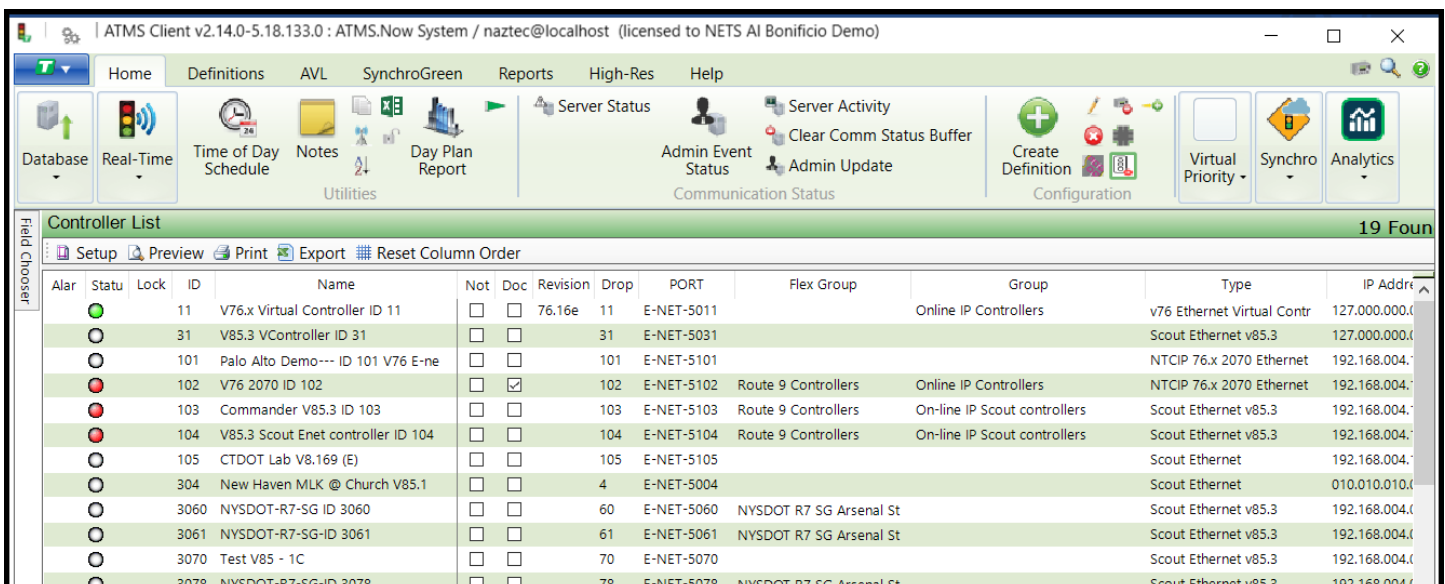


The *Controllers Offline* function allows the user to limit the communication of information to only those devices that are actually “online” and communicating to the central server. By designating controllers that are offline, you will isolate the controllers that are not ready for communication from the controllers that are operational and need to communicate to **ATMS**. The user should make sure that all controllers that are communicating “on-line”.

If a controller status on the List or GIS view does not show the appropriate color-coded condition, verify that the controller is properly assigned to the “on-line” side of the list.

**NOTE: In versions prior to ATMS 2.14, this function is only available in the Definitions module. Please refer to Chapter 6 for more information.**

To toggle a controller online/offline the user must select it via the list or map view. The user may also select multiple controllers and run this function. As an example, refer to the screen shot below. Controllers 102, 103 and 104 are not communicating and the agency want to toggle them offline.



Alar	Statu	Lock	ID	Name	Not	Doc	Revision	Drop	PORT	Flex Group	Group	Type	IP Addr
			11	V76.x Virtual Controller ID 11	<input type="checkbox"/>	<input type="checkbox"/>	76.16e	11	E-NET-5011		Online IP Controllers	v76 Ethernet Virtual Contr	127.000.000.0
			31	V85.3 VController ID 31	<input type="checkbox"/>	<input type="checkbox"/>		31	E-NET-5031			Scout Ethernet v85.3	127.000.000.0
			101	Palo Alto Demo--- ID 101 V76 E-ne	<input type="checkbox"/>	<input type="checkbox"/>		101	E-NET-5101			NTCIP 76.x 2070 Ethernet	192.168.004.7
			102	V76 2070 ID 102	<input type="checkbox"/>	<input checked="" type="checkbox"/>		102	E-NET-5102	Route 9 Controllers	Online IP Controllers	NTCIP 76.x 2070 Ethernet	192.168.004.7
			103	Commander V85.3 ID 103	<input type="checkbox"/>	<input type="checkbox"/>		103	E-NET-5103	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.7
			104	V85.3 Scout Enet controller ID 104	<input type="checkbox"/>	<input type="checkbox"/>		104	E-NET-5104	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.7
			105	CTDOT Lab V8.169 (E)	<input type="checkbox"/>	<input type="checkbox"/>		105	E-NET-5105			Scout Ethernet	192.168.004.7
			304	New Haven MLK @ Church V85.1	<input type="checkbox"/>	<input type="checkbox"/>		4	E-NET-5004			Scout Ethernet	010.010.010.0
			3060	NYS DOT-R7-SG ID 3060	<input type="checkbox"/>	<input type="checkbox"/>		60	E-NET-5060	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
			3061	NYS DOT-R7-SG-ID 3061	<input type="checkbox"/>	<input type="checkbox"/>		61	E-NET-5061	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
			3070	Test V85 - 1C	<input type="checkbox"/>	<input type="checkbox"/>		70	E-NET-5070			Scout Ethernet v85.3	192.168.004.0
			3078	NYS DOT-R7-SG-ID 3078	<input type="checkbox"/>	<input type="checkbox"/>		78	E-NET-5078	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0

Simply select the intersections and hit the toggle offline button on the Actions toolbar.

Alar	Statu	Lock	ID	Name	Not	Doc	Revision	Drop	PORT	Flex Group	Group	Type	IP Addr
	●		11	V76.x Virtual Controller ID 11	<input type="checkbox"/>	<input type="checkbox"/>	76.16e	11	E-NET-5011		Online IP Controllers	v76 Ethernet Virtual Contr	127.000.000.0
	○		31	V85.3 VController ID 31	<input type="checkbox"/>	<input type="checkbox"/>		31	E-NET-5031			Scout Ethernet v85.3	127.000.000.0
	○		101	Palo Alto Demo--- ID 101 V76 E-ne	<input type="checkbox"/>	<input type="checkbox"/>		101	E-NET-5101			NTCIP 76.x 2070 Ethernet	192.168.004.7
	●		102	V76 2070 ID 102	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		102	E-NET-5102	Route 9 Controllers	Online IP Controllers	NTCIP 76.x 2070 Ethernet	192.168.004.7
	●		103	Commander V85.3 ID 103	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		103	E-NET-5103	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.7
	●		104	V85.3 Scout Enet controller ID 104	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		104	E-NET-5104	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.7
	○		105	CTDOT Lab V8.169 (E)	<input type="checkbox"/>	<input type="checkbox"/>		105	E-NET-5105			Scout Ethernet	192.168.004.7
	○		304	New Haven MLK @ Church V85.1	<input type="checkbox"/>	<input type="checkbox"/>		4	E-NET-5004			Scout Ethernet	010.010.010.0
	○		3060	NYS DOT-R7-SG ID 3060	<input type="checkbox"/>	<input type="checkbox"/>		60	E-NET-5060	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		3061	NYS DOT-R7-SG-ID 3061	<input type="checkbox"/>	<input type="checkbox"/>		61	E-NET-5061	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		3070	Test V85 - 1C	<input type="checkbox"/>	<input type="checkbox"/>		70	E-NET-5070			Scout Ethernet v85.3	192.168.004.0
	○		3078	NYS DOT-R7-SG-ID 3078	<input type="checkbox"/>	<input type="checkbox"/>		78	E-NET-5078	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		3079	NYS DOT-R7-SG-ID 3079	<input type="checkbox"/>	<input type="checkbox"/>		79	E-NET-5079	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		3080	NYS DOT-R7-SG-ID 3080	<input type="checkbox"/>	<input type="checkbox"/>		80	E-NET-5080	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		1306	NYS DOT-R7-SG-ID 3060-BKUP	<input type="checkbox"/>	<input type="checkbox"/>		160	E-NET-5160	NYS DOT R7 SG Arsenal St		NTCIP 76.x 2070 Ethernet	192.168.004.0
	○		1306	NYS DOT-R7-SG-ID 3061-BKUP	<input type="checkbox"/>	<input type="checkbox"/>		161	E-NET-5161	NYS DOT R7 SG Arsenal St		NTCIP 76.x 2070 Ethernet	192.168.004.0

A message will be displayed to ensure that the user wants to turn the controllers offline.

Alar	Statu	Lock	ID	Name	Not	Doc	Revision	Drop	PORT	Flex Group	Group	Type	IP Addr
	●		11	V76.x Virtual Controller ID 11	<input type="checkbox"/>	<input type="checkbox"/>	76.16e	11	E-NET-5011		Online IP Controllers	v76 Ethernet Virtual Contr	127.000.000.0
	○		31	V85.3 VController ID 31	<input type="checkbox"/>	<input type="checkbox"/>		31	E-NET-5031			Scout Ethernet v85.3	127.000.000.0
	○		101	Palo Alto Demo--- ID 101 V76 E-ne	<input type="checkbox"/>	<input type="checkbox"/>		101	E-NET-5101			NTCIP 76.x 2070 Ethernet	192.168.004.7
	●		102	V76 2070 ID 102	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		102	E-NET-5102	Route 9 Controllers	Online IP Controllers	NTCIP 76.x 2070 Ethernet	192.168.004.7
	●		103	Commander V85.3 ID 103	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		103	E-NET-5103	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.7
	●		104	V85.3 Scout Enet controller ID 104	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		104	E-NET-5104	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.7
	○		105	CTDOT Lab V8.169 (E)	<input type="checkbox"/>	<input type="checkbox"/>						Scout Ethernet	192.168.004.7
	○		304	New Haven MLK @ Church V85.1	<input type="checkbox"/>	<input type="checkbox"/>						Scout Ethernet	010.010.010.0
	○		3060	NYS DOT-R7-SG ID 3060	<input type="checkbox"/>	<input type="checkbox"/>						Scout Ethernet v85.3	192.168.004.0
	○		3061	NYS DOT-R7-SG-ID 3061	<input type="checkbox"/>	<input type="checkbox"/>						Scout Ethernet v85.3	192.168.004.0
	○		3070	Test V85 - 1C	<input type="checkbox"/>	<input type="checkbox"/>						Scout Ethernet v85.3	192.168.004.0
	○		3078	NYS DOT-R7-SG-ID 3078	<input type="checkbox"/>	<input type="checkbox"/>						Scout Ethernet v85.3	192.168.004.0
	○		3079	NYS DOT-R7-SG-ID 3079	<input type="checkbox"/>	<input type="checkbox"/>						Scout Ethernet v85.3	192.168.004.0
	○		3080	NYS DOT-R7-SG-ID 3080	<input type="checkbox"/>	<input type="checkbox"/>		80	E-NET-5080	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		1306	NYS DOT-R7-SG-ID 3060-BKUP	<input type="checkbox"/>	<input type="checkbox"/>		160	E-NET-5160	NYS DOT R7 SG Arsenal St		NTCIP 76.x 2070 Ethernet	192.168.004.0
	○		1306	NYS DOT-R7-SG-ID 3061-BKUP	<input type="checkbox"/>	<input type="checkbox"/>		161	E-NET-5161	NYS DOT R7 SG Arsenal St		NTCIP 76.x 2070 Ethernet	192.168.004.0

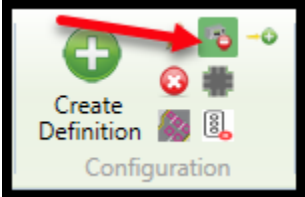
**Toggle Offline** ✕

Are you sure you want to proceed with toggle of the selected controller(s) online: 102-104 ?  
Please note admin update is required for changes to take effect.

Hitting **Yes** will turn them offline. However, as the message indicates, the user must update the Admin to finalize the offline status. Once the Admin is updated, the list view screen is shown below.

Alar	Statu	Lock	ID	Name	Not	Doc	Revision	Drop	PORT	Flex Group	Group	Type	IP Addr
	●		11	V76.x Virtual Controller ID 11	<input type="checkbox"/>	<input type="checkbox"/>	76.16e	11	E-NET-5011		Online IP Controllers	v76 Ethernet Virtual Contr	127.000.000.0
	○		31	V85.3 VController ID 31	<input type="checkbox"/>	<input type="checkbox"/>		31	E-NET-5031			Scout Ethernet v85.3	127.000.000.0
	○		101	Palo Alto Demo--- ID 101 V76 E-ne	<input type="checkbox"/>	<input type="checkbox"/>		101	E-NET-5101			NTCIP 76.x 2070 Ethernet	192.168.004.0
	○		102	V76 2070 ID 102	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		102	E-NET-5102	Route 9 Controllers	Online IP Controllers	NTCIP 76.x 2070 Ethernet	192.168.004.0
	○		103	Commander V85.3 ID 103	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		103	E-NET-5103	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.0
	○		104	V85.3 Scout Enet controller ID 104	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		104	E-NET-5104	Route 9 Controllers	On-line IP Scout controllers	Scout Ethernet v85.3	192.168.004.0
	○		105	CTDOT Lab V8.169 (E)	<input type="checkbox"/>	<input type="checkbox"/>		105	E-NET-5105			Scout Ethernet	192.168.004.0
	○		304	New Haven MLK @ Church V85.1	<input type="checkbox"/>	<input type="checkbox"/>		4	E-NET-5004			Scout Ethernet	010.010.010.0
	○		3060	NYS DOT-R7-SG ID 3060	<input type="checkbox"/>	<input type="checkbox"/>		60	E-NET-5060	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		3061	NYS DOT-R7-SG-ID 3061	<input type="checkbox"/>	<input type="checkbox"/>		61	E-NET-5061	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		3070	Test V85 - 1C	<input type="checkbox"/>	<input type="checkbox"/>		70	E-NET-5070			Scout Ethernet v85.3	192.168.004.0
	○		3078	NYS DOT-R7-SG-ID 3078	<input type="checkbox"/>	<input type="checkbox"/>		78	E-NET-5078	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0
	○		3079	NYS DOT-R7-SG-ID 3079	<input type="checkbox"/>	<input type="checkbox"/>		79	E-NET-5079	NYS DOT R7 SG Arsenal St		Scout Ethernet v85.3	192.168.004.0

### 5.6.2 Offline List



If a controller is assigned to the Offline list then the central server will not attempt to communicate to it. If you remove the controller from the offline list, the central will attempt to establish communications with this unit. To add or remove controllers from the *Offline List*, navigate to *Controllers Offline...Offline List*. To add or remove controllers from the list, highlight the controller(s) from the appropriate list, then click the *Add*, *Remove*, *Add All*, or *Remove All*.

The *Currently Assigned* list is the group of controllers that are assigned to the *Offline List*. ATMS will not attempt to communicate with the controllers listed in the *Currently Assigned* category.

Select “*Apply*” to save and close the window.

Controllers Offline		Controllers Online	
ID	Name	ID	Name
31	V85.3 VController ID 31	11	V76.x Virtual Controller ID 11
101	Palo Alto Demo--- ID 101 V76 E-net	103	Commander V85.3 ID 103
102	V76 2070 ID 102	104	V85.3 Scout Enet controller ID 104
105	CTDOT Lab V8.169 (E)	304	New Haven MLK @ Church V85.1
3060	NYS DOT-R7-SG ID 3060		
3061	NYS DOT-R7-SG-ID 3061		
3070	Test V85 - 1C		
3078	NYS DOT-R7-SG-ID 3078		
3079	NYS DOT-R7-SG-ID 3079		
3080	NYS DOT-R7-SG-ID 3080		
13060	NYS DOT-R7-SG-ID 3060-BKUP		
13061	NYS DOT-R7-SG-ID 3061-BKUP		
13078	NYS DOT-R7-SG-ID 3078-BKUP		
13079	NYS DOT-R7-SG-ID 3079-BKUP		
13080	NYS DOT-R7-SG-ID 3080-BKUP		

**NOTE: In ATMS 2.14 this function has been moved to the *Home-Configuration* section. Please refer to Chapter 5 for more information.**

### 5.6.3 Create Definition

This section shows how to define a new controller database in your system.

Select the *Home* Module. Choose *Configuration...Create Definition* from the *Action* pane.



The New Controller screen is displayed as shown in this section. From this new menu, select the controller parameters. You can “tab” through each data entry window.

The Controller Definition screen establishes the controller ID, controller type and how the controller communicates with the system.

A screenshot of a web-based form titled 'Required Information'. The form contains several fields: 'Controller ID' with the value '407' and an 'Auto-ID' button; 'Controller Name' with the value 'Munson Rd @ Bowling Pin Way'; 'Controller Type' with a dropdown menu showing 'NTCIP 76.x ATC Ethernet'; 'Drop' with a dropdown menu showing '14: E-NET-5014'; 'IP Address' with the value '010.002.003.115' and an 'IP' dropdown; 'Offline' with a checked checkbox; and 'SynchroGreen' with an unchecked checkbox. A red arrow points to the 'Offline' checkbox.

**Note:** New with 2.15 controllers can now be toggled to the offline list in the *Create Definition* screen.

Controller ID is a required entry and each controller in your system is assigned a unique ID (1-63,535). Use the Auto-ID to generate the first ID not currently used in the system. Also note that the controller ID, Synchro ID, and SynchroGreen ID's must be the same to exchange data between them.

When adding an intersection to SynchroGreen the SynchroGreen tab must be checked in order for the definition to be active. It is recommended that each SynchroGreen ID have its own individual drop.

The user should assign a descriptive Controller Name. This name can be used to select the controller from the system. The *Controller Name* value supports a full ASCII format.

**ATMS** is capable of addressing multiple controllers on a single Drop. However, if the Drop is assigned to a master, then the master will limit the subsystem on the Drop to 32 intersections. Drop 1 is the first communication “port” on the Comm Server. The number of files that can operate must be manually set in the system initialization files. The *Controller Type* must be compatible with the Drop selected. You will also notice that the Drop settings (baud rate, IP host address, etc.) are not set in the controller definition. Please contact your Cubic | Trafficware representative for details on configuring the Drop settings.

While V76 and below controller types can share drops Scout.x controllers **MUST** be polled separately from other controller types to ensure efficient polling.

When defining a new Ethernet type controller, enhanced validation testing has been added to the controller Definition screen. Each controller **must** have a unique ID, IP address and Port number combination or it will not be defined.

**Required Information**

Controller ID:  Auto-ID

Controller Name:

Controller Type:

Drop:

Offline:

SynchroGreen:

---

**Optional Information**

Master:  Flex Groups:

Group:  Existing   New

Delay Receive:  1000

Delay Transmit:  X-Ref (INV) #:

Location

Latitude:  39.4659540280307 Azimuth:  0

Longitude:  -87.4146827352933

Altitude:  0 (default location used)

Phone:

Opticom:  Preempt:

Firmware OS:

# of Units:  0 ID1:  0 ID2:  0

R5-232Temperature Probe

Emergency now

Priority Type:  Priority Time (sec):  0

Main:

Cross:

Special 1:

Special 2:

Special 3:

Special 4:

Special 5:

**Required Information**

Controller ID:  302 Auto-ID

Controller Name:  Commander v85.3

Controller Type:  Scout Ethernet v85.3/v85.4

Drop:  2 : E-NET-5002

IP Address:  192.168.001.222 IP

Offline:

SynchroGreen:

---

**Optional Information**

Master:  Flex Groups:

Group:  Existing  Scout Online  New

Delay Receive:  1000

Delay Transmit:  0 X-Ref (INV) #:  0

Location

Latitude:  39.4664467254783 Azimuth:  -9

Longitude:  -87.4140171321392

Altitude:  0

Phone:

Opticom:  Preempt:

Firmware OS:  Linux

# of Units:  0 ID1:  0 ID2:  0

R5-232Temperature Probe

Emergency now

Priority Type:  Priority Time (sec):  0

Main:  South 3rd Street

Cross:  Wabash Street

Special 1:

Special 2:

Special 3:

Special 4:

Special 5:

When a controller is defined as an Ethernet-based controller type, an additional box will appear for the associated IP address.

**Required Information**

Controller ID:  302 Auto-ID

Controller Name:  Commander v85.3

Controller Type:  Scout Ethernet v85.3/v85.4

Drop:  2 : E-NET-5002

IP Address:  192.168.001.222 IP

Offline:

SynchroGreen:

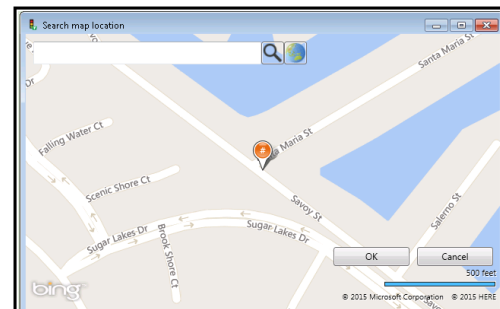
When entering an IP address, **ATMS** requires all three numbers to be entered for each octet of the IP address. For example, when programming the controller IP address the user enters “192.168.105.55”. When entering it in **ATMS** it is required to enter “055” in the last octet. This is not required when entering the corresponding entry in the controller.

The controller definition provides a pull-down list for a Field Master, Groups and/or Flex Groups, which must be assigned before the user can select them from the list. A controller can only be associated with one *Group*. Controllers can be associated with more than one Flex Group. Simply use the CTRL key along with the left mouse button to select the necessary Flex Groups. The Master definition is blank indicating that the system communicates directly with the controller without going through a master. Associating a controller with a Master will route the controller communication through the Master controller.

The default Delay Receive in the controller definition is 1000 ms (1 second). **ATMS** will wait one (1) second after sending a message to the controller before retransmitting the same message. **ATMS** will make a number of attempts based on the PACKET\_COMM\_RETRY parameter specified in the server initialization file. It may be necessary to increase the Delay Receive value if there is significant time latency in the communication system (such as a long turn-around time for a “slow” modem).

The default Delay Transmit is zero. It is recommended that the user does not change this value. Adding a delay prior to each transmit message will only slow down the communication system and will not compensate for “slow modem devices” in the field.

The Location section allows the user to define/move the controller on the Bing Map... simply hit the search Icon and the Bing map will come up in the Road view at the defined Latitude and Longitude. The controller can be moved and the Latitude and Longitude will be updated.



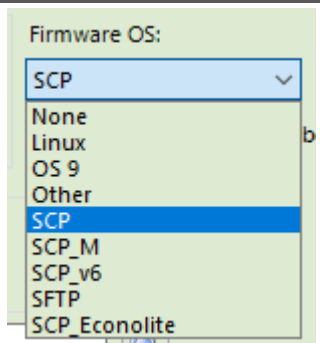
The Opticom box notifies the system that when incoming preemptions are received by **ATMS**, the system will automatically generate a log retrieval process for the corresponding device. The user can set up two Opticom two channel cards (ID1 and ID2) along with the preemptions (one preemption per channel) that each card will call. The data logs are stored in the server for future use and can be accessed in the “Opticom Report” of the *Reports Module*. The Opticom events are also displayed in real-time on the *Opticom* tab of the *Details* pane.

**NOTE: If the definition is required to collect Purdue High Resolution Data please see the section titled “Setting Firmware OS.”**

## 5.6.4 Setting Firmware OS

The Firmware OS selection box is used to select the ATC or Scout x. controller software that the controller is using.

This field is used in association with the Purdue High resolution Data module. By choosing this setting to match your controllers CPU operating system, gathering of the Purdue High Resolution Data via the scheduler setting “Upload Purdue Logs” allows ATMS to properly log on to the controller, via FTP and get the data.



Summary of Firmware OS	
<b>Linux</b>	ATC's or 2070's with 2070-1C CPU boards
<b>OS-9</b>	2070's with 2070-1B CPU boards.
<b>OTHER</b>	Reserved for future use
<b>SCP and SCP V6</b>	V06 Engine Boards OS 1.05 or higher
<b>SCP M</b>	McCain Engine Board (*contact support for a list of supported versions)
<b>SFTP</b>	V6 Engine Boards running Scout
<b>SCP Econolite</b>	Econolite Engine Board (*contact support for a list of supported versions)

**Firmware OS MUST be set in order to effectively gather Purdue High Resolution Data.**



Emergency.now

Priority Type **Preempt with Flush** Time (Sec)

Main

Cross

Special 1

Special 2

Special 3

Special 4

Special 5

If the agency has purchased the Emergency.now module, there is a selection for the agency to select the type of Priority input that is being utilized.

Like the Controller Latitude & Longitude you can select Main and cross street names using the Bing Map view.

Each special database can be given a description which can be entered in this section.

Newly defined controllers are not automatically assigned to a Jurisdiction, which will prohibit control and editing of it until it is assigned.

**ATMS** will not poll for status, alarms, etc. until it is assigned to the appropriate Group or Flex Groups as controlled through the system Scheduler.

Beginning with ATMS 2.9, when creating a definition for certain controller types, a new section has been added labeled **Sntp Settings**. **This section is reserved for future use and should not be programmed by the user.**

**Sntp Settings**

Port

Version **v1**

Get Community Name

Set Community Name

Authentication **NoAuth**

Passphrase

Privacy **NoPriv**

Passphrase

User Name

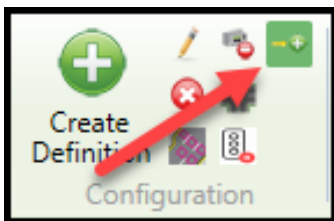
## Summary of Controller Definition Parameters

The Table below provides a summary of definition parameters for each controller:

Summary of Controller Definition Features	
<b>Controller ID</b>	A unique number (1 – 9999)
<b>Controller Name</b>	An alphanumeric name (1 – 43 characters)
<b>Controller Type</b>	Type of controller
<b>Drop</b>	LED number on the Comm Server associated with this controller (200 maximum)
<b>IP Address</b>	Controller IP address for Ethernet controller types
<b>Master</b>	Name of the physical or logical system master for this controller
<b>Group</b>	Name of the main grouping for this intersection (optional)
<b>Flex Group</b>	Select user specified Flexible named Group(s) associated with this controller
<b>Delay Receive</b>	Delay in milliseconds to receive data before timing out (Default is 1000)
<b>Delay Transmit</b>	Delay in milliseconds before transmitting (optional)
<b>X-Reference #</b>	User can provide a cross-reference ID# (optional) (1-9 digits)
<b>Location Latitude</b>	Bing Map Latitude
<b>Location Longitude</b>	Bing Map Longitude
<b>Altitude</b>	Altitude of controller on Bing Map (optional)
<b>Phone</b>	Phone number of the associated dial-up modem (1-20 characters)
<b>Use Prefix</b>	User can add numbers preceding the dialed phone number
<b>Use Postfix</b>	User can add numbers following the dialed phone number
<b>Azimuth [-90 to 90]</b>	User can enter a value to rotate the North arrow on the Intersection Real-Time Wizard display.

<b>Firmware OS</b>	The Firmware OS Type for ATC or 2070-1C (Linux) or 2070-1B (OS9) hardware for FTP connections
<b>Opticom</b>	Sets <b>ATMS</b> to retrieve the Opticom data <b>via the controller</b> when a preempt alarm is received.
<b>Temperature Probe</b>	Enables the associated temperature probe value to be displayed on the GIS map. Temperature values are collected in the Scheduler task named "Temperature Probe Report".
<b>Emergency.now Priority Type</b>	This selection sets the type of Emergency.now input (Priority or Preempt) that is associated with the controller
<b>Emergency.now Timer</b>	When Preempt is selected via above, this is a timer that is used to start the Preempt when the Emergency vehicle is within this time (in seconds) from the intersection.
<b>Special 1</b>	Description of special file 1 (optional) (1-32 characters)
<b>Special 2</b>	Description of special file 2 (optional) (1-32 characters)
<b>Special 3</b>	Description of special file 3 (optional) (1-32 characters)
<b>Special 4</b>	Description of special file 4 (optional) (1-32 characters)
<b>Special 5</b>	Description of special file 5 (optional) (1-32 characters)

## 5.6.5 Create From



The *Create From* feature enables the user to create a new controller definition from another, including the option to copy the sourced controller’s database. When it is desired to create additional intersections that are similar (Controller Type, Drop, Database, etc.), this utility can make creating new controllers easier. To utilize the *Create From* feature, select a controller from the *List* or *Map*, the option to *Create From* will become available under *Actions...Configuration*. A window will appear in the Overview pane that is similar to the *Create Definition* screen.

By checking the *Copy Database Files* box as shown in the **RED** circle, the newly created controller will import a copy of the source controller database.

Controller Properties - Create From (302 - Commander v85.3)

**Required Information**

Controller ID:

Controller Name:

Controller Type: Scout Ethernet v85.3/v85.4

Drop:

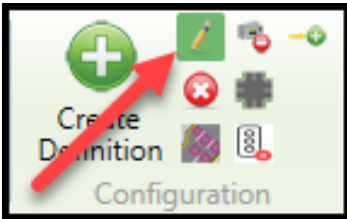
IP Address: 192.168.001.222

Offline:

SynchroGreen:

Copy Database Files

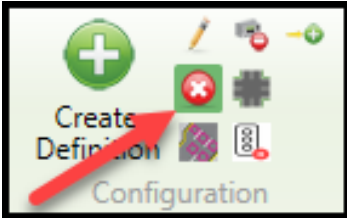
## 5.6.6 Edit Definition



Editing the definition of a controller is done with this selection under the Configuration folder. Choose the controller(s) that you would like to edit, “right-click” or navigate to *Configuration...Edit Definition*. The same window will appear as with the *Create Definition* function. Navigate to the desired parameters for change. The only parameters of the *Edit Definition* function that cannot be edited once a controller is defined are Controller ID and the Controller Type. If you wish

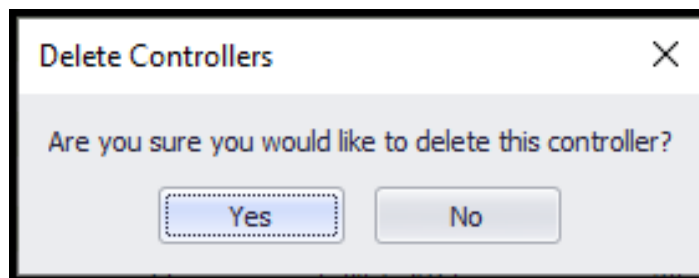
to change these parameters, the controller must be deleted and re-created. If you need to do this, make sure that you are not permanently deleting databases without copying them to the new controller first.

## 5.6.7 Delete Definition

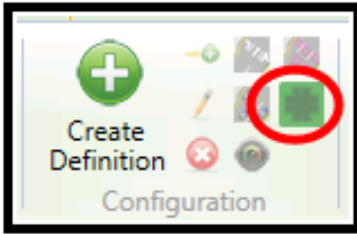


Deleting the definition of a controller is done with this selection under the Configuration folder. Choose the controller(s) that you would like to delete, “right-click” or navigate to *Configuration...Delete Definition*. A confirming screen will appear to protect the user from mistakenly deleting a database.

Please use caution when assigning deletion privileges for this function. It is recommended that only the system administrator has the capability to delete controllers. The associated database(s) for the controller will be lost with this function.



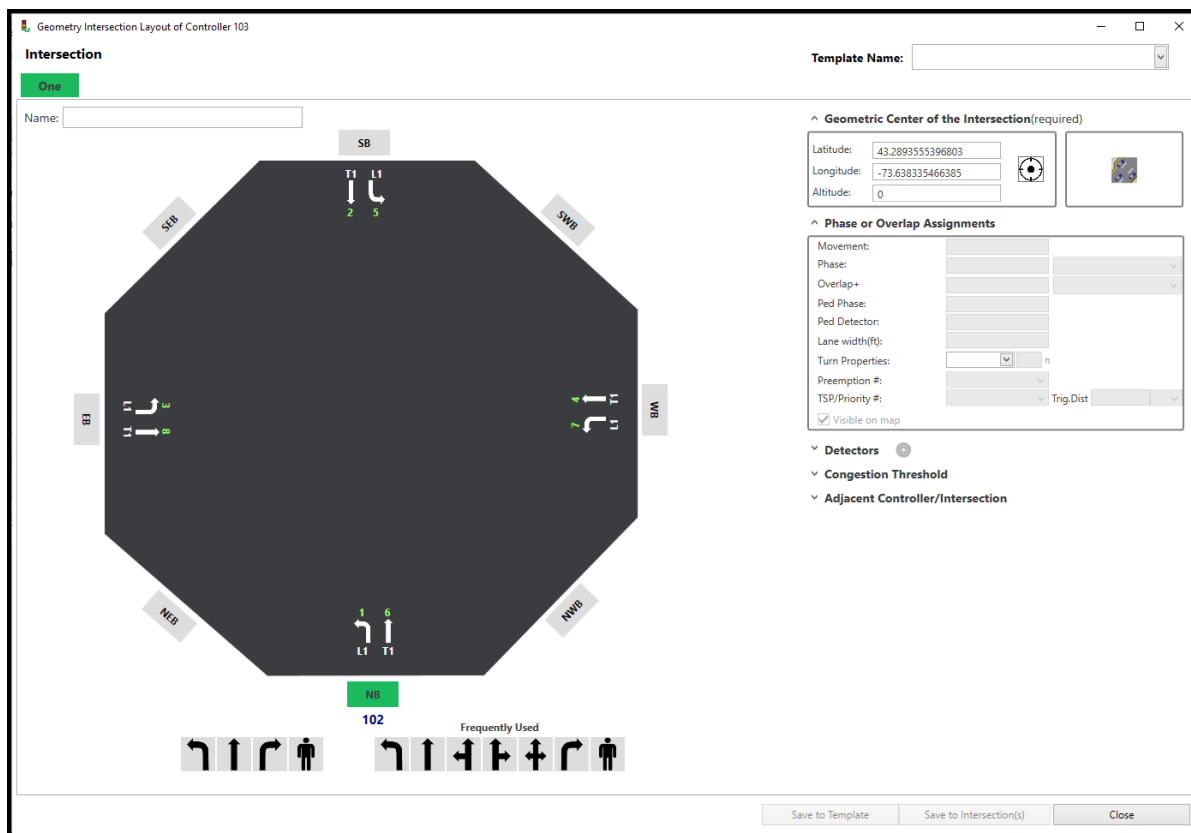
## 5.6.8 Intersection Layout



As of ATMS 2.9, Cubic | Trafficware has added a new intersection configuration feature that has a new User Interface (UI) and a new workflow. This UI and workflow describe the intersection by creating movement, phase, direction and congestion definitions. The UI's data model supersedes and is completely changed compared to Turn Phase Movement Definitions. This new model has additional data points that are now available. In addition, a tool has also been built to run the conversion of the existing Turn Phase Movement data, Scan Element data and

Congestion Level data for existing customers to this updated Intersection Layout format. The updated intersection layout data will be used in various reports, Time-Space diagrams, Congestion reports and congestion thresholds, timing sheets and editing database movements. Scan elements will be generated and populated automatically after the Intersection Layout is saved. Users can define templates and load them to intersections where the layout has not yet been set. Each lane/movement can be optionally displayed on the map as per the user's preference. New data points will become available to the subscribers using the Connected Vehicle (CV) and the TidalWave modules. A new icon available in the configuration section or via a right click when selecting an intersection in the list view or the map view as shown above.

Once a new intersection is defined, the user should select this feature to insure all scan elements, directional parameters, detectors, congestion level parameters and adjacent intersections are associated with the intersection that is being laid out.



**NOTE:** Users **must** use the Intersection Layout tool (*Configuration->Intersection Layout*) if the user wants to add and display scan elements, such as detectors on the ATMS Map view. Without setting up an Intersection Layout, any user added scan elements will not be displayed properly.

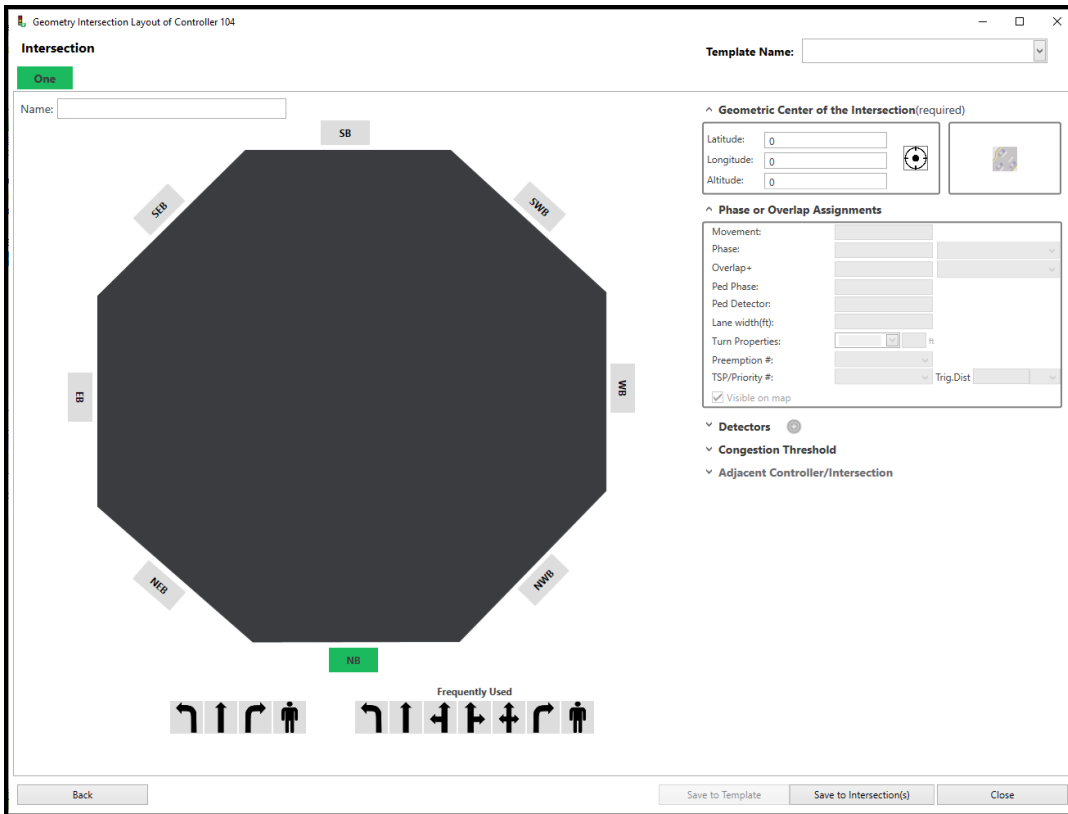
## Creating the Intersection Layout

Select your controller and choose **Configuration->Intersection Layout**.

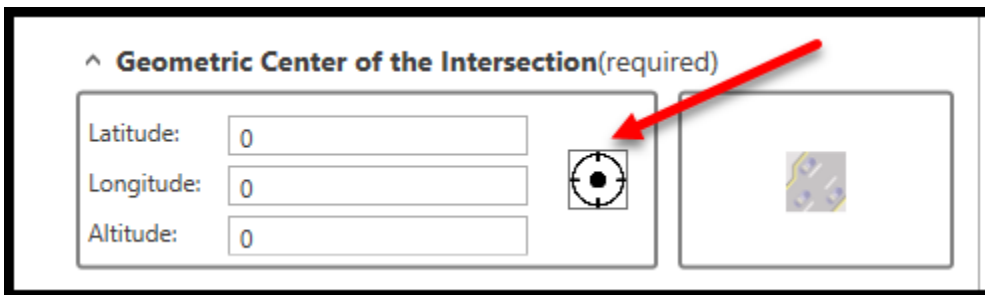
The screenshot shows the ATMS software interface. At the top, there is a navigation bar with tabs: Home, Definitions, SynchroGreen, Reports, Connected Vehicle, High-Res, and Help. Below this is a toolbar with various icons, including a red arrow pointing to the 'Configuration' icon. The main area displays a 'Controller List' table with columns: Alarm, Status, Lock, ID, Name, Type, IP Address, Port, Drop, Docs, Notes, and Revision. A context menu is open over the table, with 'Configuration' selected, and a sub-menu is open showing 'Intersection Layout' highlighted. A red arrow points to 'Intersection Layout' in the sub-menu.

Alarm	Status	Lock	ID	Name	Type	IP Address	Port	Drop	Docs	Notes	Revision
			1	London Ontario	NTCIP 76.x 2070 Ethernet	192.168.101.200	E-NET-5001	1			
			2	copy from 199:Temple Test V76_ATC	Database		99 E-NET-5199	199			
			3	Test	Real-Time		00 E-NET-5003	3			
			4	copy from 199:Temple Test V76_ATC	Utilities		99 E-NET-5199	199			
			5	unnamed controller 5	Communication Status		00 E-NET-5013	13			
			15	WYE, Garfield at 21st atreet	Configuration						
			20	30th at Emerson - ID 20	Virtual Priority						
			30	30th at Arlington -ID 30	Synchro						
			40	30th at Shadeland	Analytics						
			50	30th at Franklin	Go to ...	Ctrl+G					
			65	V65.x Test Controller							
			101	Test V76 2070 -Enet Id 101							
			102	Test V76 2070 Enet Id 102	NTCIP 76.x 2070 Ethernet	192.168.000					
			103	Test V76 2070 Enet ID 103	NTCIP 76.x 2070 Ethernet	192.168.100					
			165	V65.x Test E-net	NTCIP 65.x 2070 Ethernet	192.168.000					
			180	V80 Ethernet test -2070 1C- 32 Phase	NTCIP 80.x Linux Ethernet	192.168.000					
			199	Temple Test V76_ATC	NTCIP 76.x ATC Ethernet	172.028.002.199	E-NET-5199	199			

The Intersection layout screen wizard is shown below. It is used to define the geometric center of the intersection using Latitudinal and Longitudinal references by typing the values or zooming and selecting on the map itself.



It will not be populated for a new intersection. **The user is required to mark the Geometric center of the intersection as shown below. This allows the Bing map to calculate the distance for *Time Space Diagram*.**



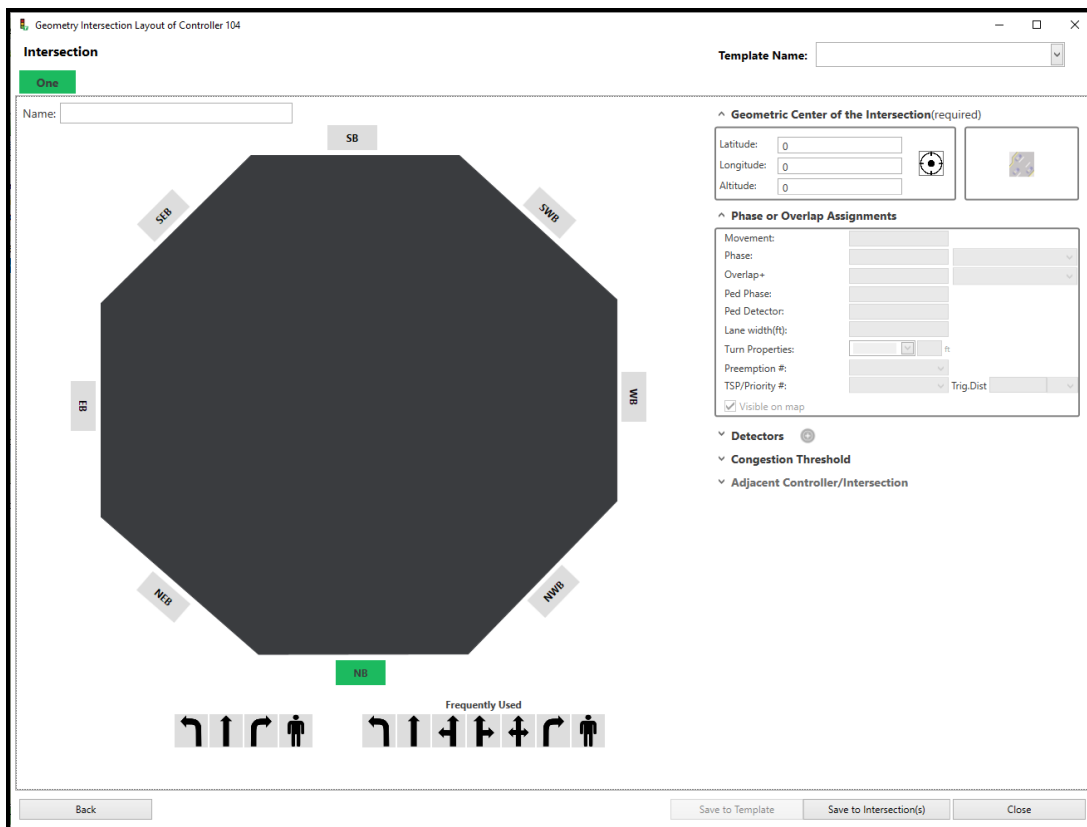
The user will use the intersection layout wizard to create and associate each lane's usage by phase or overlap, detection data, and associated pedestrian data. Once defined, this data will be used to create Scan elements, turning phase movements as well as congestion data. The following steps and screenshots can be followed to assist the user in defining the intersection layout and geometry. We will start by defining our geometry.

- 1) If the intersection has newly been configured, the following screen will be displayed, that will assist in creating the proper geometry for the intersection.




Once the intersection type is selected, hit the “Next” button at the bottom of the screen to continue.

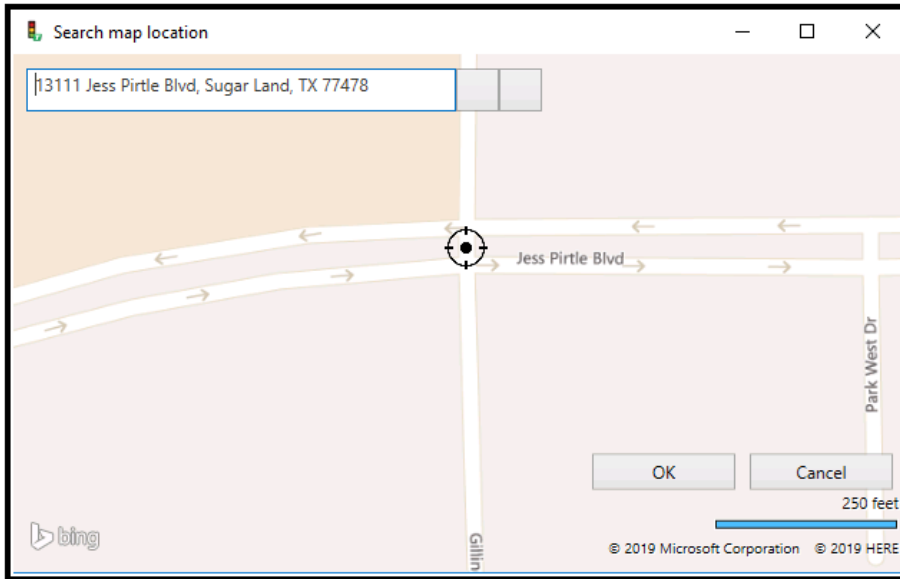
2) The geometry screen will now be displayed.



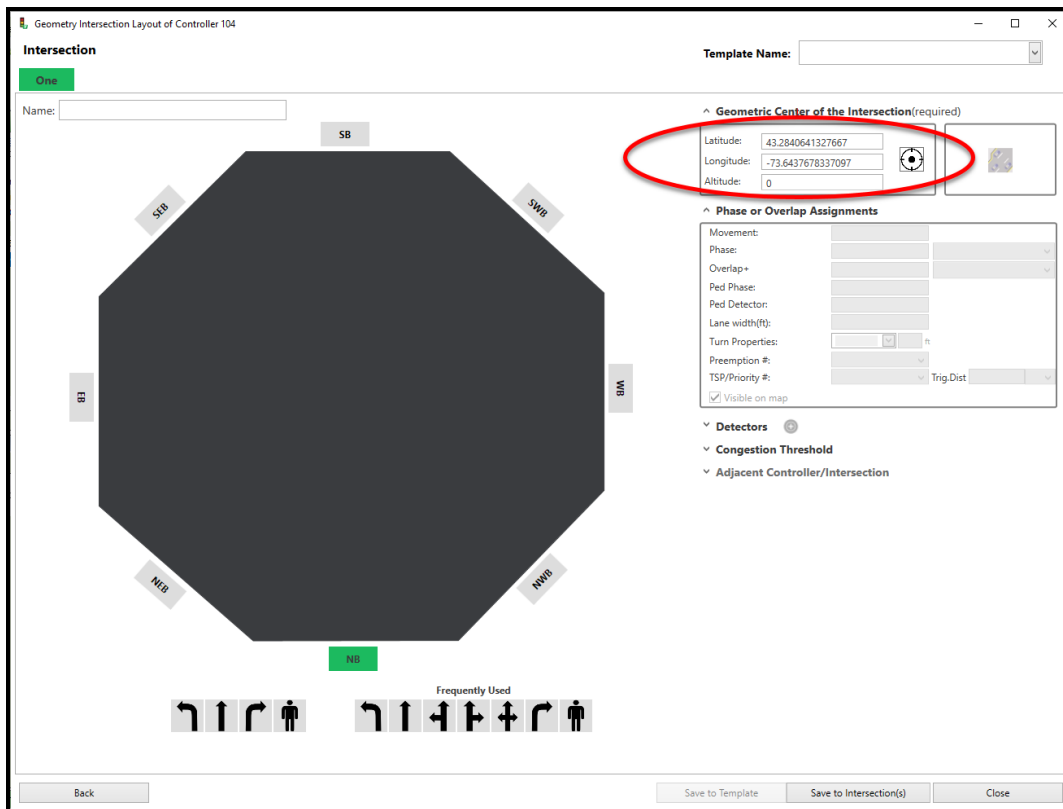
3) Verify if the Latitude and Longitude fields have data. For newly created intersection both will be set to “0”.

4) Select the  icon to pinpoint the geometric center of the intersection. The Bing Map street view display will be shown.

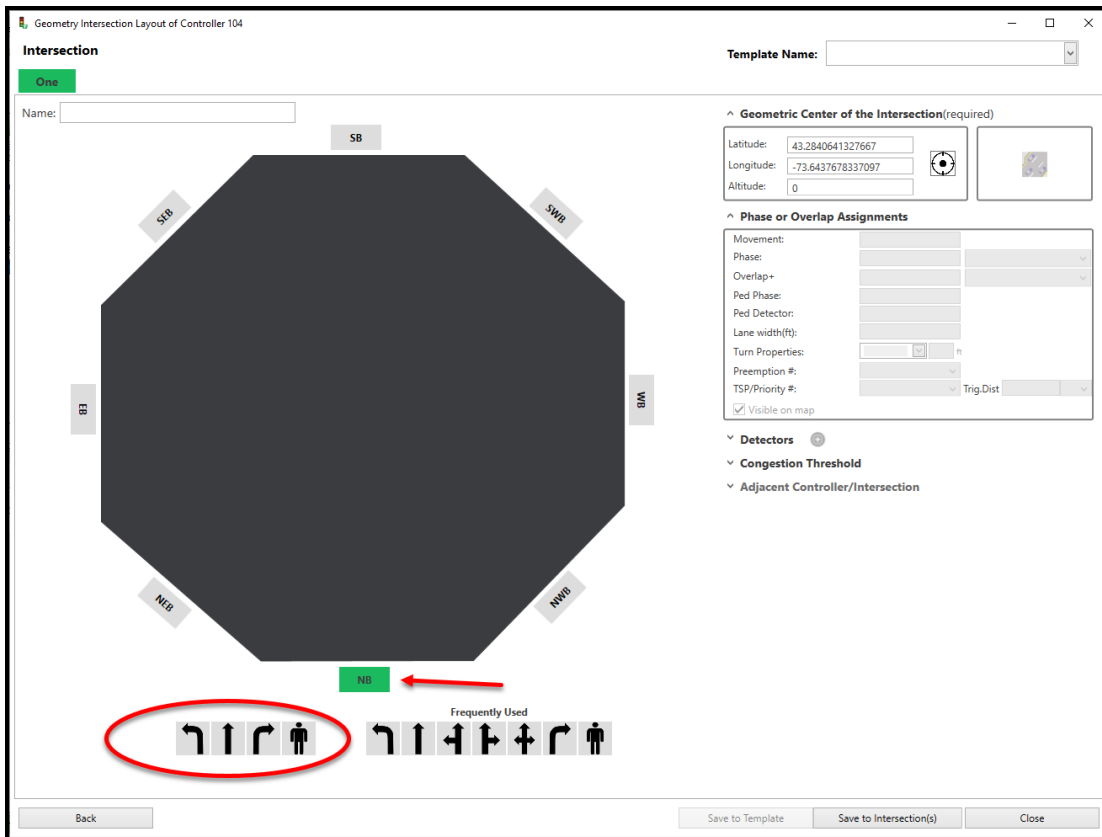




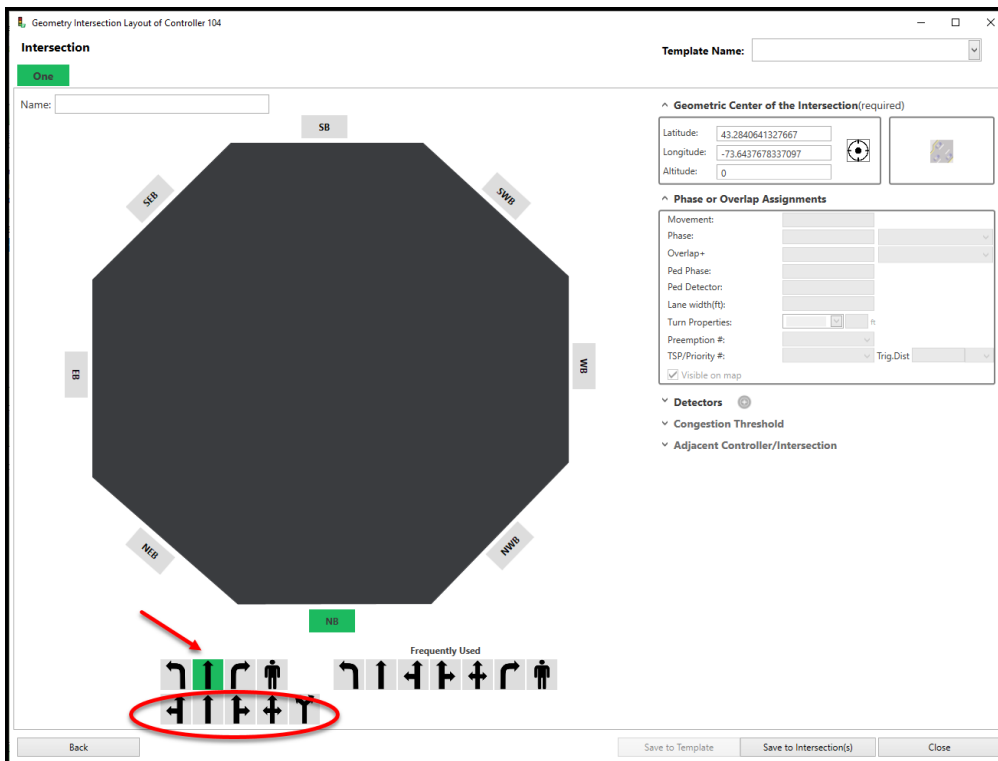
Keep in mind that this can be changed to assure that all mapped scan element positions are calculated from the geometric center of the intersection. The street view of the map will be displayed. Just use the mouse and left click to move the latitude and longitude for the selected intersection. All standard Bing map tools are available to accurately place the intersection geometry.



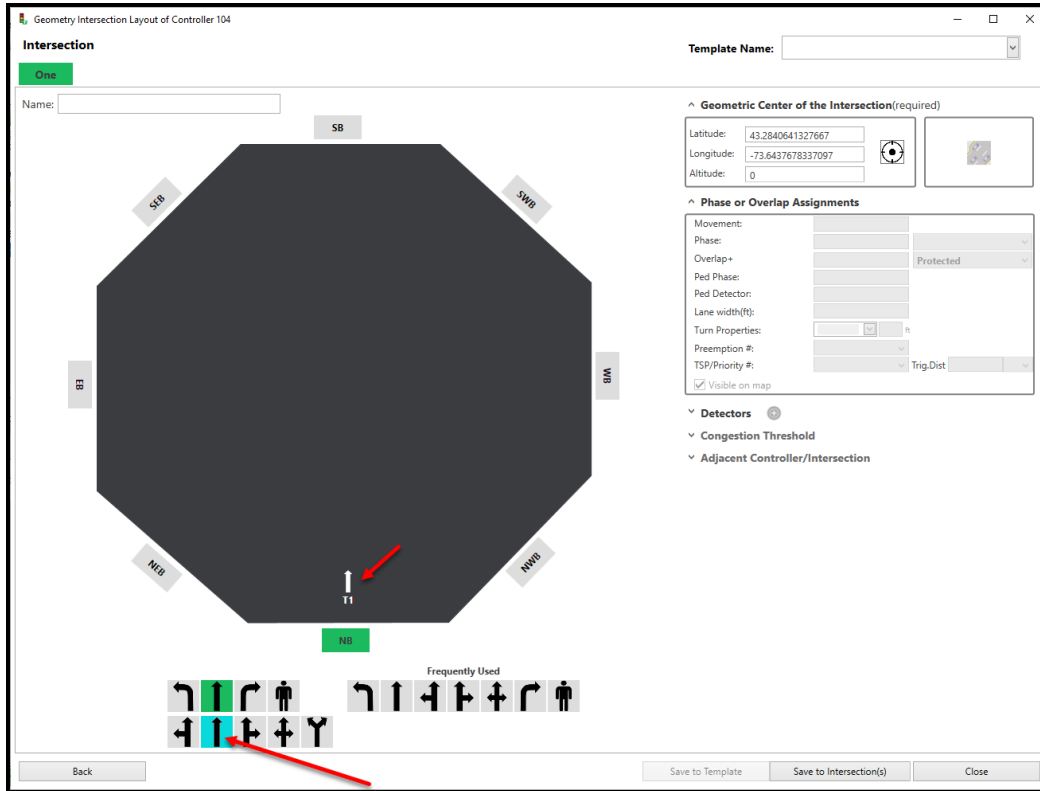
- 5) Select a direction such as NB (Northbound) by clicking on the box labeled NB. As soon as it is clicked, a series of symbols at the bottom of the screen will appear.



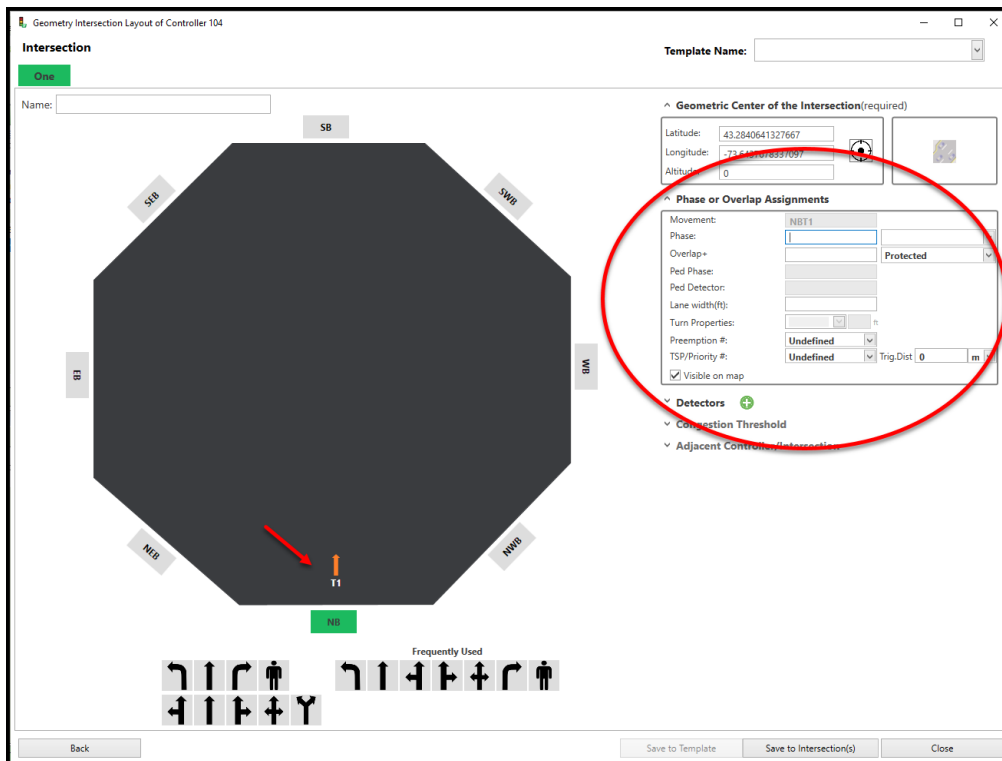
6) Click a lane configuration, such as a thru arrow and a second set of symbols will appear at the bottom of the screen.



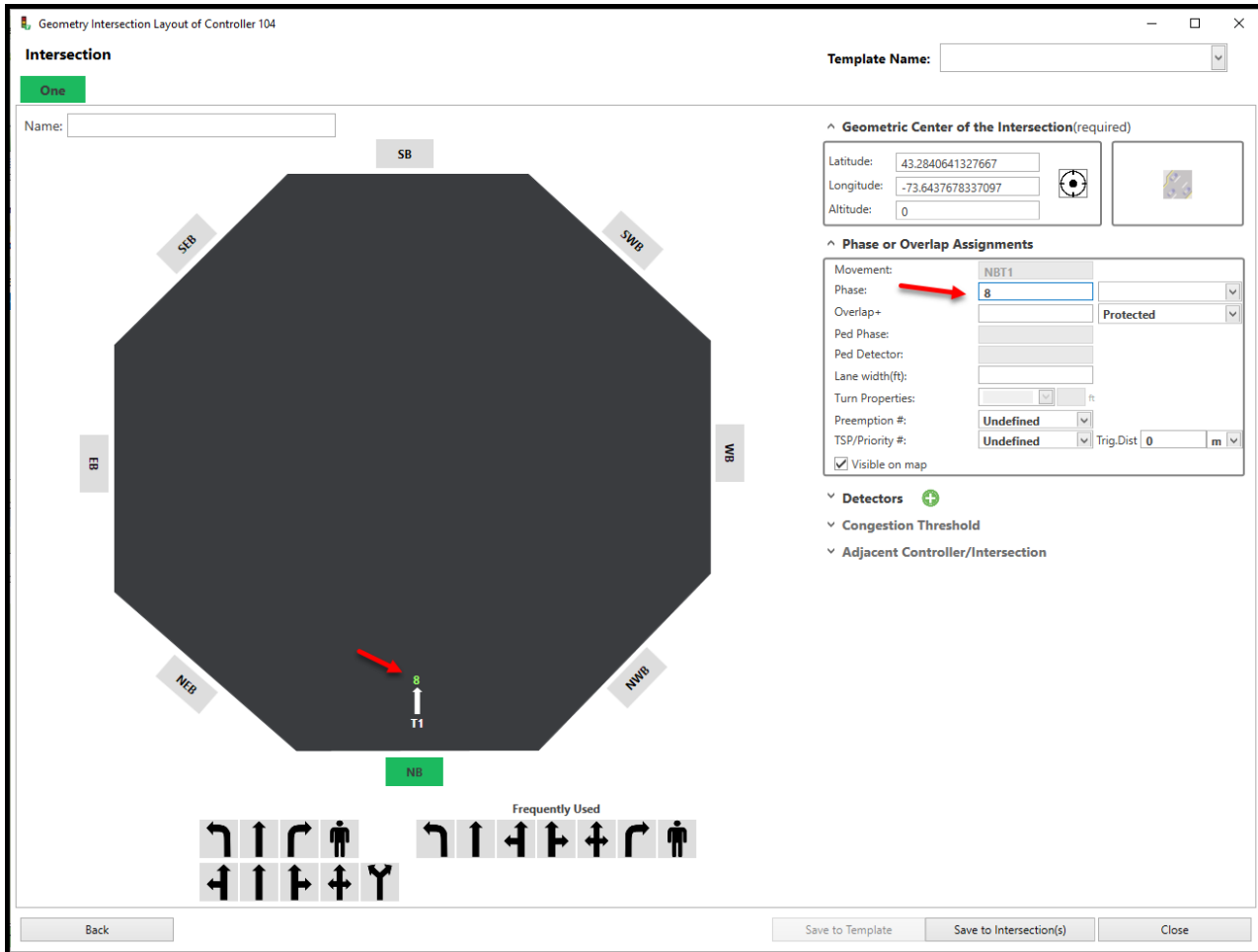
- 7) Click on the specific symbol on the bottom row that you want to add to the intersection layout and it will appear on the map. Note that Phase or Overlap Assignments box will be unlocked at this time.



- 8) By selecting the newly created symbol. note that Phase or Overlap Assignments box will be unlocked at this time.



- 9) Edit the phase Overlap Information to the Phase or Overlap Assignments box. Notice that the checkbox labeled “Visible on map” is checked which will automatically create the scan element on the Bing map. For this example, Phase 8 is the Northbound thru movement.



- 10) Next add your detector data via the Detector box dropdown. To add a detector, you must add it by selecting the **+** symbol. This will unlock the Detector box so that you can add detector data. Enter the specific data for the thru detector.

Geometry Intersection Layout of Controller 104

### Intersection

One

Name:

SB  
SWB  
WB  
NWB  
NB  
NEB  
SEB  
SWB

8  
T1

Frequently Used

Back

Save to Template Save to Intersection(s) Close

Template Name:

^ Geometric Center of the Intersection(required)

Latitude:  Longitude:  Altitude:

^ Phase or Overlap Assignments

Movement:

Phase:  Protected

Overlap+:  Protected

Ped Phase:

Ped Detector:

Lane width(ft):

Turn Properties:

Preemption #:

TSP/Priority #:  Trig.Dist:

Visible on map

^ Detectors +

Detector #:

Detector purpose:

Speed(mph):

Distance(feet):

Lane number:

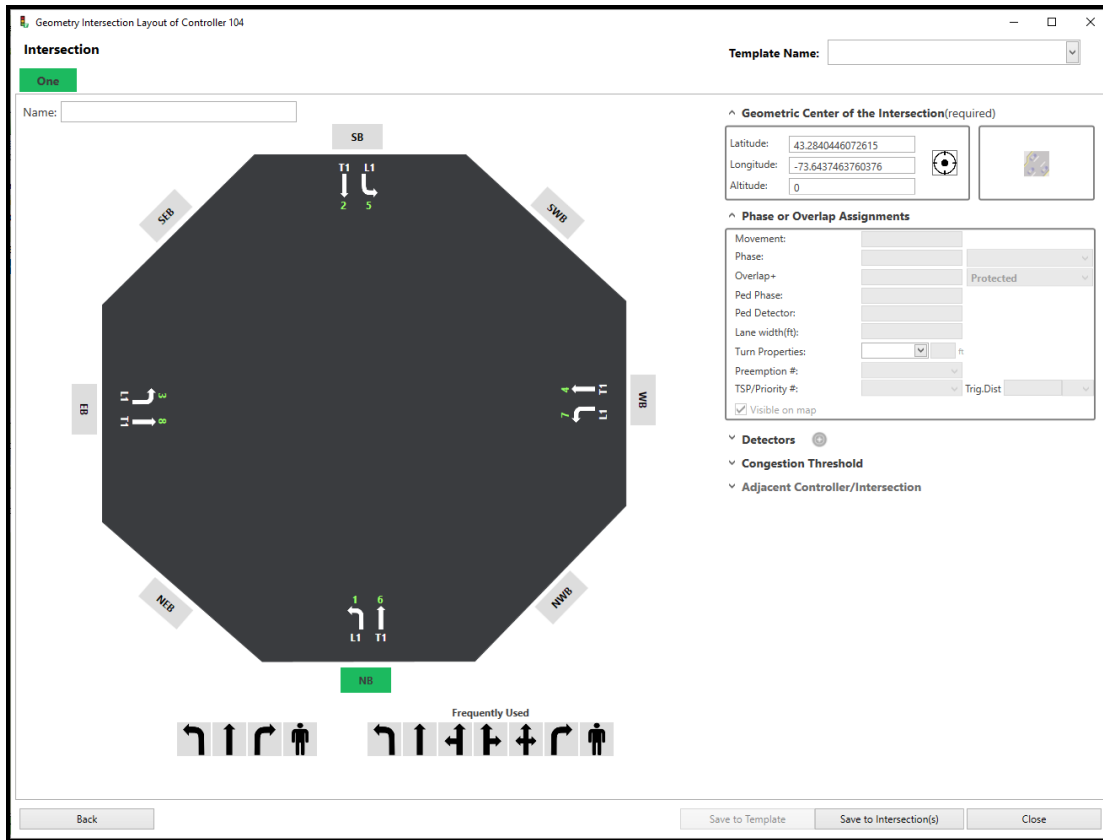
Calculation Type:

Congestion Detector:

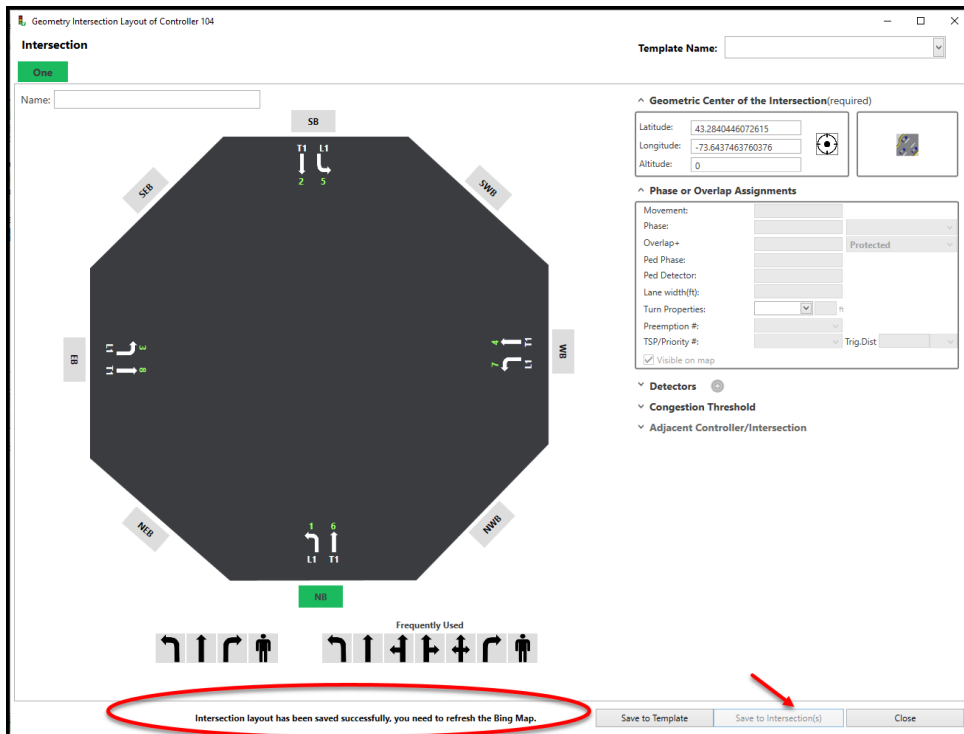
^ Congestion Threshold

^ Adjacent Controller/Intersection

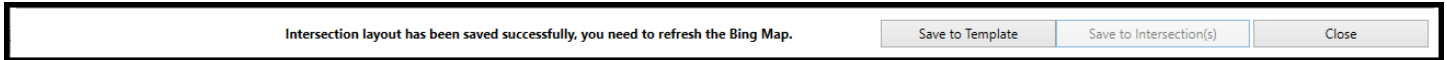
11) Repeat this procedure for all other movements and detection data.



12) Select Save to Intersection to save the Intersection layout and commit the changes.



A box on the bottom of the Intersection Layout wizard will be displayed to remind the user that the Bing Map must be refreshed.



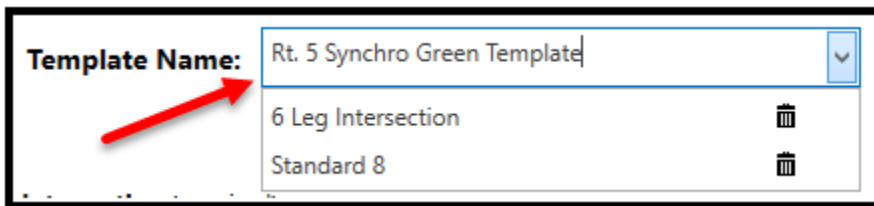
The user can close the Intersection Layout wizard or save this configuration to a template document that can be used for other intersections.

Once created the user can go back and modify the layout as needed.

## Wizard Screen Detailed Information

The wizard screen allows the user to drop icons that will be used by the Bing map and will be referenced by ATMS. The data entry for each icon will be discussed below.



### Template




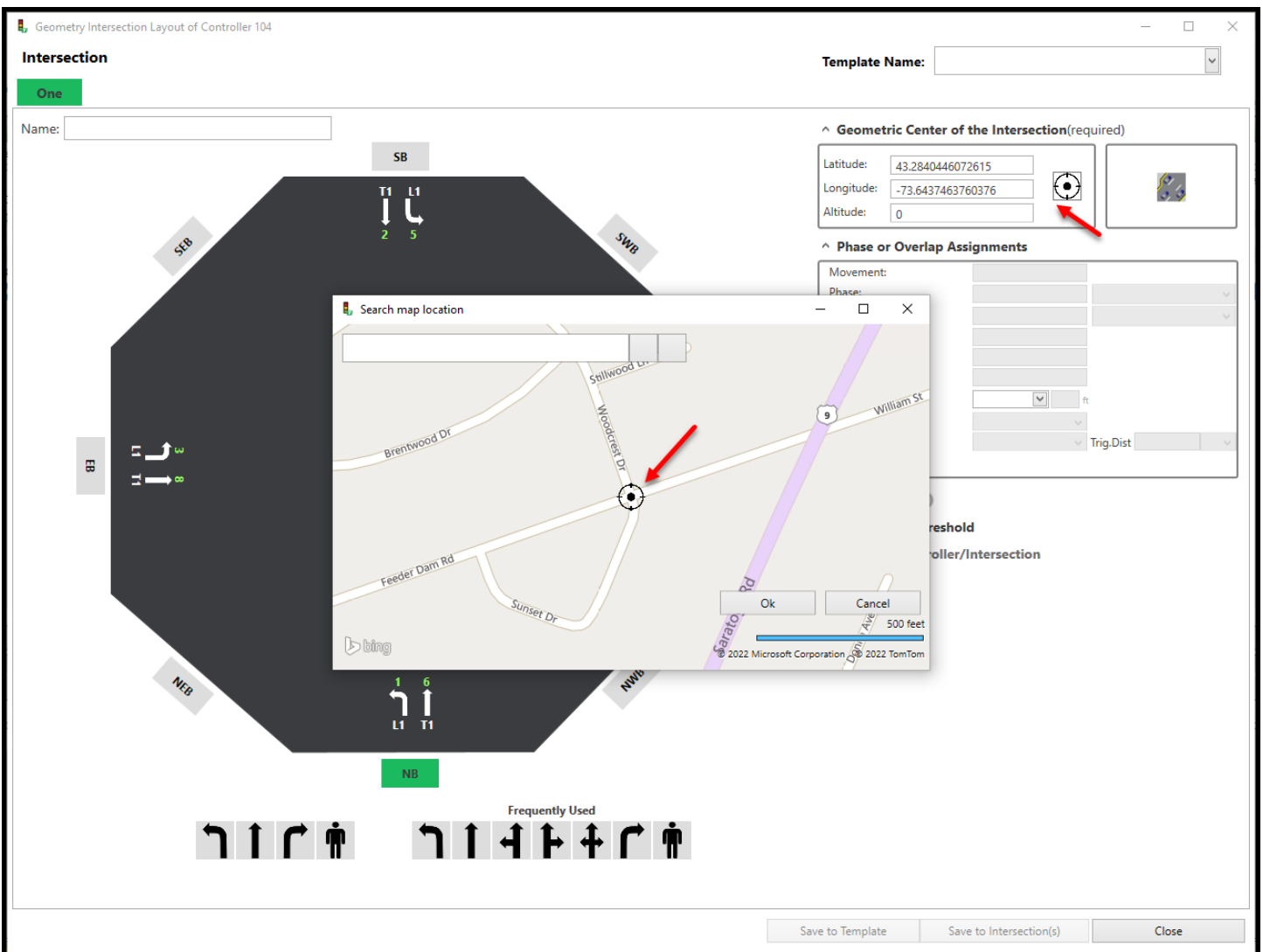
Prior to saving the intersection, the user can create a **Template Name**. The layout & programming can be saved and later selected to quickly copy Intersection layouts to other intersections. Simply enter a unique name and save the data and create the template. If the user wants to create an intersection layout for another intersection, they can use the drop-down list to automatically insert the data and then modify the layout as needed.

## Geometric center of the intersection

^ **Geometric Center of the Intersection**(required)

Latitude:	<input type="text" value="43.2840446072615"/>		
Longitude:	<input type="text" value="-73.6437463760376"/>		
Altitude:	<input type="text" value="0"/>		

When creating the controller via the controller definition or from the Map view, the latitude and longitude of the controller will be entered by the user. Since the pushpin for a controller can be placed anywhere in the vicinity of an intersection, this section requires from user to select the center of the intersection (not the cabinet position). To select the center of the intersection, the user can click on the  symbol and the map screen will pop up. All Map symbols will be automatically placed around the geometric center of the intersection and will be automatically sized and adjusted around that center.





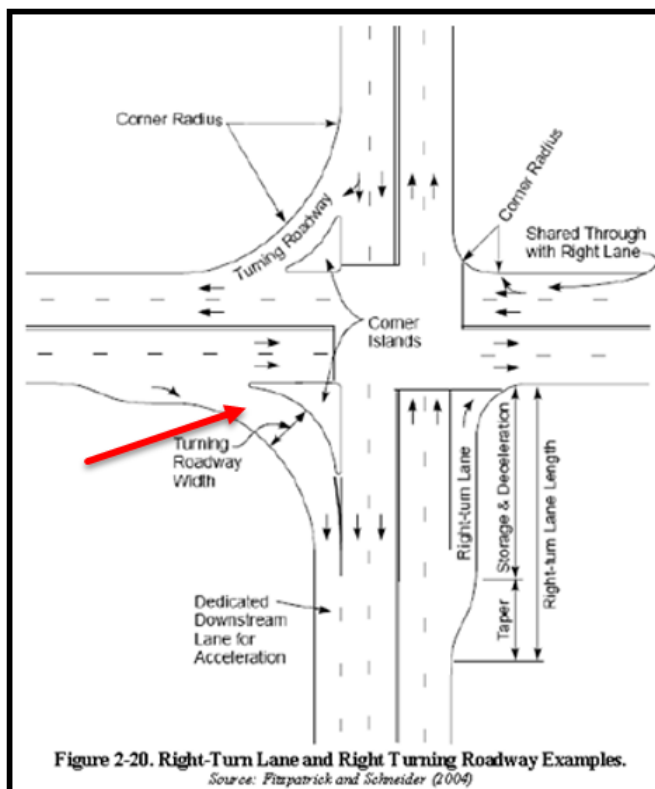
## Phase or Overlap assignments

**Phase or Overlap Assignments**

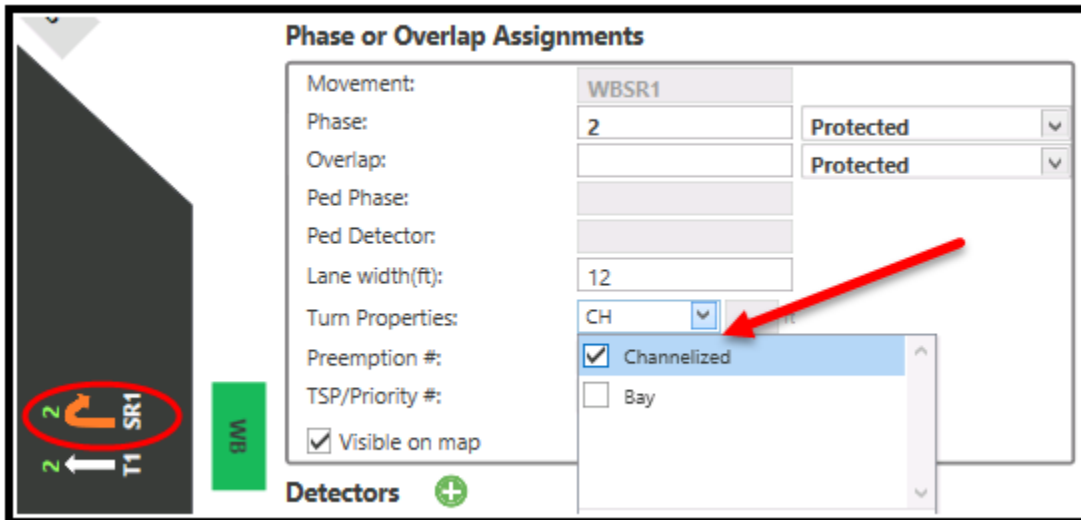
Movement:	WBT1	
Phase:	2	Protected
Overlap:		Protected
Ped Phase:		
Ped Detector:		
Lane width(ft):	12	
Turn Properties:		ft
Preemption #:	Undefined	
TSP/Priority #:	Undefined	
<input checked="" type="checkbox"/> Visible on map		

After selecting a specific symbol, as shown using through phase 2 above, the user needs to enter the appropriate phase or overlap data that will be associated with the movement. Specifically, the user will enter **Phase** number and/or the **Overlap** number, the type of phase or overlap via a dropdown list (i.e. **Permissive**, **Protected**, **Protected/Permissive** or **Undefined**). If it is a pedestrian movement, the **Ped Phase** number and the **Ped Detector** number will also be programmed. The Lane width can also be entered here.

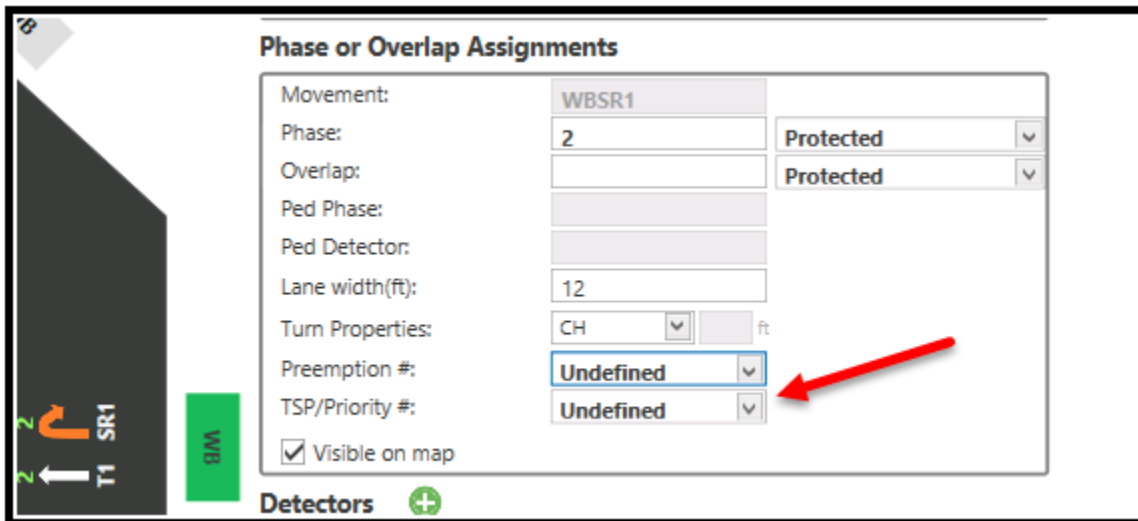
A section labeled turn properties has been added to define (bay) turning lanes and their length.



A turning lane can be defined as a Bay or a Channel. The length of the turning lane can also be defined.

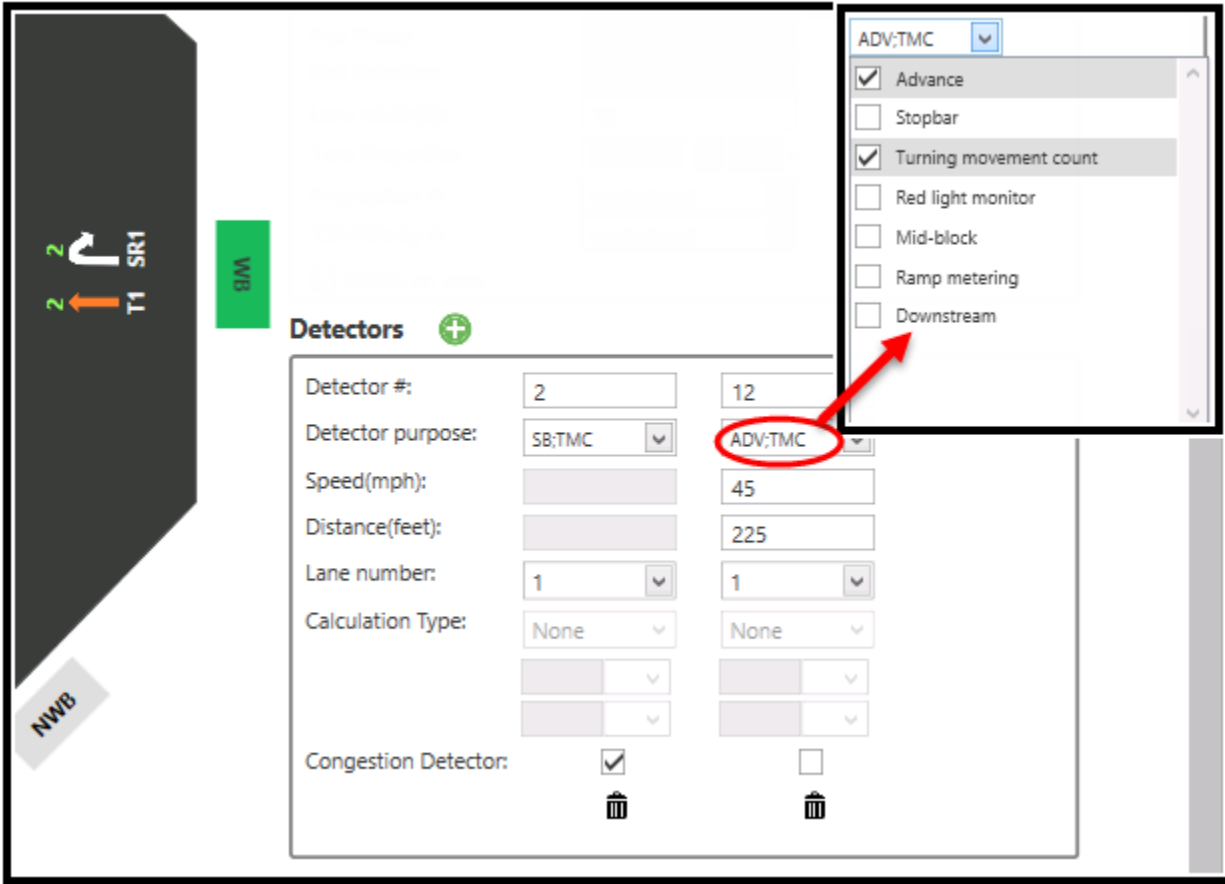


In addition, if a preemption, **TSP/Priority** preemption is associated with that phase, it must be programmed here. Finally, if the agency wants that symbol to be visible on the Bing Map, then check the **Visible on Map** selection box.



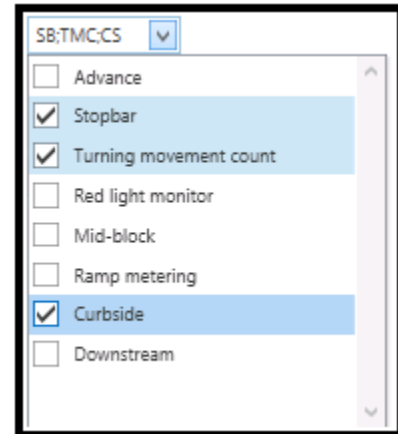
**Note:** Keep in mind that any symbols created in versions prior to ATMS 2.9 will be on the map. If a new symbol is added via this wizard, and the Visible on Map box is checked, there will be a duplicate symbol displayed on the map.

## Detectors

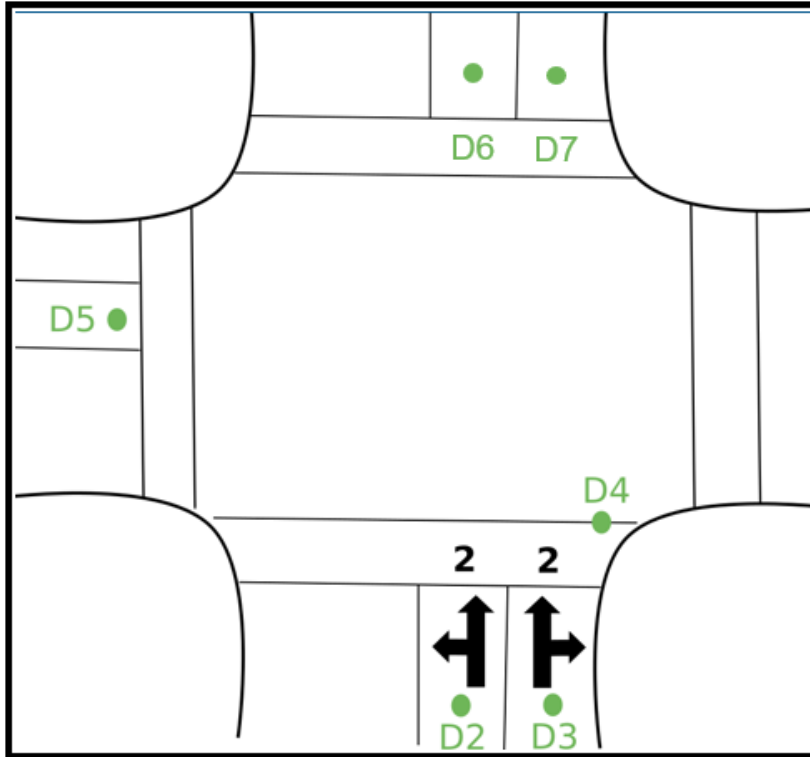


For each phase movement the existing detectors should be defined. The user should enter the **Detector Channel #**, the **Detector Purpose**, the **Lane Number** and the **Lane Width**. The Detector Purpose defines the type of detector that is being used. The (CS) Curbside detector for thru lanes only.

Detector Purpose (Types)	
<b>ADV</b>	Advanced Detector
<b>SB</b>	Stopbar Detector
<b>TMC</b>	Turning Movement Count detector
<b>RLM</b>	Red Light Monitoring Detector
<b>MB</b>	Midblock Detector
<b>RMt</b>	Ramp Meter Detector
<b>CS</b>	Curbside Detector
<b>DS</b>	Downstream Detector



For instance, if advance detector is selected, the **Speed (mph)** and the **Distance (feet)** from the center of the intersection can also be programmed and this information will be passed along to the SPM module. A detector may be assigned to the through lane with shared lane percentages (**Share%**) to estimate any shared left-turn and/or right-turn volumes from the through movement. The **Subtract Detector** field is provided to subtract the left-turn and/or right-turn detector movements from the through volume. The **Shared %** and **Subtract Detector** menus also support turning movement calculations for shared lanes where all three movements are allowed (Left-Through-Right).



Detector #:	2	5	3	4	2	6
Detector purpose:	TMC	DS	TMC	CS	TMC	DS
Speed(mph):						
Distance(feet):						
Lane number:	1	1	1	1	1	1
Calculation Type:	SubDetectr	None	SubDetectr	None	SubDetectr	None
Subtract Detector 1	S L		4 R		6 T	
Subtract Detector 2					L	
Congestion Detector:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

If the specific detector is used for congestion purposes (**Configuration-> Congestion Level**), then the **Congestion Detector** box needs to be checked. This will create the Congestion Threshold section for the user to add the appropriate congestion threshold data for the particular detector.

## Congestion Threshold

**Congestion Threshold**

**WB**  Occupancy  Volume  Speed

Medium	<input type="text" value="50"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
High	<input type="text" value="80"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

This selection will enable the user to define and edit an intersection's congestion level definitions for the purposes of proper display on the "*Congestion Level*" layer of the map and will become available after a direction button for an approach is selected. This section allows **ATMS** to take inbound Volume, Occupancy, or Speed detector data from each controller and classify the value against the *Congestion Level* thresholds for **LOW (Displayed in GREEN)**, **MEDIUM (Displayed in YELLOW)** and **HIGH (Displayed in RED)** for that collection period.

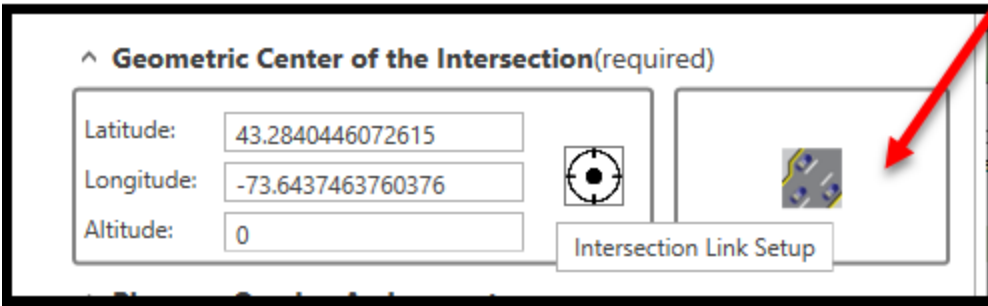
**ATMS** also calculates Level of Service (LOS) values ranging A-F. This information is collected automatically based on the *Turn/Phase/Directions* programming and reported in the *Reports Module*. Setup for LOS is described in the *Turn/Phase/Directions* section of the manual. See the **Congestion Level** Section described later in this manual for further details.



## Intersection Link Speed Setup

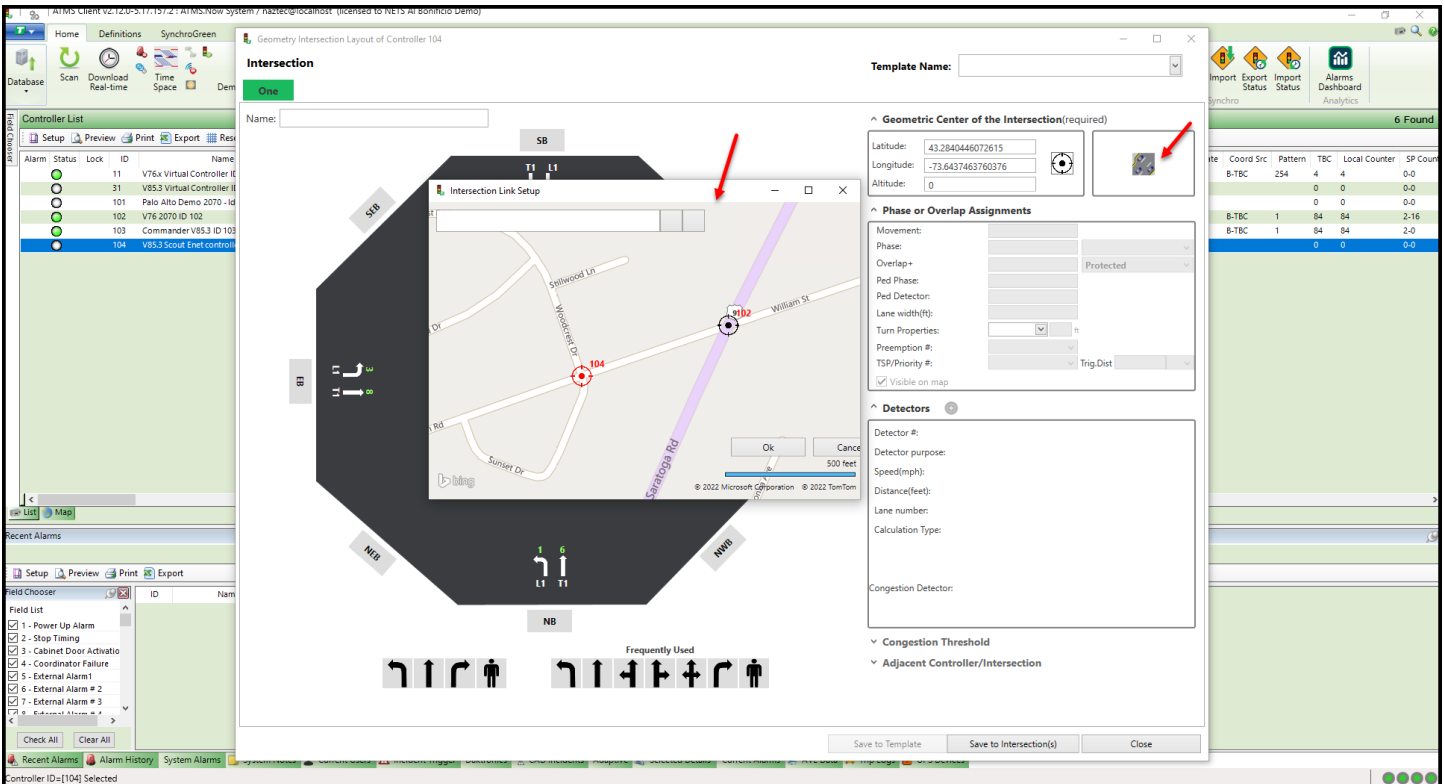
Intersection link setup and programming has been added to the Intersection Layout configuration screen beginning with **ATMS 2.12**. Please refer to section 5.6.7 of this manual for Intersection Link Speed setup for older ATMS versions.

This selection will enable the user to define and edit an intersection's approach speed and distancing definitions for the purposes of proper Time-Space Diagram generation. The *Intersection Link Speed* section allows **ATMS** to take controller active pattern and offset information and associate it with the current cycle timer by providing the necessary approach information for the intersection. This information includes *Intersection* at the other end of the approach leg, *Speed*, and *Distance* between intersections.

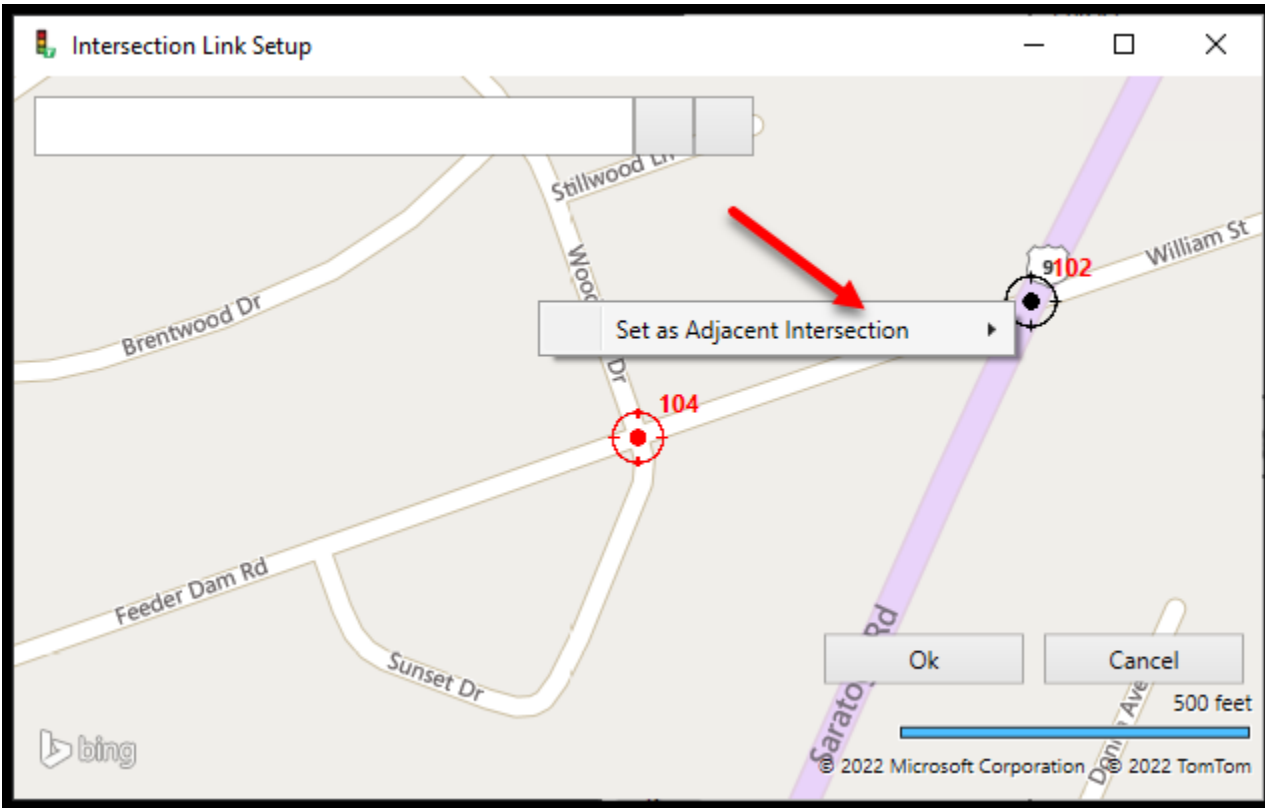
**Note: Intersection Pin must be placed on the Geometric Center of the intersection.**



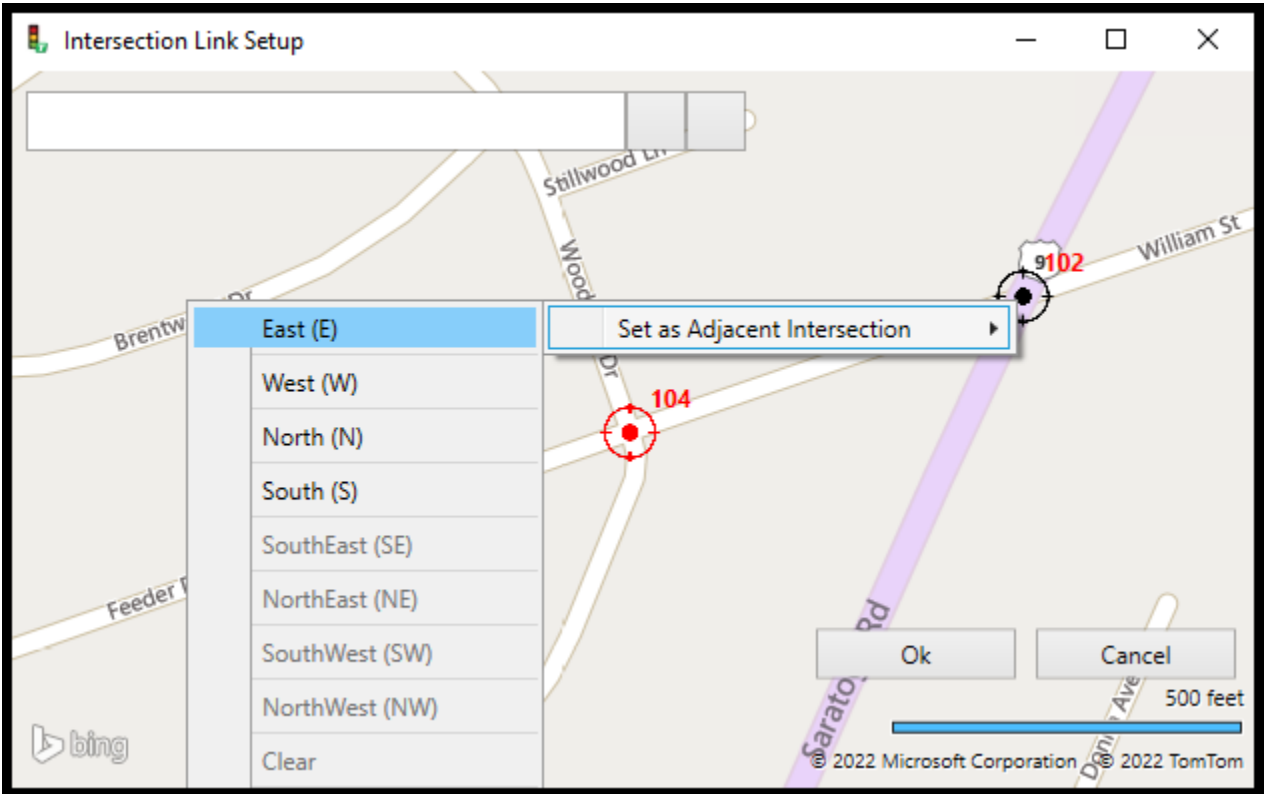
Selecting the Intersection Link setup symbol will bring up a map that will show the Geometric center of the current intersection in Red  and any adjacent intersections that were previously laid out in in Black .



Right clicking on the Adjacent Intersection symbol will bring up the selection "Set as adjacent intersection".

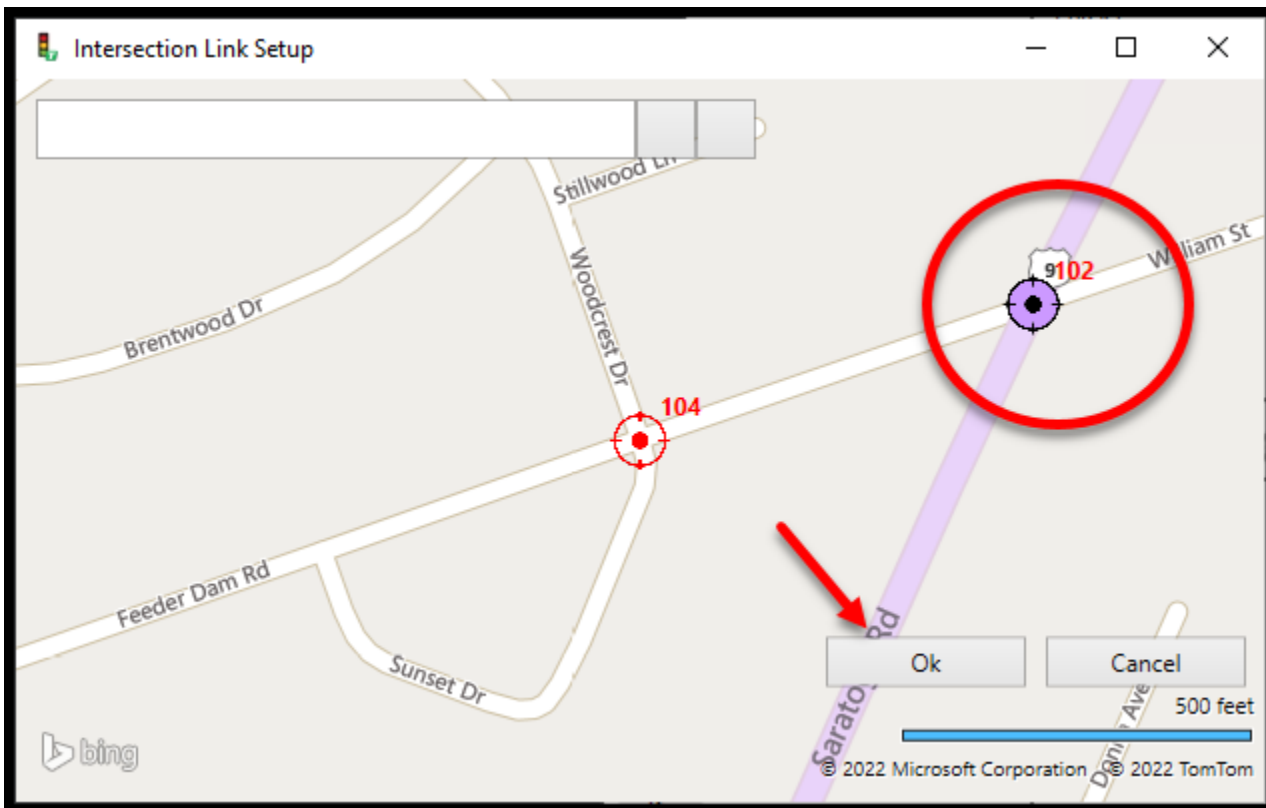


Select the “Set as Adjacent Intersection” button and a drop-down menu will be shown that will display the directions that the adjacent intersection can be referenced to the intersection that is being laid out. The direction highlighted in **BLUE** is the one suggested by the system based on the geo-location of the current/adjacent intersections and their respective phasing configurations.



In the above example, the intersection layout is for ID 104. The adjacent intersection 102 is east of intersection 104 so the user will select East with the left mouse button.

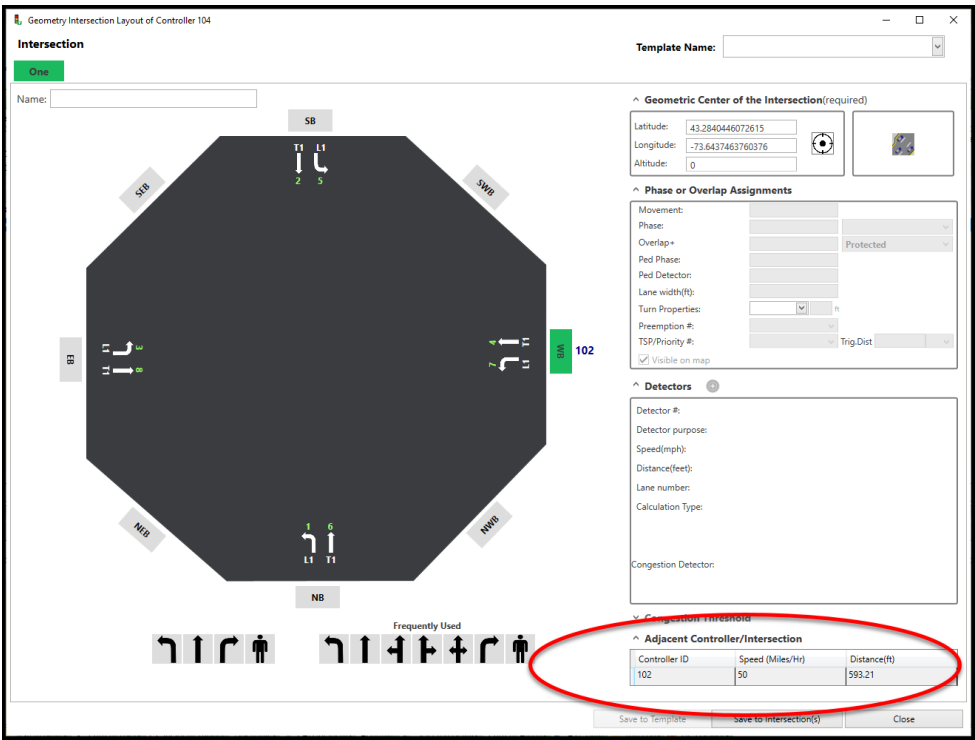
The adjacent intersection will be highlighted in Purple. Hit OK to save the adjacent intersection.



This selection process can be repeated for all adjacent intersections. The user can now select the dropdown **Adjacent Controller/Intersection** to see all adjacent intersections that were set up.

^ Adjacent Controller/Intersection		
Controller ID	Speed (Miles/Hr)	Distance(ft)
102	50	593.21

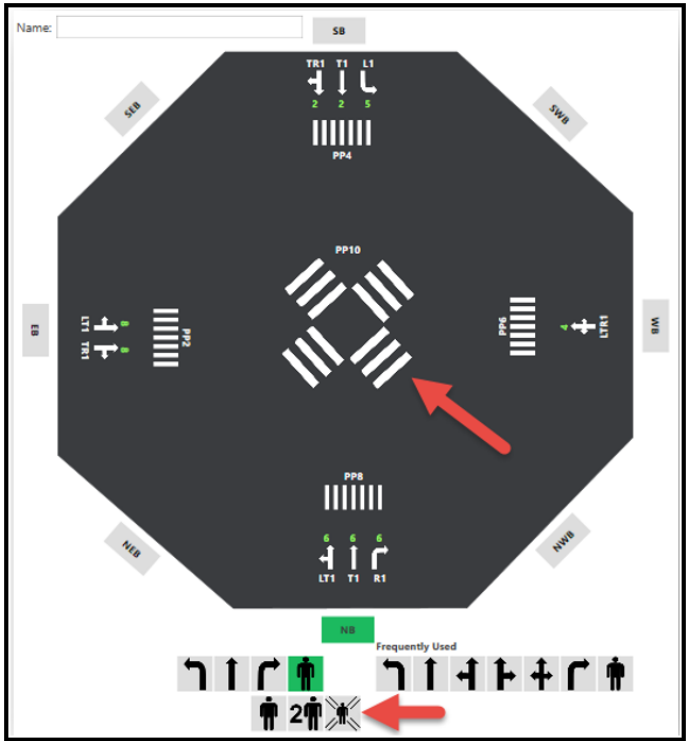




Note that the distance is automatically calculated using the geometric coordinates and the direction that has been selected by the user. The user can modify the Speed parameter to match the 85<sup>th</sup> percentile speed of the intersection. Select Save to intersection to save the adjacent intersection data.

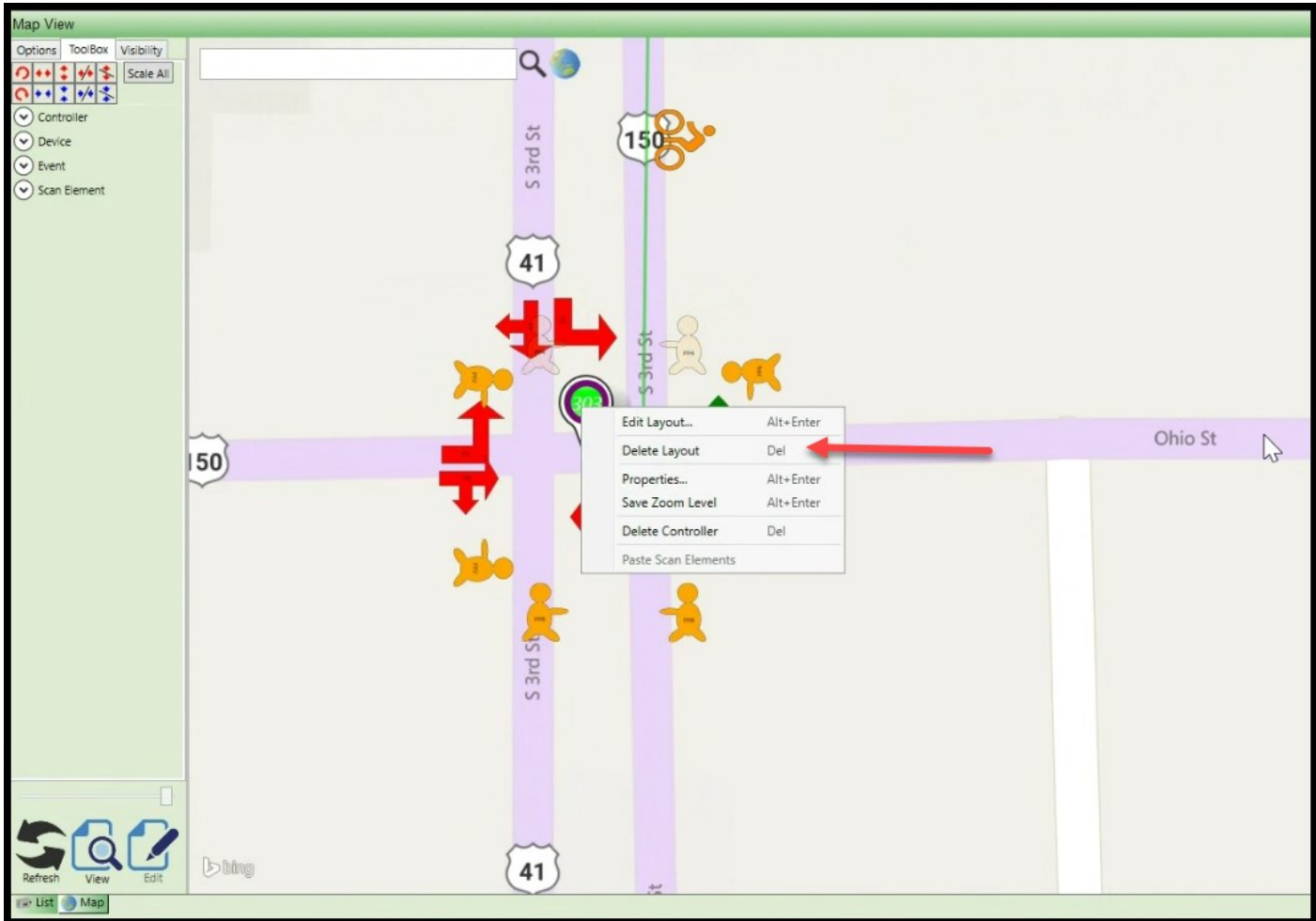
**Pedestrian Phases**

Adding pedestrian phases is the same as adding a normal phase. Use the Ped symbol to add it to the Intersection Layout. ATMS also includes an Exclusive Pedestrian (Ped Scramble) selection.



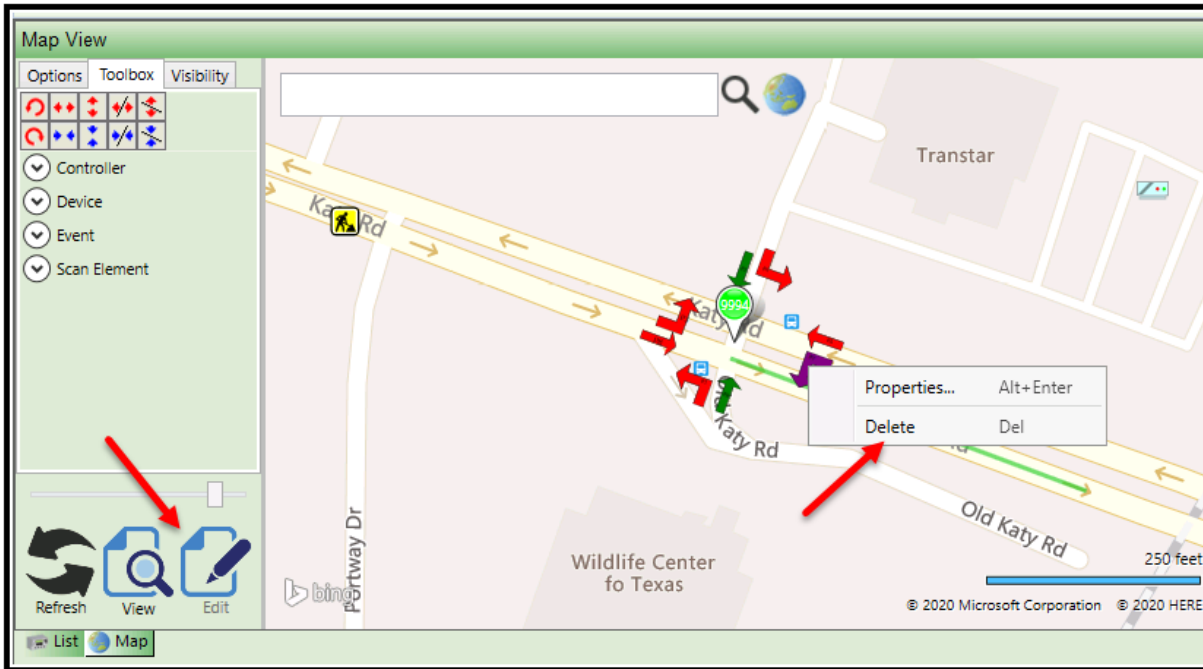
## Deleting the Intersection Layout

If the user wants to delete the existing Intersection Layout, simply navigate to the Map view on the Home module Select the edit mode and select the intersection. Hover over the Push pin and select Delete Intersection Layout as shown below.

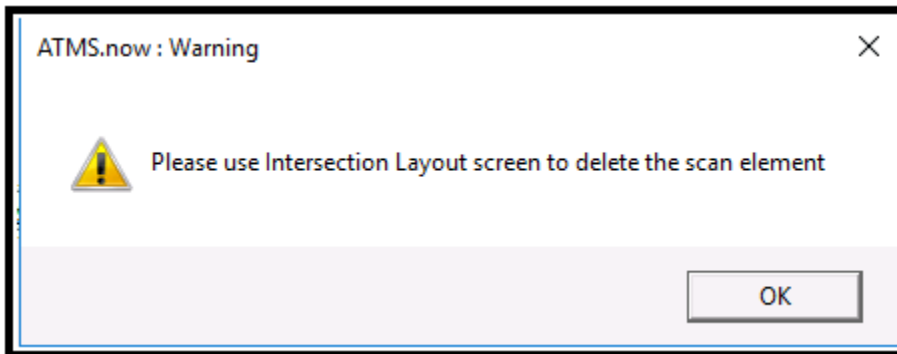


The user can also edit the layout using this method.

Existing Scan elements can also be deleted or edited by selecting them using the Map view edit mode as shown below.

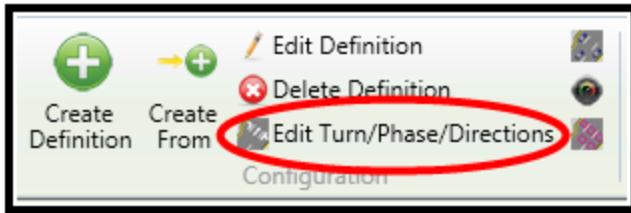


If the scan element was created via the Intersection Layout tool, the item will **NOT** be deleted directly from the map but instead must be deleted using the Intersection Layout tool. The warning screen shown below will be displayed if this occurs.



If the scan element was created using the Map toolbox, then the method shown above will work.

## 5.6.9 Edit Turn/Phase/Directions



**[For ATMS prior to 2.9]** This selection will enable the user to define and edit an intersection's Turning/Phase Movement definitions for the purposes of proper count report generation. The *Turn/Phase/Directions* section directs **ATMS** to associate the specific controller count and preemption information to the correct phases and directions for Volume,

Turning Movement, Preemption, and LOS report generation.

The LOS reporting capability in the *Reports* module uses the lane and counting detector information from this screen. The LOS determines the number of lanes for each approach based on the number of count detectors for each movement, assuming that there will be one detector per lane. The chosen method for LOS calculation in **ATMS** is Circular 212.

**In ATMS 2.9, the Edit/Turn/Phase directions selection screen will be grayed out. As of ATMS 2.10 this section will be eliminated. This data must be edited and modified using the Intersection Layout configuration screen described earlier in this chapter. This section has been left in the manual to describe the programming features for users that have an earlier version of ATMS.**

Choose the controller(s) that you would like to edit, “right-click” or navigate to *Configuration...Edit Turn/Phase/Directions*. The screen shown below will appear in the main *Navigation* pane.

North Bound																
Phase	4	Left Lanes				4	Through Lanes				0	Right Lanes				
Detectors	0	0	0	0	4	0	0	0	0	0	0	0	0	0		
Type																
Substract Det	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Share%	0	% Left w/ Thru				Preempt	0	Priority Number				0	% Right w/ Thru			
Overlap	0					0					0					
South Bound																
Phase	8	Left Lanes				8	Through Lanes				0	Right Lanes				
Detectors	0	0	0	0	8	18	0	0	0	0	0	0	0	0		
Type																
Substract Det	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Share%	20	% Left w/ Thru				Preempt	0	Priority Number				0	% Right w/ Thru			
Overlap	0					0					0					
East Bound																
Phase	2	Left Lanes				2	Through Lanes				2	Right Lanes				
Detectors	5	15	0	0	2	0	0	0	0	0	45	0	0	0		
Type	2															
Substract Det	0	0	0	0	5	15	0	0	0	0	0	0	0	0		
Share%	0	% Left w/ Thru				Preempt	0	Priority Number				0	% Right w/ Thru			
Overlap	0					0					0					
West Bound																
Phase	1	Left Lanes				6	Through Lanes				6	Right Lanes				
Detectors	1	12	0	0	6	0	0	0	0	0	46	0	0	0		
Type	L															
Substract Det	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Share%	0	% Left w/ Thru				Preempt	0	Priority Number				0	% Right w/ Thru			
Overlap	0					0					0					
<input checked="" type="radio"/> N/S/E/W <input type="radio"/> NW/NE/SW/SE																

First, select the appropriate compass direction for the intersection as shown in the above figure. In the first row of each direction, enter the associated phases for the “Left”, “Through”, and “Right” Lanes. Next enter the associated detector numbers for each phase.

This does not assign the detector channel to the associated phase in the controller. This function is only used as a database filter for proper report generation and Synchro utilities. However, the controller database has to have the matching detector channels checked as counting detectors for the counts to be sent to **ATMS**.

The third row is for assigning the detector type to each assigned detector channel. *Synchro* supports the following left-turn movements:

- U type for U-turn movements
- L2 type for “hard” left-turns greater than 90 degrees
- L type for normal 90 degree left turns
- *Synchro* also supports two types of right-turn movements:
- R2 type for “hard” right turns
- R type for normal 90 degree right turns

You must associate each detector in the Turning/Phase Movements database with the lane type defined by *Synchro* if you wish to import turning movement data from **ATMS** into *Synchro*.

Each detector may be considered as a “lane” or combination of adjacent lanes; however, accurate lane counts at high traffic volumes require a separate detector per lane. **ATMS** aggregates detector volumes for each *Synchro* lane type. This insures that volumes exported from **ATMS** can be imported correctly as *Synchro* UTDF files.

A left-turn phase should only be coded in the Turning/Phase Movements Definition table if a protected left-turn phase is provided. In the figure above, the westbound approach is serviced by a protected left-turn phase. *If a direction is not permitted, the phase number assigned to that movement is zero.* If the left turn movement is both protected and permitted (5-section left-turn display), then the protected-only phase should be assigned to the left-turn movement as shown for the northbound movement above.

A permitted southbound left-turn is not assigned a separate left-turn detector if a left-turn movement is shared with the through movement. The westbound approach provides a left-turn lane and a separate detector even though the left-turn is permitted only. An individual lane detector cannot distinguish between shared movements (left, through and right) from the same lane. A detector may be assigned to the through lane with shared lane percentages (**Share%**) to estimate any shared left-turn and/or right-turn volumes from the through movement.

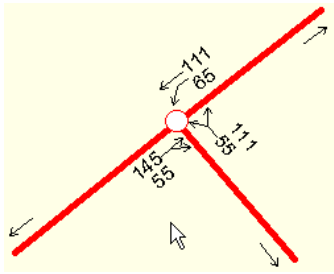
Another common problem in estimating turning movement counts is related to the location of the detector relative to the stop bar. Advance detectors for the through phase may be located 200 – 400 feet in advance of the stop bar. Turning movements may be counted twice if advance detectors lie in advance of the storage lanes.

A check-box is provided to subtract the left-turn and/or right-turn movement from the through volume in these cases. In the figure above, the total volume from left-turn detectors (1+12) and the right-turn detector (46) are deducted from the westbound through movement. Only the left-turn volume (5+15) is deducted from the eastbound approach.

## T-Intersection Approaches

If the intersection approach is the stem of a T-intersection, the left-turn phase should be coded as zero. The through and right-turn phases should be assigned the protected phase number coded in *Synchro* for these movements (phase 4 in the example below).

Note that in this example, shared lanes service the NW and NE approaches. Therefore, the phase numbers assigned to these approaches must be coded to the through movements.



TIMING WINDOW	NWL	NWR	NET	NER	SWL	SWT
Lanes and Sharing (#RL)						
Traffic Volume (vph)	55	111	145	55	65	111
Turn Type	—	—	—	—	pm+pt	—
Protected Phases	4	—	6	—	5	2
Permitted Phases	—	—	—	—	2	—

The Turning/Phase Movements Definition table for this example should be coded as follows. It is assumed that a setback detector for the through phase on the SW approach also detects the left-turn movement. Setting the check-box for the left-turn movement on the SW approach subtracts the left-turn volume from the through movement to prevent the left-turn movement from being counted twice.

### Summary – How to Code the Turning/Phase Movement Table

The rules below should be followed when coding the Turning/Phase Movements Definition table:

Assign the controller through phase associated with each movement to the through and right-turn phase in the Turning/Phase Movements Definition table.

Insure that each detector is assigned a lane type that corresponds with the lane type in *Synchro*

If a separate left-turn phase is provided in the controller, assign this phase to the left-turn movement in the Turning/Phase Movements Definition table.

Assign each detector in the controller to the predominate movement in the Turning/Phase Movements Definition table.

Provide shared-lane adjustments as desired to reassign left and/or right-turn volume assigned to the outside through lane detectors in the table.

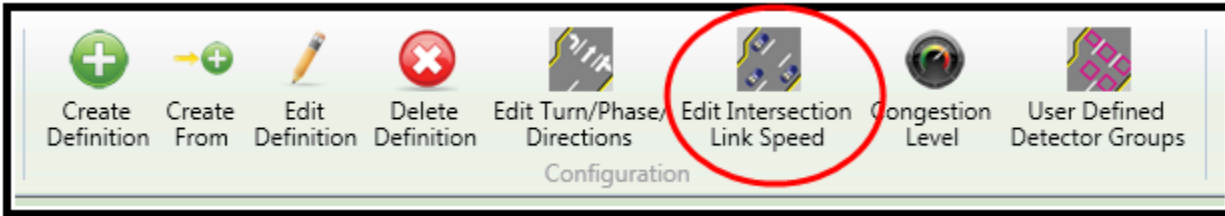
If a left-turn movement is counted twice (by an advance detector and also a stop bar detector in the turn lane), then compensate this by applying the check-box labeled “Subtract Left from Thru” in the Turning/Phase Movements Definition table.

The fourth row, “Share” is for turning movements that do not have dedicated detection for the turning lanes. In this case, enter the estimated percentage or detector activations from the far left or far right lane that is to be subtracted from the Through-Movement counts. Next, check the box titled “Subtract Left from Thru” or “Subtract Right from Thru”. Enter the corresponding Through-Movement detector number(s) in the “Detectors” boxes for the Left or Right lane. This will classify the assigned percentage of counts for that detector to the turning movement. **ATMS** will calculate turning and through counts based on this percentage when generating reports.

Lastly, if you are operating an Overlap(s) at the intersection, enter the “Overlap” number to the associated phase.

Click “Apply” or “OK” to save.

## 5.6.10 Edit Intersection Link Speed



**ATMS 2.12 Intersection Link Speed setup has been added into the Intersection Layout.** Prior to ATMS 2.12 Intersection Linking used this selection. This selection will enable the user to define and edit an intersection's approach speed and distancing definitions for the purposes of proper Time-Space Diagram generation. The *Intersection Link Speed* section allows **ATMS** to take controller active pattern and offset information and associate it with the current cycle timer by providing the necessary approach information for the intersection. This information includes *Intersection* at the other end of the approach leg, approach *Speed*, and *Distance* between intersections.

Choose the controller(s) that you would like to edit, “right-click” or navigate to *Configuration...Edit Intersection Link Speed*. The screen shown below will appear in the main *Navigation* pane.

First, determine the compassing directions for the intersection, N-S-E-W or NE-NW-SE-SW. Select the drop-down for the first box labeled “Controller”. The selected controller should be the intersection at the other end of the designated approach. In the example below, the defined controller for the Southbound approach is the intersection to the South or the next intersection as you continue through the southbound approach (Greenback Lane & Binet). For example, assign the intersections to the North, South, East, and West.

The assigned controller for an approach should be the intersection that is “Upstream” or “Downstream” from the approach.



Links Definition: 22 - Bench 2070 V76 ENET - 22

North Bound		North-East Bound	
Controller	<input type="text"/>	Controller	<input type="text"/>
Street	<input type="text"/>	Street	<input type="text"/>
Speed	0	Speed	0
Distance	0	Distance	0
South Bound		North-West Bound	
Controller	<input type="text"/>	Controller	<input type="text"/>
Street	<input type="text"/>	Street	<input type="text"/>
Speed	0	Speed	0
Distance	0	Distance	0
East Bound		South-East Bound	
Controller	Bench 2070 V76 ENET - 21	Controller	<input type="text"/>
Street	Main	Street	<input type="text"/>
Speed	40	Speed	0
Distance	1000	Distance	0
West Bound		South-West Bound	
Controller	Bench NTCIP TS2V61x ENET	Controller	<input type="text"/>
Street	Elm	Street	<input type="text"/>
Speed	40	Speed	0
Distance	1000	Distance	0

Apply OK Cancel

Assign an associated Street name if desired. This entry is optional.

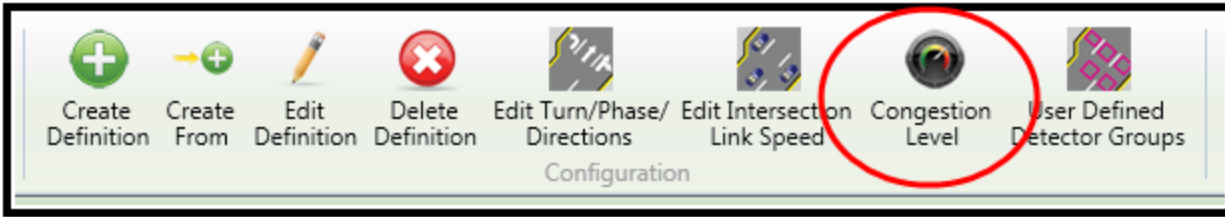
The Speed entry can be the posted speed for the approach or the speed used for coordination modeling. The latter will show better accuracy of your displayed greenband in the *Time-Space Diagram*. Entering the speed information for both the inbound and outbound legs of the intersection is required for the *Time-Space Diagram* to work properly.

Lastly, enter the distance (in feet) between the primary intersection and the downstream intersection.

Click “Apply” or “OK” to save.

Starting with **ATMS 2.12**, the Intersection Link speed selection was eliminated. This data must be edited and modified using the Intersection Layout configuration screen described earlier in this chapter. This section has been left in the manual to describe the programming features for users that have an earlier version of ATMS.

## 5.6.11 Congestion Level



Congestion Level setup has been added into the Intersection Layout setup starting with ATMS 2.9. Prior to ATMS 2.9 Intersection Linking used this selection. This selection will enable the user to define and edit an intersection's congestion level definitions for the purposes of proper display on the "Congestion Level" layer of the GIS map. This section allows **ATMS** to take inbound Volume, Occupancy, or Speed detector data from each controller and classify the value against the *Congestion Level* thresholds for **LOW (Displayed in GREEN)**, **MEDIUM (Displayed in YELLOW)** and **HIGH (Displayed in RED)** for that collection period.

**ATMS** also calculates LOS values ranging A-F. This information is collected automatically based on the *Turn/Phase/Directions* programming and reported in the *Reports Module*. Setup for LOS is described in the *Turn/Phase/Directions* section of the manual.

Starting with ATMS 2.9, the Congestion Level selection screen will be grayed out. As of ATMS 2.10 this section will be eliminated. This data must be edited and modified using the Intersection Layout configuration screen described earlier in this chapter. This section has been left in the manual to describe the programming features for users that have an earlier version of ATMS.

Choose the controller(s) that you would like to edit, "right-click" or navigate to *Configuration...Congestion Level*. The screen shown below will appear in the main *Navigation* pane.

Two congestion levels can be assigned to each intersection approach (Medium and High). Incoming values that are below the minimum value for "Medium" will be classified by **ATMS** within the "Low" category. The user may specify *Volume*, *Occupancy*, or *Speed* to measure congestion by clicking the corresponding circle.

Assign the corresponding *Congestion Level Detectors* that you want to be assigned as collection detectors for each approach. Confirm that each matching detector function is properly programmed in the controller. Make sure all left, right, and thru lanes are collecting.

Click "Apply" or "OK" to save.

If you are calculating Congestion by *Occupancy*, the values for Medium and High will be a % value between 1 and 100 for the collection period that sum of the Occupancy detectors have been actuated, based on the programmed collection parameters in the controller.

If you are calculating Congestion by *Volume*, the values will be a count value for each threshold for the collection period. There are no limitations to the numerical entry for these.

If you are calculating Congestion by *Speed*, the congestion will report based on the most recently reported speed value for that direction.

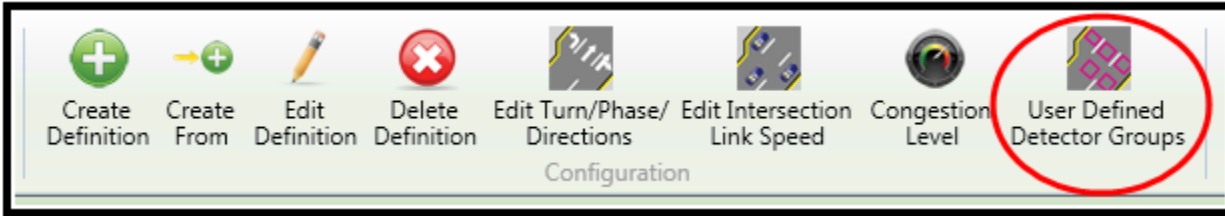
**ATMS will allow the user to complete values for all three congestion reporting methods even though it will only utilize the selected method for each approach. This is useful for minimizing the effort to switch from one method to another.**

Under *Congestion Level Detectors*, assign all of the detectors that you wish to contribute to that approach's Congestion value. This can include left and right lane counts. A maximum of six (6) detectors may be specified for data collection for each intersection approach. Make sure that the assigned collection detectors in this section have the corresponding *Volume* and/or *Occupancy* checked in the controller under MM>5>2.

For **ATMS** to display *Congestion Level* information on the GIS map, the Congestion lines must be drawn for each approach under *Definitions...Segment Editor...Congestion Links*. This is discussed in Chapter 6.

If Congestion Links have been drawn in **ATMS**, but the Scheduler is not collecting count data, the Congestion Level map layer will always display as a Low Level Congestion Status due to a 0 incoming value. Make sure that the Scheduler is collecting "Local Vol/Occ 1-64" for the desired collection interval.

## 5.6.12 User Defined Detector Groups



This selection will enable the user to define custom groups of detector assignments for the purposes of customized report generation. The *User Defined Detector Groups* create special detector group sets for the **ATMS** as shown in the figure below. A user can define up to four different groups of any combination of ten detectors.

Choose the controller(s) that you would like to edit, “right-click” or navigate to *Configuration...User Defined Detector Groups*. The screen shown below will appear in the main *Navigation* pane.

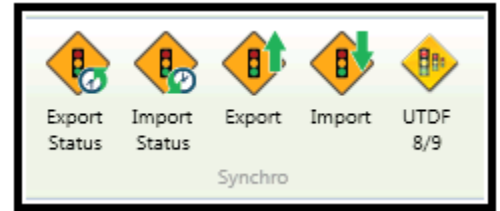
Click “Apply” or “OK” to save.

A screenshot of a software window titled "User Defined Detector Groups: 4 - Dulles and Broadmoor". The window has a light blue background and contains four sections, each labeled "User Defined 1" through "User Defined 4". Each section has a "Detectors" label followed by ten dropdown menus. In the "User Defined 2" section, the second dropdown menu is selected and shows the value "25". At the bottom right of the window, there are three buttons: "Apply", "OK", and "Cancel".

Group	1	2	3	4	6	7	0	0	0	0
User Defined 1	1	2	3	4	6	7	0	0	0	0
User Defined 2	24	25	0	0	0	0	0	0	0	0
User Defined 3	0	0	0	0	0	0	0	0	0	0
User Defined 4	0	0	0	0	0	0	0	0	0	0

## 5.7 Synchro Integration

Cubic | Trafficware provides two methods to interface with our Synchro Suite software. For versions prior to Synchro 10.2 Cubic | Trafficware provides the traditional Synchro UTDF Import/Export tool. For Synchro 10.2 or later, Cubic | Trafficware offers an enhanced Synchro integration tool. Both interfaces are explained below.



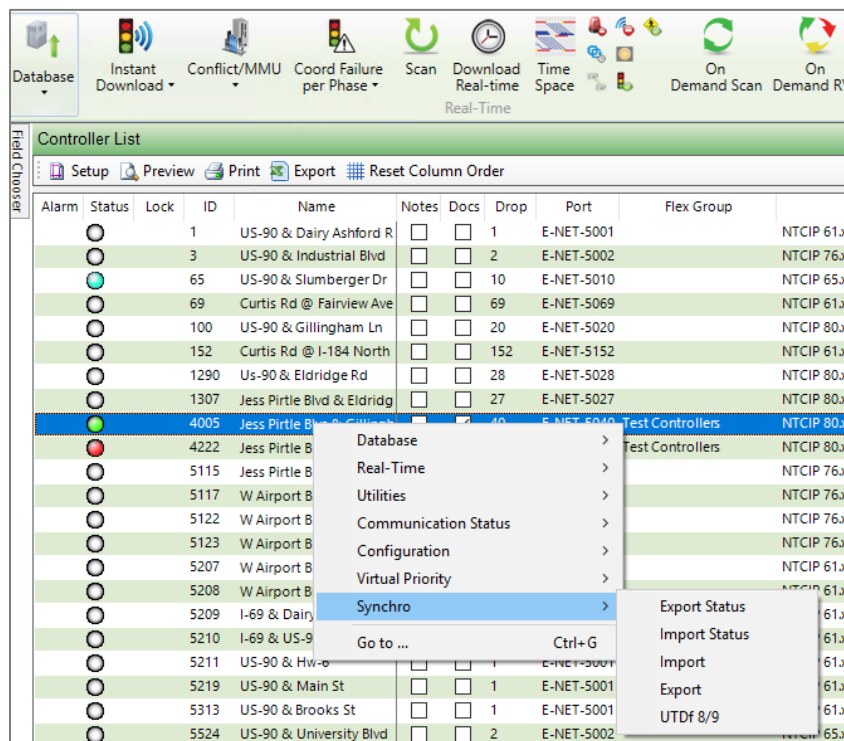
### 5.7.1 Enhanced Synchro Integration

A new and enhanced way of integration with Synchro (v10.2 and later) brings numerous improvements over the existing UTDF file exchange that will still remain available for data exchange with older versions of Synchro software. The new integration enables exchanging of signal timing parameters directly between ATMS and SYNCHRO, without the need to create, store and send or receive separate UTDF files.

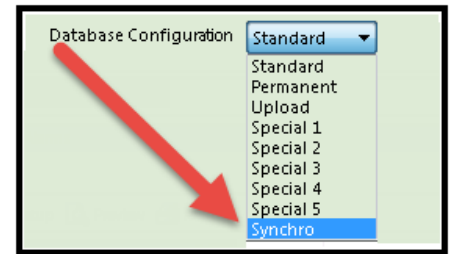
The integration actions can be accessed via the Ribbon bar. Four new icons are available:

- Export – launching the export wizard
- Import – launching the import wizard
- Export Status – launching the menu with details about files that were previously exported to Synchro users
- Import Status – launching the menu with details about available files from various Synchro users

Besides the Ribbon bar, user can also access Synchro Import or Export actions by right-clicking on a controller and selecting Synchro. All available options will appear.



The new integration method works with v61, v65, v76 and v80 controller software databases. Also, starting with ATMS 2.8, a new ATMS database file will be created for each intersection known as the Synchro database. Thus, when a new controller is defined, there will be disk space allocated for 9 database files (types); Standard, Permanent, Upload, five Special databases (Special 1-5) and Synchro. The Synchro database will support the same functionalities as the other databases **except**:



- Exporting a Synchro database from ATMS to Synchro users will not be allowed
- The user is not allowed to directly download the Synchro database to a controller. However the user is allowed to copy the Synchro database to another database type such as Special1. The user must inspect the database, originally received from Synchro, prior to copying it to another database type and prior to downloading it to a controller.

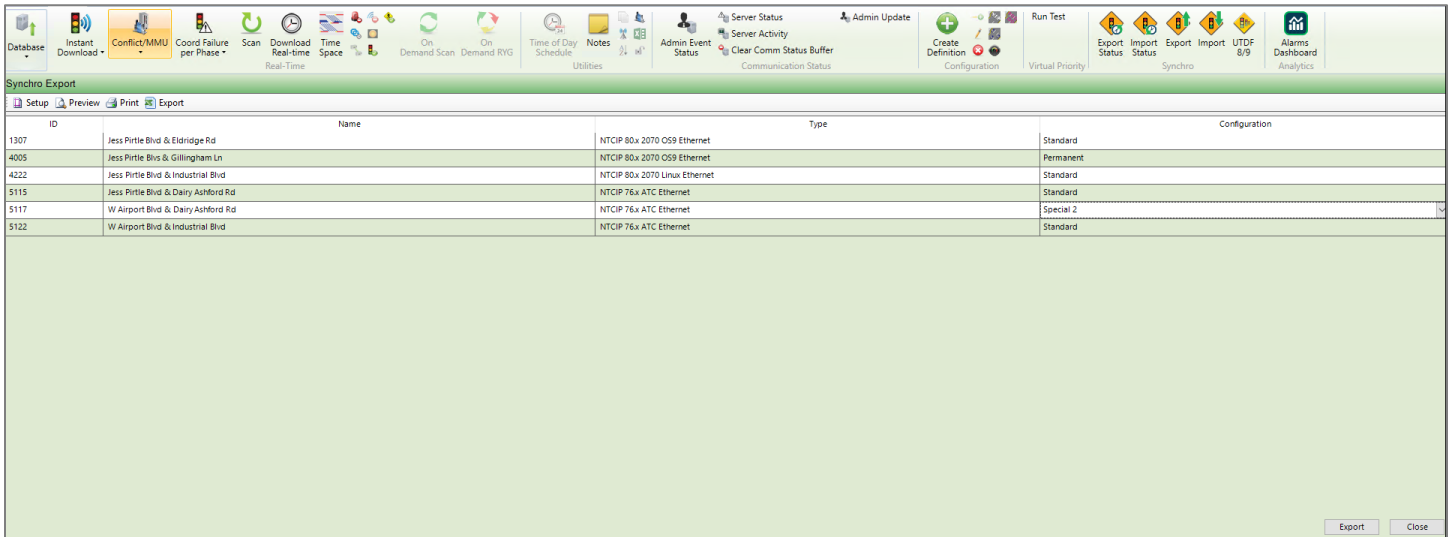
Two intuitive and interactive wizards are available to guide a user through the Export or Import process. Wizards provide an abundance of feedback information for various cases. Examples of the feedback include; explaining what the course of action will be based on the user's choices, warnings about potential harmful decisions, messages in case an error has occurred and many more.

### Export from ATMS to Synchro

The Export procedure from ATMS to Synchro sends a selected controller database (Standard, Permanent or Special databases) to a selected Synchro user or users. Export can be initiated by clicking the Export button in Ribbon bar or by right clicking the controller and selecting Synchro.



After that, user will see selected controller(s) and at that point can configure which database will be exported. This is done by clicking the **Export** button on the lower right corner.



After that step, an Export Wizard will appear with the greeting message as shown below.



Select **Next** to navigate to the first page of Export Wizard. A list with all controllers and their respective databases selected for Export will appear. The ATMS user can add a note for the Synchro user, to communicate necessary details about the export.

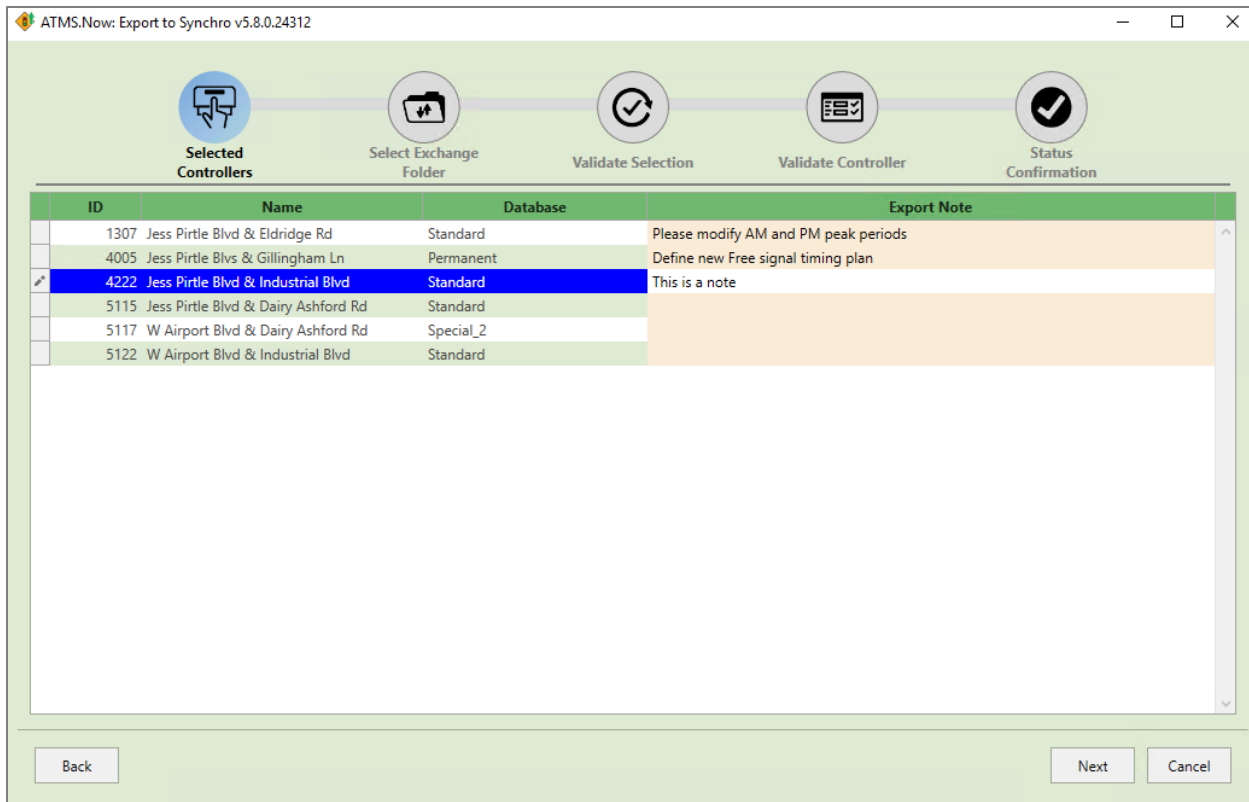
Both the Import and Export wizards have indications of what actions will be taken, which steps got previously completed, and how many steps remains until the process of exporting or importing has been completed. Explanations are provided by icons and by text beneath icons as shown below.



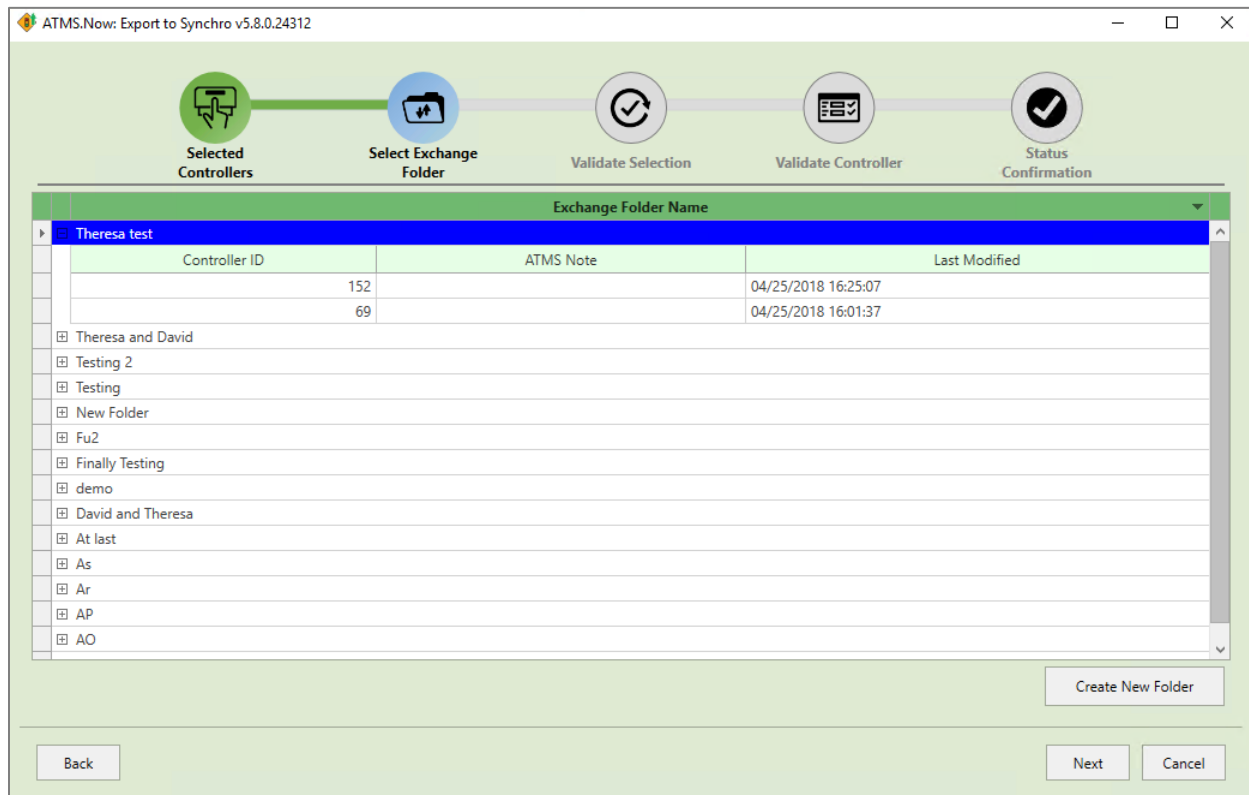
The Color of the icons on the top of both Export and Import wizard also provides certain levels of information:

- **Blue** – current page
- **Green** – completed steps (previous pages)
- **Red** – error that prevents continuing of the import/export process
- **Yellow** – warning to indicate an important message to user but the process can still be continued

The same colors will show in tabs and parameter value fields to help user to identify where closer inspection is needed. Below is an example of the first displayed page of the Export wizard.

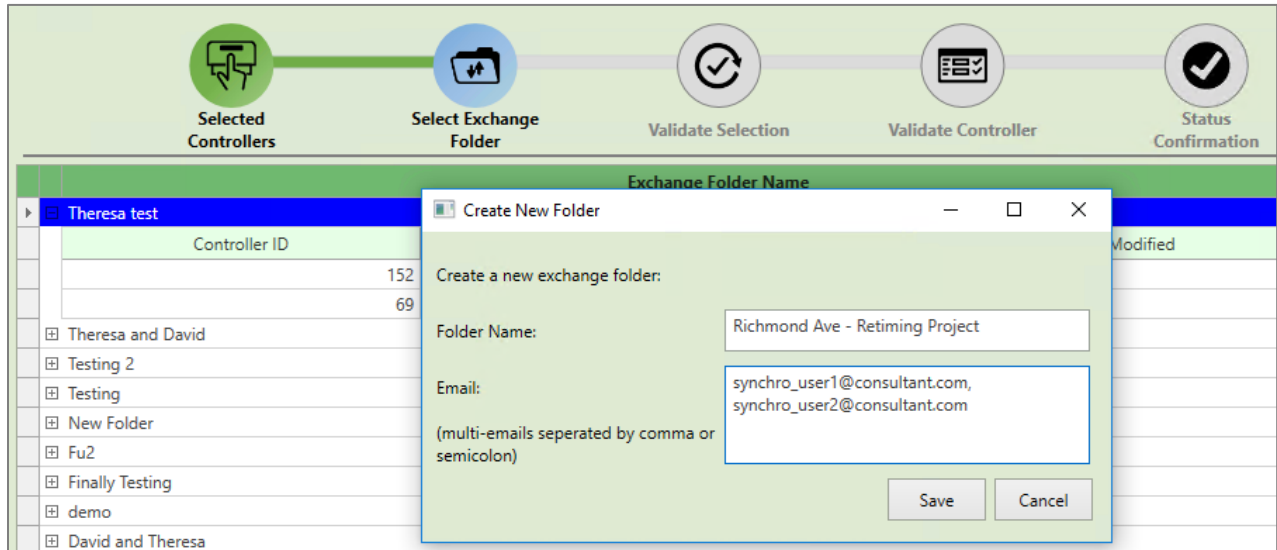


After adding export notes for Synchro users, and hitting the **Next** button, the next page is used for selecting an existing Exchange Folder or creating a new one. Clicking on the “+” sign will expand the Exchange folder and show files that were previously placed there. An Exchange Folder should be considered as a common space for ATMS user(s) and Synchro user(s). That is a gateway from where signal timings will be exchanged.

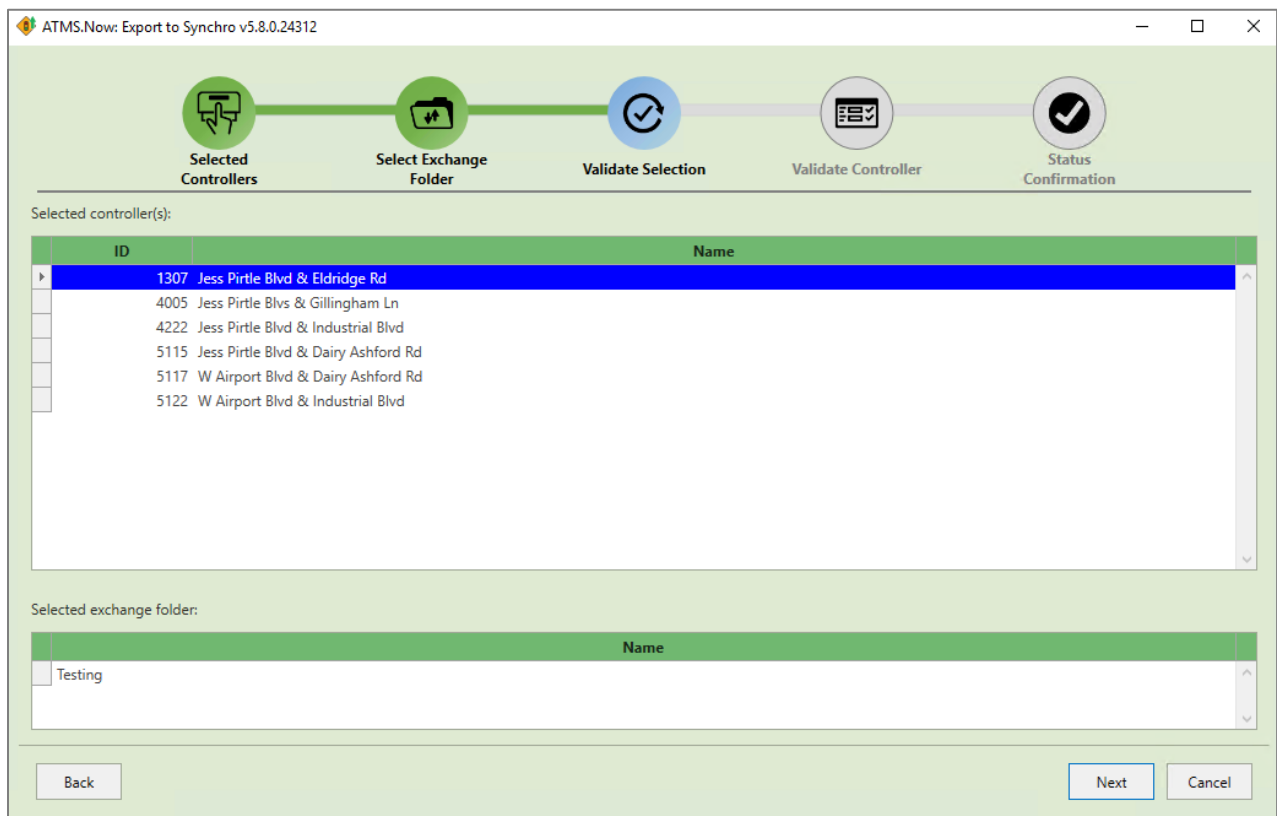




New Exchange Folders can be created by the ATMS user(s) only by clicking the button **Create New Folder**. A user must define the name of that Exchange Folder (i.e. the project name or any name that will help user to identify to whom signal timing databases are being sent and for what reason). In the Email section, the user needs to specify email addresses of the Synchro users that will have access to this Exchange folder (i.e. the persons that will be collaborated with). An access code will be sent to those emails, and Synchro users will use that access code to subscribe to a specific Exchange Folder and receive all signal timings that will be exported by ATMS user(s).



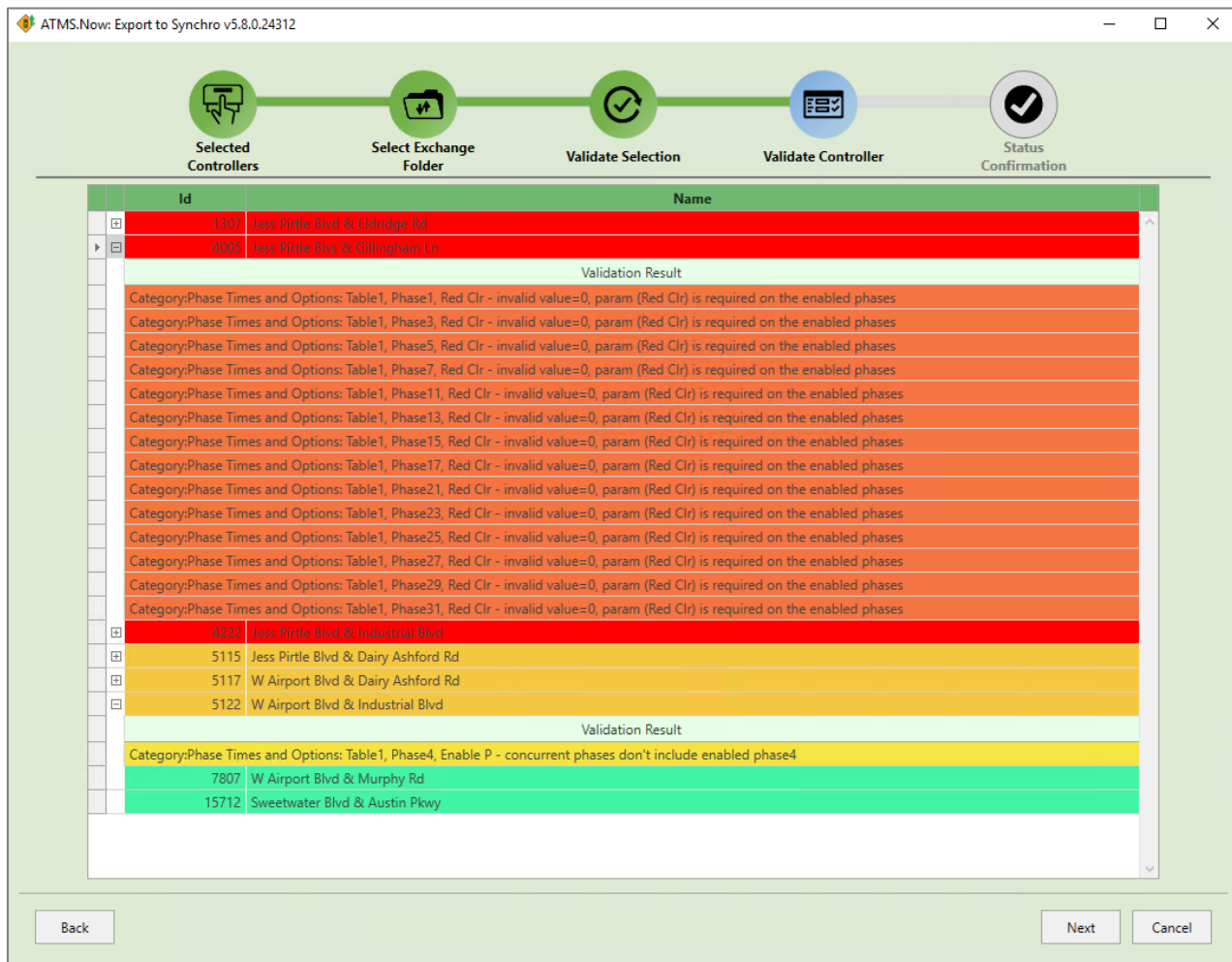
The step that follows is the validation of the selected controllers and Exchange Folders. The user will verify controller databases and the Exchange Folder to which those databases will be exported to. If, for example, a wrong Exchange Folder is selected, the user can navigate back to the Select Exchange Folder page by clicking the **Back** button in lower left corner of wizard.



Validation of database content occurs next. This verification checks if certain mandatory parameter values are set up. There are three possible outcomes:

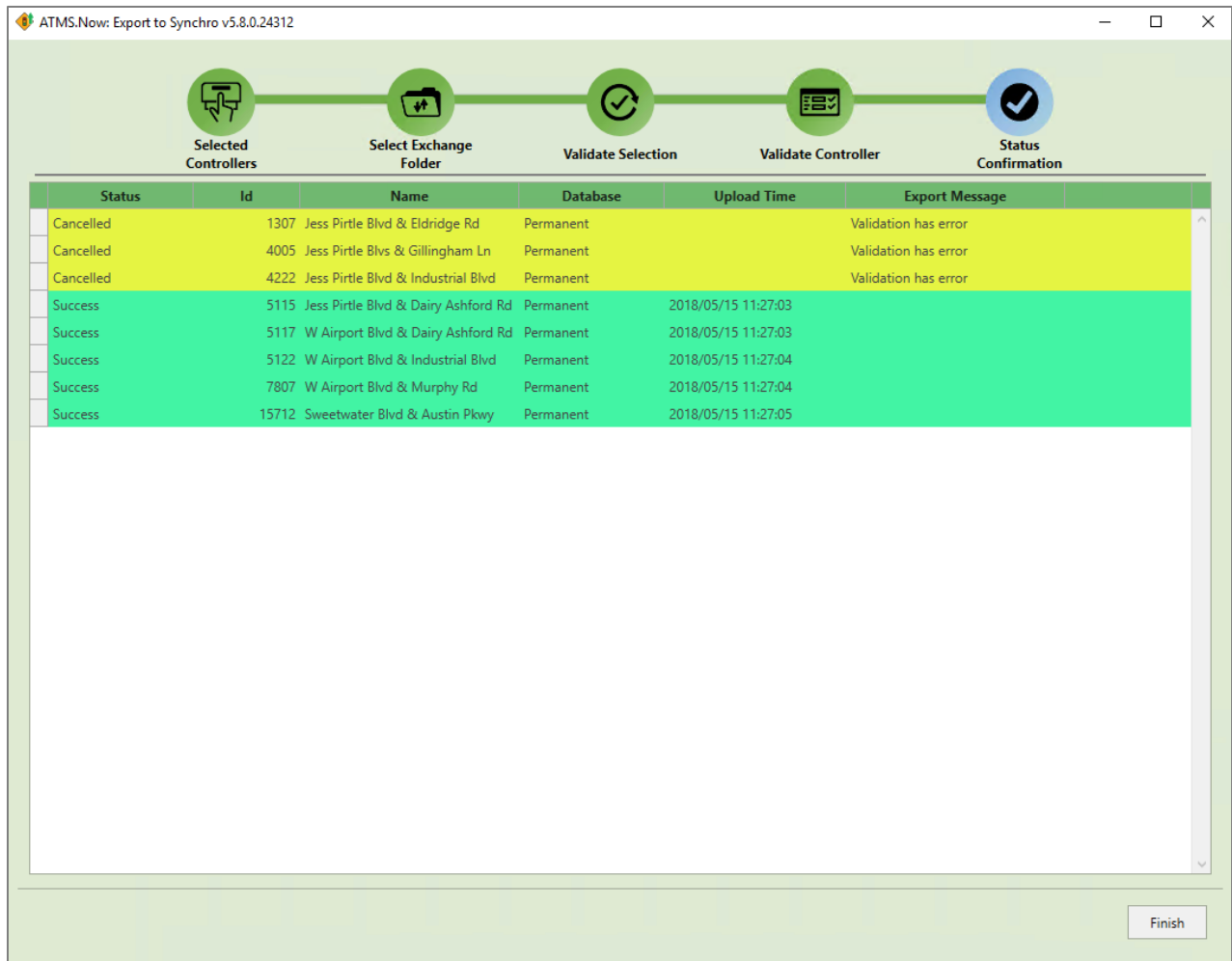
- There are no warnings and all mandatory parameters are set up correctly– controller is highlighted green
- Some of mandatory parameters are missing – controller is highlighted red
- All mandatory parameters passed the validation; however, certain warnings are issued – controller is highlighted amber

To see further details about any controller that has errors or warnings, please click on the “+” sign on the left-hand side to collapse the list. This will allow all messages to be displayed so they can be reviewed. All controllers highlighted in green or amber can still be exported. Controllers highlighted in red will not be allowed to be exported.



The final step of the export procedure is to confirm the status that the signal timings have been sent. All databases that have been successfully placed in Exchange Folder will be marked in green. Those databases in which the export was stopped due to validation issues, will be highlighted yellow. In case there are files which passed validation inspection and were supposed to be sent to Synchro users, but failed to be delivered (such as the case of communication failure), the files will be highlighted in red and will have status labeled as “**Failed**”. Databases who failed to be sent to Synchro User, can be resent by trying again.

Please note that “**Success**” in the Status column means that sent database has become available to the Synchro user, **not** that Synchro user(s) has opened it in Synchro application.



After the export process is done and status of the databases is confirmed, click the **Finish** button to close Export wizard.

### Export Status List

A list of all exported databases with details is available via the Export Status screen. That menu can be accessed by clicking the Export Status icon in Ribbon bar or by right clicking on any of the controllers in List view and selecting Synchro, then Export Status. The Export Status menu contains the controller(s) ID number and controller(s) Name that were exported. It will also list which Exchange folder that the databases were sent to (Project Name). Also listed is the Date and Time that the export happened and the note that the ATMS user wrote to the Synchro users, if any. This list behaves like any other list in ATMS, which means it can be sorted by any column by clicking on the column header.



Controller ID	Controller Name	ATMS Note	Project Name	Last Modified DateTime
15712	Sweetwater Blvd & Austin Pkwy		Testing	5/15/2018 11:27 AM
7807	W Airport Blvd & Murphy Rd		Testing	5/15/2018 11:27 AM
5122	W Airport Blvd & Industrial Blvd		Testing	5/15/2018 11:27 AM
5117	W Airport Blvd & Dairy Ashford Rd		Testing	5/15/2018 11:27 AM
5115	Jess Pirtle Blvd & Dairy Ashford Rd		Testing	5/15/2018 11:27 AM
5122	W Airport Blvd & Industrial Blvd		Testing	5/15/2018 11:07 AM
1307	Jess Pirtle Blvd & Eldridge Rd	v80 OS9	AO	5/10/2018 5:56 PM
5524	US-90 & University Blvd	2 phases only	AO	5/10/2018 4:00 PM
5115	Jess Pirtle Blvd & Dairy Ashford Rd	v76 5115 testing	AO	5/10/2018 1:06 PM
15712	Sweetwater Blvd & Austin Pkwy		AO	5/10/2018 12:30 PM
15712	Sweetwater Blvd & Austin Pkwy		AO	5/10/2018 12:23 PM
7807	W Airport Blvd & Murphy Rd	o1	65 Test	5/8/2018 6:24 PM
7807	W Airport Blvd & Murphy Rd	v65 Database phases 1-8	65 Test	5/7/2018 1:55 PM
15712	Sweetwater Blvd & Austin Pkwy		AO	5/7/2018 11:09 AM
15712	Sweetwater Blvd & Austin Pkwy		AO	5/7/2018 11:05 AM
15712	Sweetwater Blvd & Austin Pkwy		AO	5/7/2018 11:03 AM
5642	SH-6 & Imperial Blvd		AO	5/4/2018 2:48 PM
5642	SH-6 & Imperial Blvd	Modify AM peak	AO	5/4/2018 2:47 PM

Beside clicking on an icon in Ribbon bar or right clicking on the controller to access Synchro options, the user can also switch to the Import Status screen from the Export Status screen by right clicking on any entry.

### Import from Synchro to ATMS

The import procedure from Synchro to ATMS defines the way how new signal timings received from the Synchro user will be imported. An Import can be initiated by clicking the **Import** button in Ribbon bar or by right clicking a controller and selecting Synchro option Import.



The Import wizard, like the Export wizard, welcomes an ATMS user by greeting message after which first page of Import wizard is displayed. On that page, an Exchange folder can be selected from which a file received from the Synchro user can be imported.

ATMS.Now: Import from Synchro v5.8.0.24312

Select Exchange Folder
Select Files to Import
Assign to Controller
Define Import Rules
Import Rules Confirmation
Show Differences
Final Summary

Exchange Folder Name

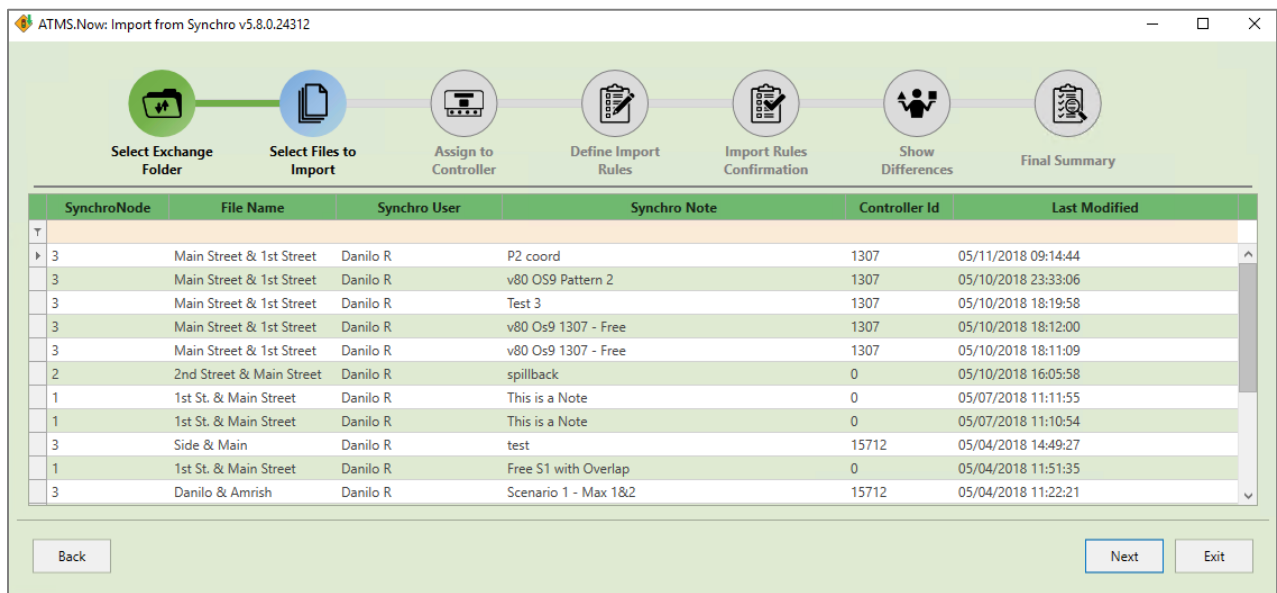
- Theresa test
- Theresa and David
- Testing 2
- Testing
- New Folder
- Fu2
- Finally Testing
- demo
- David and Theresa

Back Next Exit

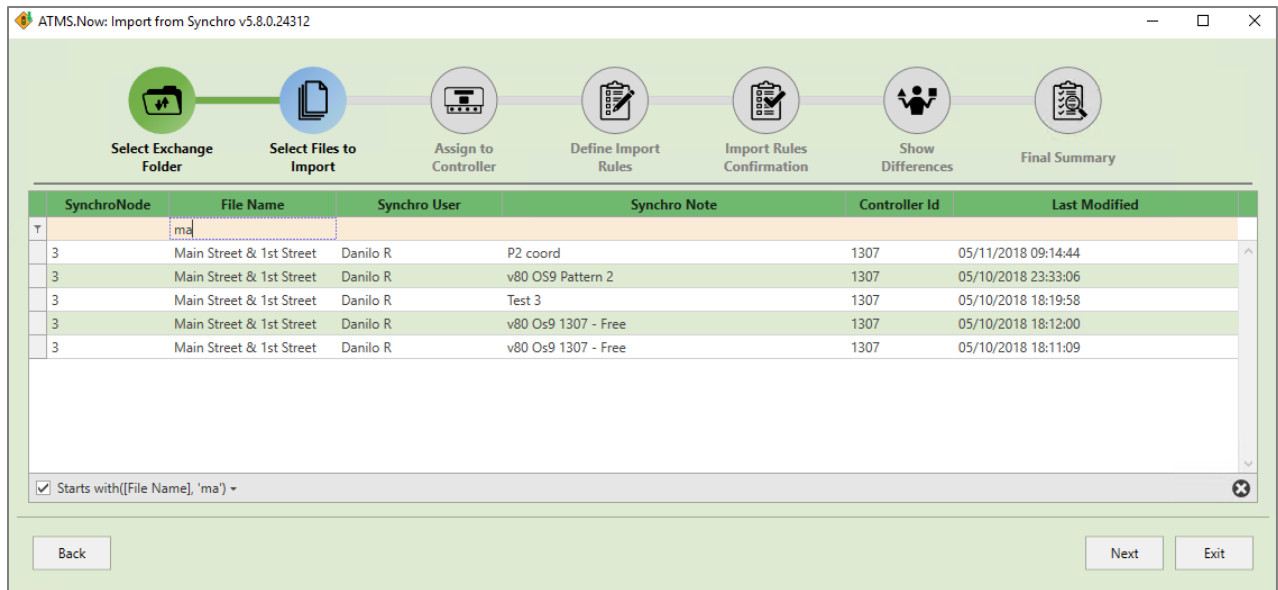
After selecting an Exchange folder, a list with all files available in that Exchange Folder will appear. A list will contain multiple information that was originated in Synchro:

- **SynchroNode** – the node number (intersection) in the Synchro software
- **File Name** – the names of both streets as entered in Lane Settings menu in Synchro
- **Synchro User** – the name of the Synchro user defined in Synchro
- **Synchro Note** – the note created by the Synchro user for ATMS user(s)

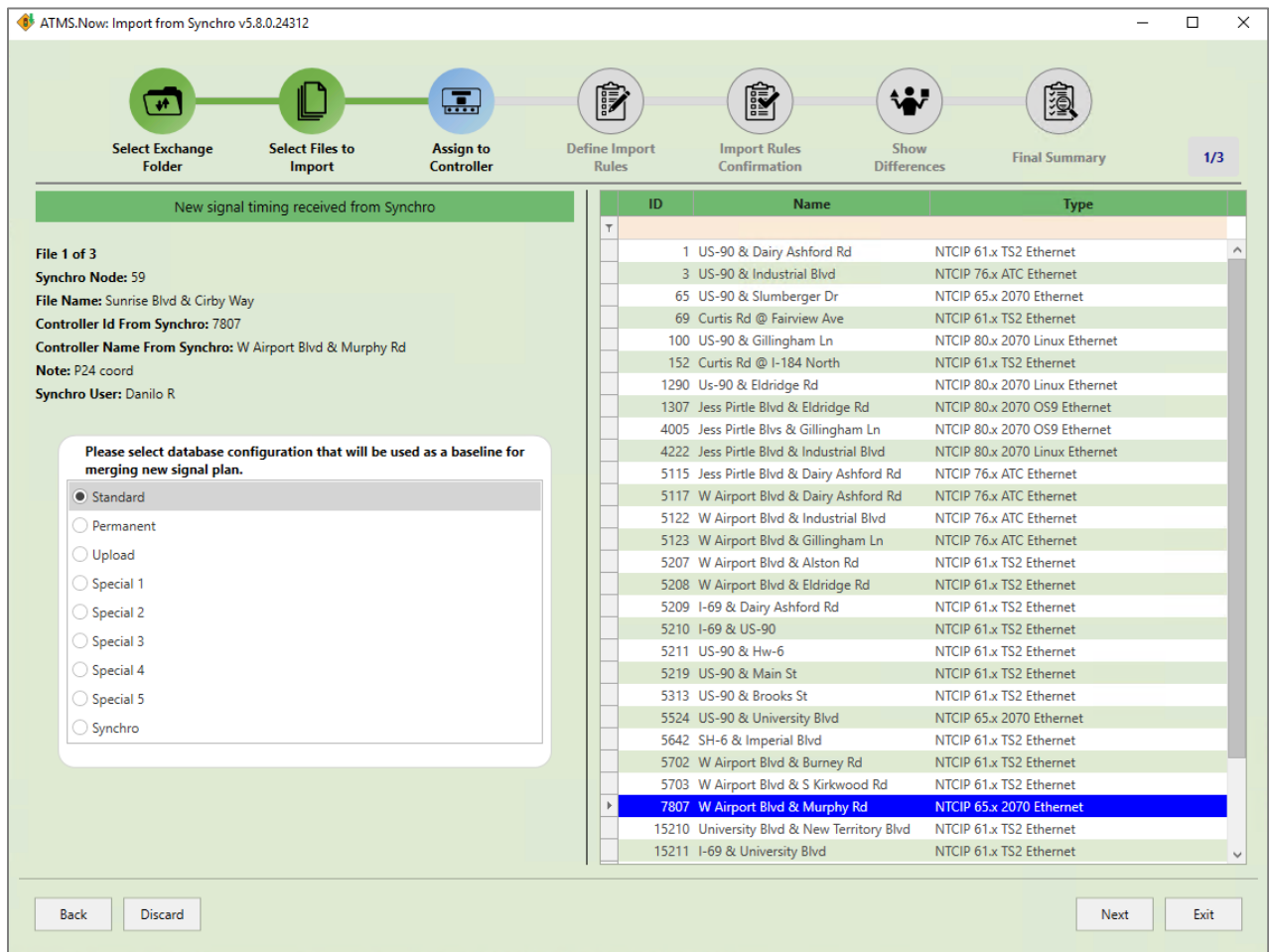
Along with the above information, the ATMS user will be able to see the Controller ID number. In the case where the Synchro user has modified a file that was previously exported to Synchro from ATMS, The ID number of the controller will be saved in Synchro and sent back to ATMS for easier identification. If a Synchro user sends a file that was not previously exported from ATMS to Synchro, then the Controller ID will show an ID # 0 for all signal timings created in that manner. The Last Modified column shows when the file became available to the ATMS user to import.



Please note the Pale Orange field at  the top of the list, just underneath the header. Whenever this color is used, it means that the field will accept user input. In this case, these fields can be used for dynamic filtering of the list. By entering characters, list will be filtered to show only entries that start with those characters in subject column. This feature can be very useful in case when list is very long and it would take time to scroll and find desired row. A User can select one or multiple signal timings that will be imported.



The next step of the import wizard is to assign the received signal timing(s) to a controller in ATMS.

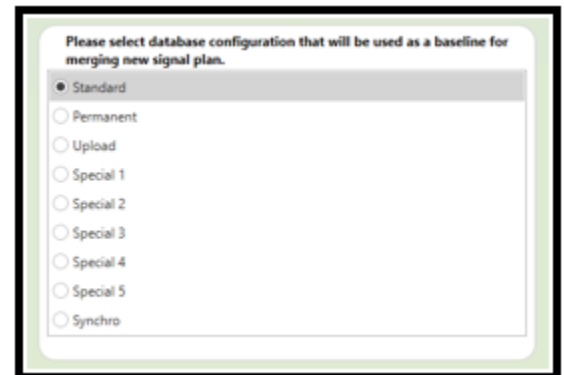


On the left-hand side of Assign to Controller page in the Import Wizard, the details of signal timing file received from Synchro are available. Below is a list of the information that is displayed:



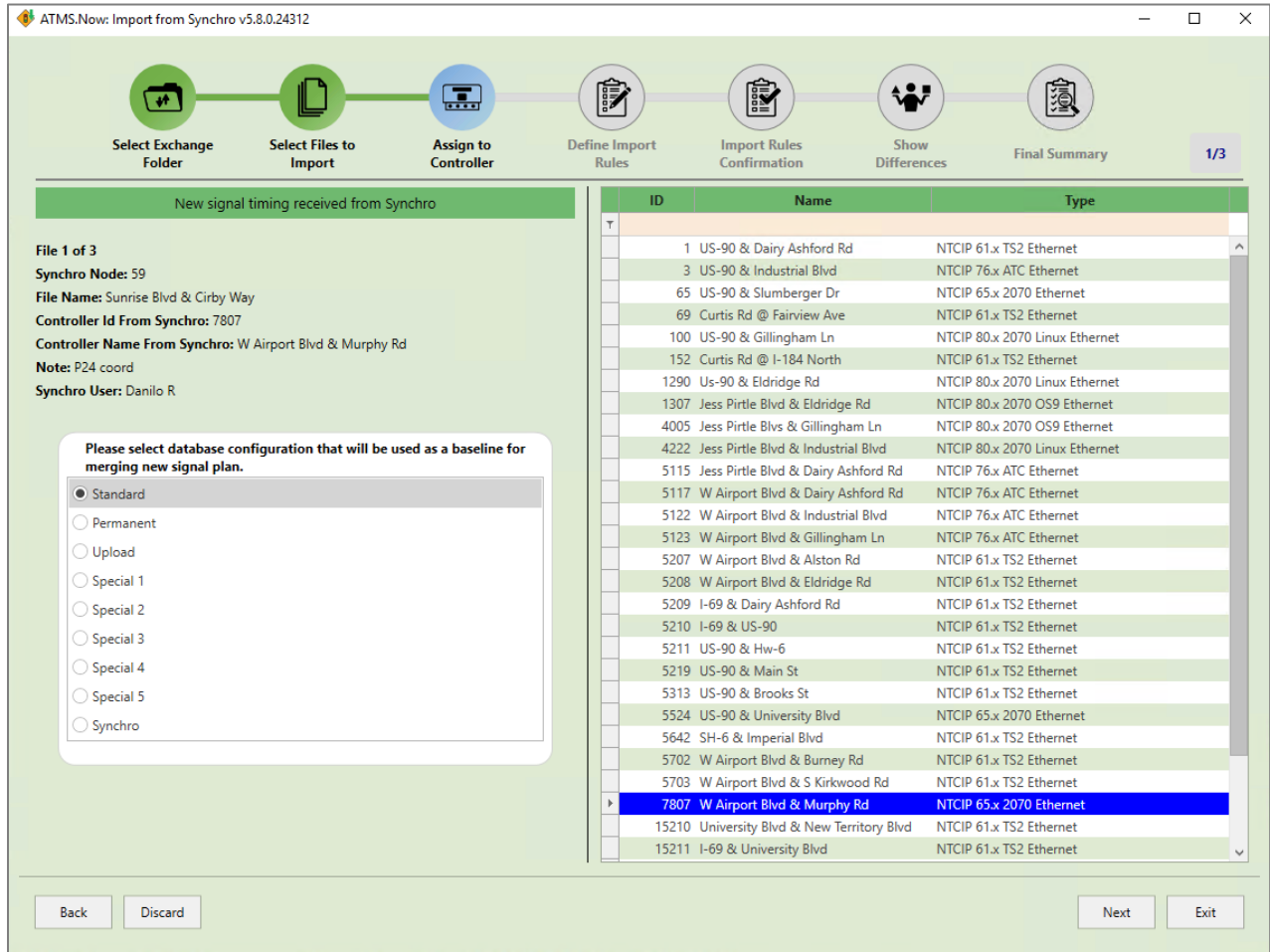
- **File** - The current file (i.e. the only file that will be imported or part of a group)
- **Synchro node** – The node number (intersection) in the Synchro software
- **File Name** – The names of both streets as entered in Lane Settings menu in Synchro
- **Controller ID from Synchro** – The Controller ID from ATMS, if previously exported
- **Controller Name from Synchro** – the name of the controller from ATMS, if previously exported
- **Note** – A note created by the Synchro user for the ATMS user(s)
- **Synchro User** – The registered name of a user in the Synchro software

Underneath, there is a white box where a configuration that will be used as a baseline can be selected. Since Synchro can manipulate only a subset of parameters that exist in a controller database, a baseline file is necessary to provide all remaining parameters not handled by Synchro software.



Please note that if multiple signal timings, for different patterns of one controller, get imported all at once in one controller, and user selects **Standard** as a baseline database every time, only the last signal timing will be part of the resulting Synchro database after merging the data. All signal timings received from Synchro that were merged before will be overridden. To import multiple patterns to a single controller database, the user should select the **Standard** (or any other database type for a baseline **except Synchro**) only for the first time. This will set up what will be the foundation of the new database. After importing the first signal timing from Synchro, the user should select the **Synchro** database every subsequent time as the new baseline. In this way, every new added signal timing plan will be added to Synchro database, which should contain previous timing plan changes.

Also, if multiple signal timings are imported at the same time, please note that after accepting the changes for one signal timing database, the wizard will move back to the Assign to Controller page for the following signal timing received from Synchro. This automatic procedure will continue until all signal timings from Synchro are imported.



On the right-hand side of this page, a list is visible that contains Controller IDs, Names and Types available in ATMS so user can choose to which controller database new signal timing parameters will be added. If the received signal timing was created from a file that was previously exported from ATMS, the ID and Name will be recognized and the controller selection will default to a controller with that same ID and Name. The user can still choose to assign new signal timings to another controller by changing the selection at any time.

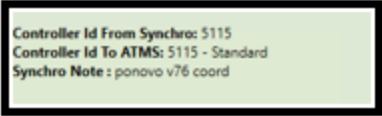
The First row of the list (marked in pale orange )  can be used as a filtering tool. The user can type in first characters of ID, Name or Type column, and list will be immediately filtered.



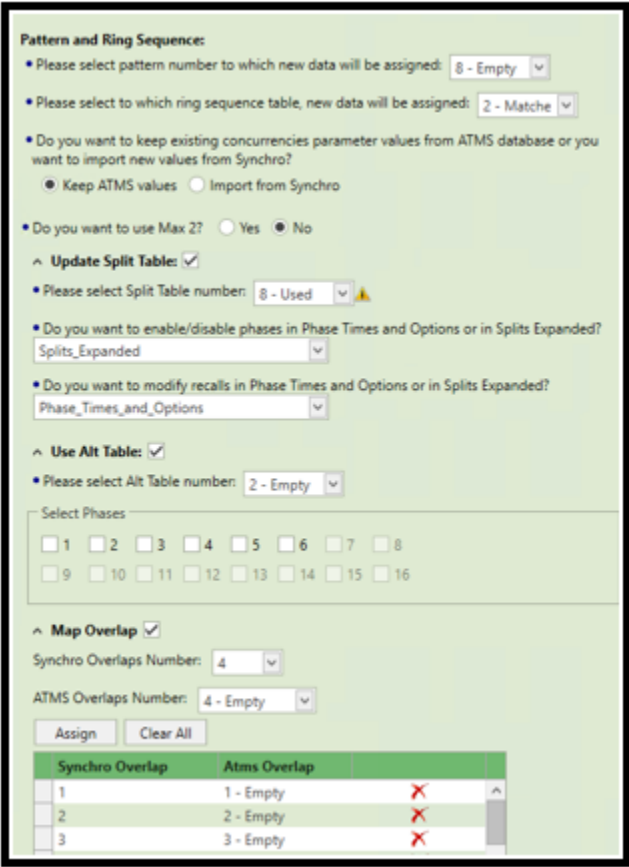
The Next step is defining the import rules. The left side of the Define Import Rules page in Import Wizard displays values received from Synchro. These values are placed into multiple categories available in controller options. By clicking on appropriate tab, a user will access values related to that category. A user can inspect that data so it will be easier to decide how new signal timing parameters should be imported. Since Export and Import wizards are shown in separate windows, the user has the option to run ATMS on one monitor, and the wizard on another monitor. In this way the user can compare existing values and positions with the values received from Synchro, in order to decide about import rules.

Please note that from the moment that a controller is assigned as a destination for new signal timing values from Synchro, the other databases of that controller are locked out for that and other users. This means that until the import process is complete and new values are accepted and placed, the ATMS locking feature will be active. This will prevent compromising data if simultaneous modifications occur with the same controller database by the Synchro wizard and other users in ATMS, or by multiple wizards that can be launched at the same time by one or multiple ATMS users. It is recommended to choose View database if user selects to open controller database while an import is in progress.

The top section of the Right-hand side of the Define Import Rules page shows the ID of the controller received from Synchro, the destination controller the selected baseline database and the Synchro note for the subject signal timing file received from Synchro user.



Underneath the general information mentioned in previous paragraph, a user entry section is shown. This is the place where the user defines how newly received values will be placed inside the selected controller database. The selections and questions are described below:



- Pattern** – The user should select a pattern that will be the destination for a part of the received signal timing parameter values. The user can select one of 48 patterns including FREE Patterns or pattern 254 (FREE) which is used for the general free operation of a controller. A dropdown menu is available where all available options will be displayed. Next to each pattern number there will be a description, if that pattern is already used, or if it is not used (empty) to alleviate decision making for ATMS user.

- Ring Sequence table** – The user should choose the ring sequence table to which new data will be allocated. A dropdown menu will show all available ring sequence table numbers with the description if the subject ring sequence table is used (contains some values), Empty (has no values) or Matched (Identical ring Sequence like the one received from Synchro already exists in subject table).

- Concurrencies** – A user has option to choose if new concurrencies received from Synchro will be imported and used or current values in selected ATMS baseline database will be kept.

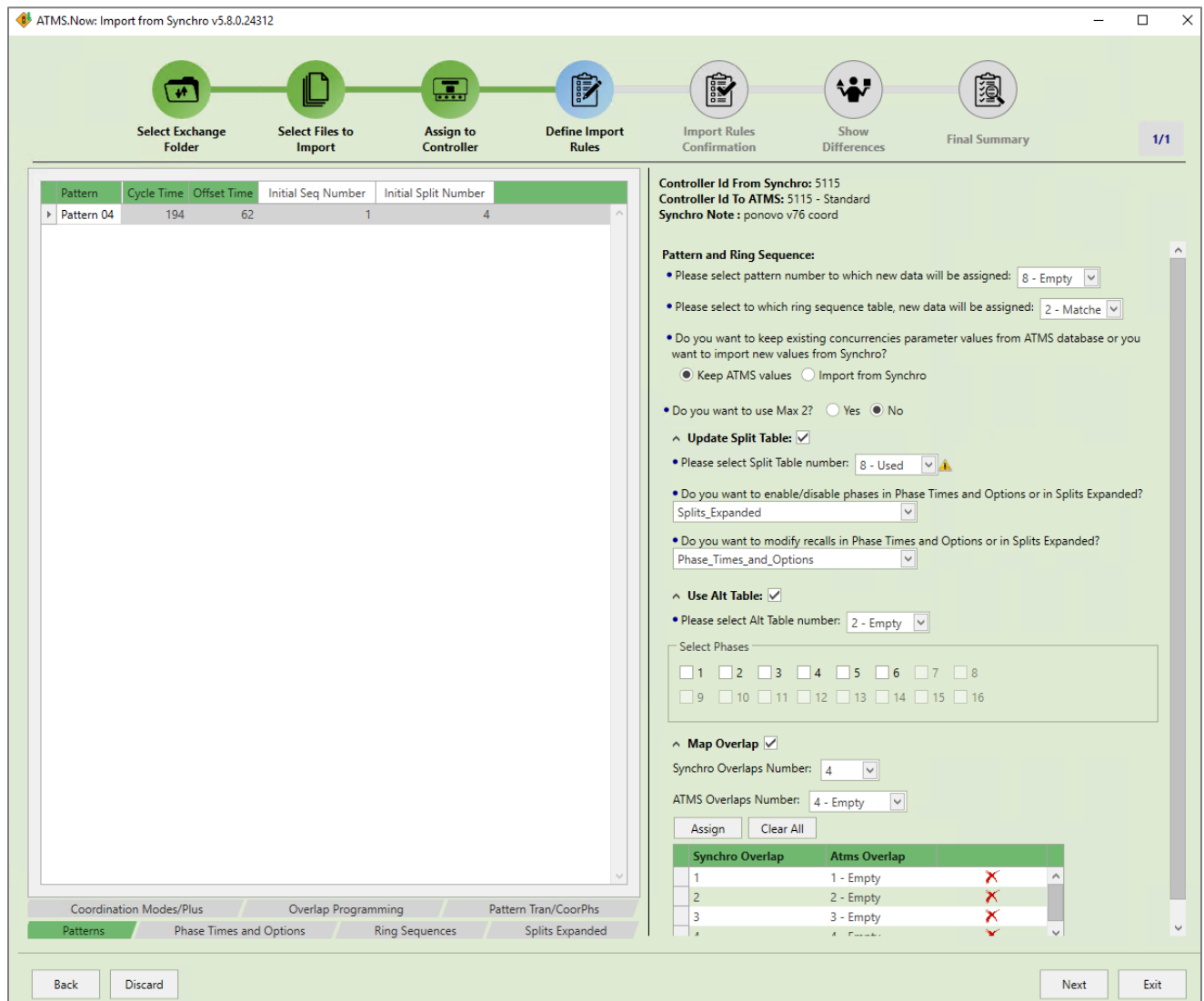
- Max 2** – This will import the green times received from Synchro into Max 1 or Max 2 parameters. If the user wants to use Max1 times, select **NO**. If a user wants to use

Max 2 times, select **YES**. This selection can affect general parameters in Phase Times and Options (Phase Entries), Alt tables and Pattern categories, depending on other selections.

- Split Table** – in case user selects to use Split Tables, a set of three new questions will appear. The first dropdown menu displays the available Split tables and their status (Empty or Used). If Synchro specifies that some phases should be enabled or disabled compared to the existing setup in the selected ATMS database, the user can decide if enabling/disabling of phases will happen in the general Phase Times and Options table (where it will affect all patterns), or if it will occur in Splits (Expanded) tables under the parameter Mode (where only parameters that call that specific Split table will be affected). The same option is available for determining destination for recalls. Please note that both enabling/disabling and recalls use the same parameter in the Split tables, i.e the Split Mode. Both actions cannot be performed in Splits (Expanded) Tables. Therefore, if the user selects to enable/disable phases in Splits table, the recall modifications have to be done in Phase Times and Options and vice versa.
- Alt Table** – by checking the box next to Alt Table two new questions will be displayed. First, the Alt table number, which will be the destination for part of signal timing values received from Synchro, needs to be selected. The dropdown menu will show available Alt tables. Depending on the selected destination controller type, these table numbers can vary. For each table, a status is shown to indicate if Alt table is

Used or Empty. Secondly, a selection for which phases the received values from Synchro will be imported into the Alt table is available. Only checkboxes for phases that are enabled in Synchro will be available for selecting. All remaining phases up to the maximum for a specific controller type will not be available for modification. Import will not proceed until at least one checkbox is checked in case Alt table is selected by user.

- Overlaps** – If received Synchro signal timing contains overlaps, the Map overlap section will appear. All overlaps defined in Synchro will appear in Synchro Overlaps Number dropdown menu while ATMS data parameters for overlaps will be shown in ATMS Overlaps Number dropdown menu. The availability of all overlaps in ATMS (Used or Empty) will be indicated next to each overlap number. A user needs to define each pair of Synchro-ATMS overlap number combinations to assign all overlaps received from Synchro by clicking Assign button. All overlap assignments can be deleted by clicking Clear All button. One by one deletion can be accommodated by clicking the red X mark next to subject Syncho-ATMS overlap pair in the table. The Import will not proceed until all overlaps from Synchro are assigned.



The Import Rules Confirmation page of the Import wizard displays the summary of selections made by the user. For each selection, the rule description and the selected value or explanation are provided. In cases when existing parameters can get overwritten, a warning is issued so that the user is aware of consequences for a specific selection. In the case when parameters will not be overwritten, but some other options such as tables or patterns

can get affected, a reminder is shown so user can verify if a defined selection is an appropriate choice or it should be modified.

ATMS.Now: Import from Synchro v3.8.0.24312

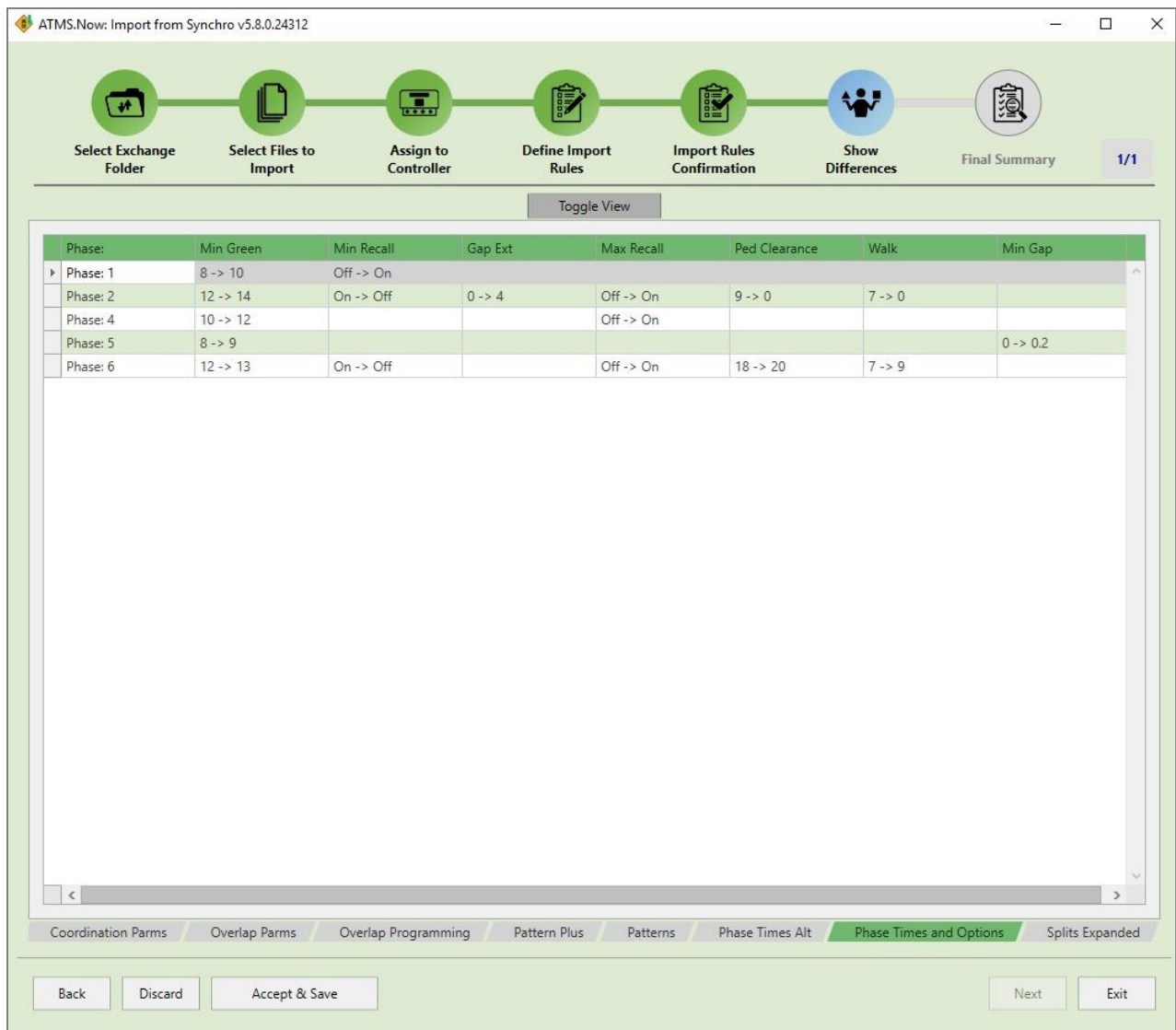
1/1

Select Exchange Folder    Select Files to Import    Assign to Controller    Define Import Rules    **Import Rules Confirmation**    Show Differences    Final Summary

#	Mark	Rule	Value
1	✓	The selected pattern number is	8 - Empty
2	✓	The selected ring sequence table number is	2 - Matched
3	✓	Do you want to keep existing concurrencies parameter values from ATMS database or you want to import new values from Synchro?	Keep ATMS values
	Reminder	Please check if all phases enabled in signal timing plan received from Synchro have appropriate concurrencies defined.	
4	✓	Do you want to use Max 2?	No. Green times received from Synchro will be placed in Max 1 parameter column or in Time parameter column if signal timing is coordinated.
5		Updating split table is selected, the selected split table number is	8 - Used
	Warning	Existing values will be replaced by new values from Synchro. Please note, all patterns that use this Split table will be affected.	8 - Used
6	✓	Phases will be enabled/disabled in	Splits_Expanded
	Reminder	Phases will be enabled/disabled as needed, in Mode parameter, part of Splits Expanded menu. Please note that other patterns using the selected Splits Table might be affected.	
7	✓	Recalls will be modified in	Phase_Times_and_Options
	Reminder	Recalls will be placed in Phase Times and Options menu. Please note that other patterns might be affected.	
8	✓	Alt table is selected, values received from Synchro are imported to alt table number:	2 - Empty
	✓	For Alt table number 2 - Empty, the selected phase(s) are:	3
9	✓	Overlap(s) assigned as following:	1 -> 1 - Empty; 2 -> 2 - Empty; 3 -> 3 - Empty; 4 -> 4 - Empty
	Reminder	Please note that Parent P Clrncs parameter in (General) Overlap parameters will be turned ON.	

Back    Discard    Next    Exit

The Next page is a Show Differences page. On this page the user can see specifically what changes will occur for each specific parameter and value. Only those parameters whose values will change are displayed in this page. All other parameter values that will not be affected, will not appear on this page.



There are two available views for analyzing changes. Categorized or Traditional.

- Categorized- All parameters are grouped in categories per their location in controller database. The existing value is on the left side of the arrow in each field, while new value is on the right side of the arrow in every field. This view is very useful for quick evaluation of changes that will be executed if user clicks the **Accept** and **Save** button. By clicking the **Toggle View** button above the table, the view will change to “Traditional” view.
- Traditional: This view will compare via the show differences list. Via this view, all affected parameters and values are placed in the column labeled “**From Value**” that represent existing values in controller database, while values in the “**To Value**” column represent new values. In case there are any exceptions, they will be displayed in “**Exception**” column.

In cases where the user does not want to accept changes in the selected destinations, the **Discard** button aborts the import action, and no changes will be made. If there are more Synchro files that are supposed to be imported, the Import wizard will skip to next Synchro signal timing. Otherwise, if user accepts the changes via the the **Accept and Save** button, a pop-up message will ask user to confirm this action, and confirmation is displayed after changes have been successfully made.

ATMS.Now: Import from Synchro v5.8.0.24312









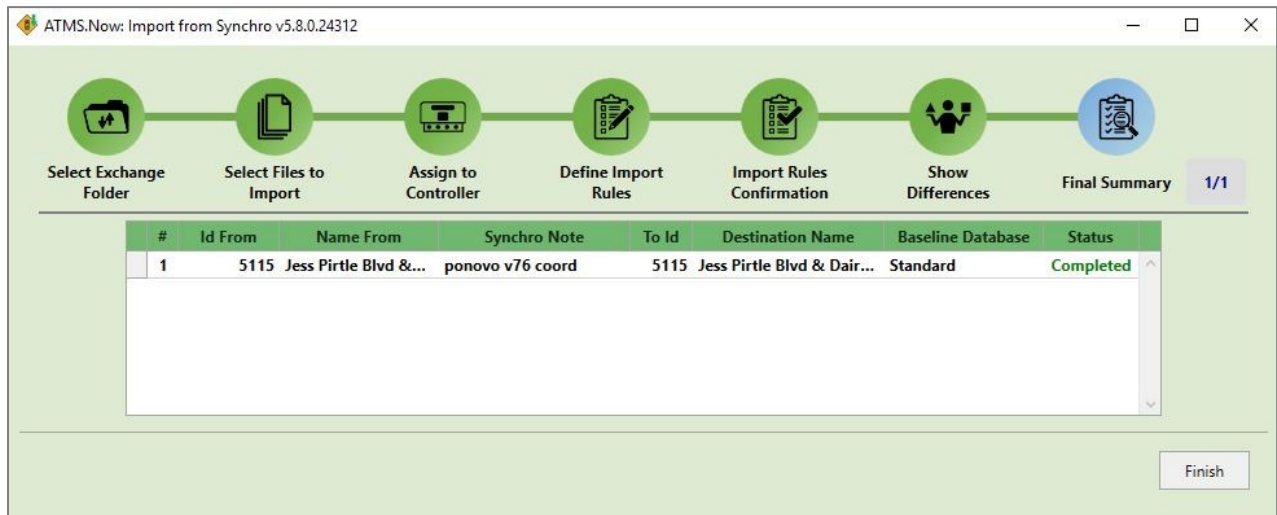
Select Exchange Folder    Select Files to Import    Assign to Controller    Define Import Rules    Import Rules Confirmation    Show Differences    Final Summary    1/1

Toggle View

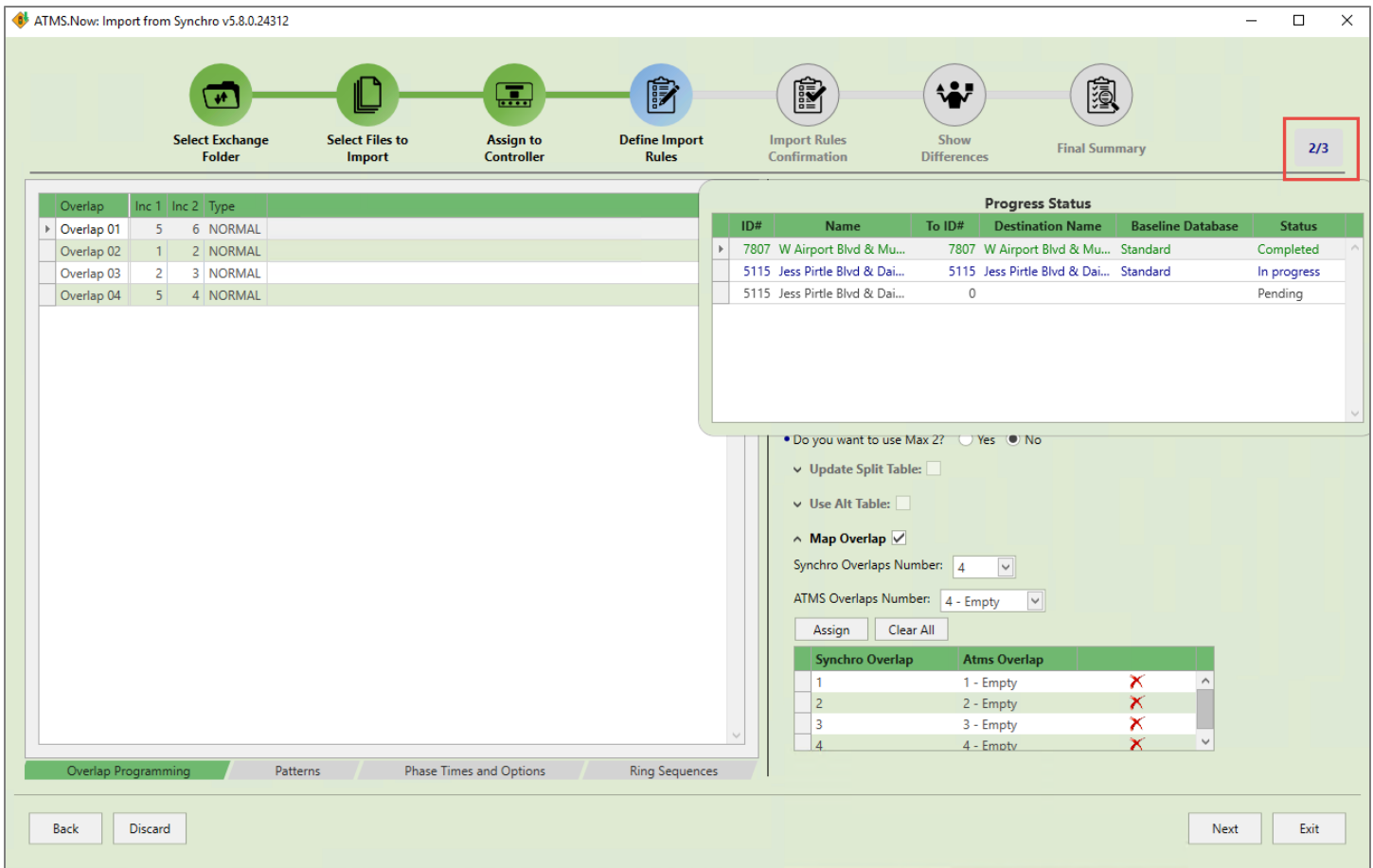
Parameter	From Value	To Value	Exception
<b>Phase Times and Options</b>			
Table: 1			
Phase: 1			
Min Recall	Off	On	
Phase: 2			
Gap Ext	0	4	
Max Recall	Off	On	
Min Green	12	14	
Min Recall	On	Off	
Ped Clearance	9	0	
Walk	7	0	
Phase: 4			
Max Recall	Off	On	
Min Green	10	12	
Phase: 5			
Min Gap	0	0.2	
Min Green	8	9	
Phase: 6			
Max Recall	Off	On	
Min Green	12	13	
Min Recall	On	Off	
Ped Clearance	18	20	
Walk	7	9	
<b>Splits Expanded</b>			
Table: 8			
Split Expanded: 1			
Coord Phase	ON	OFF	
Mode	OMT	ENB	
Time	0	28	
Split Expanded: 2			
Coord Phase	ON	OFF	

Back    Discard    Accept & Save    Next    Exit

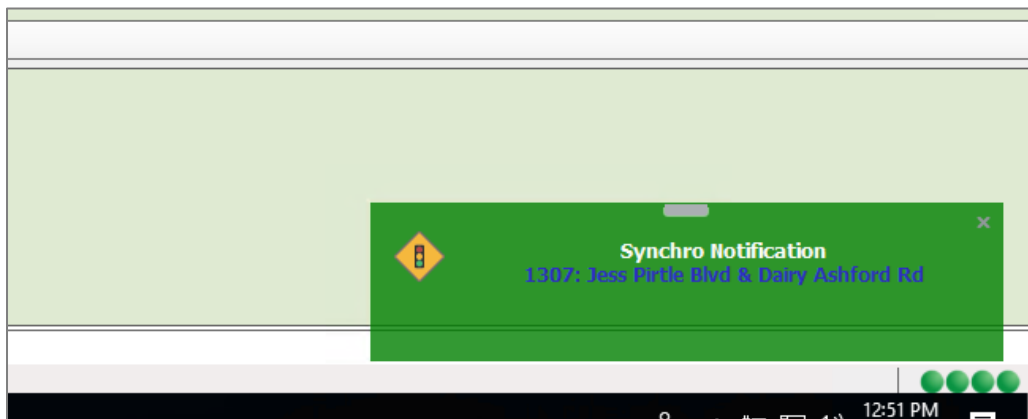
Finally, a Summary page is displayed as the last page of Import wizard. This page shows which file(s) were part of the import process and the details regarding the signal timing files, the selected actions and final status. One can validate details about Controller ID number imported from Synchro, the Name of the Intersections and the Notes received from Synchro. In addition, a user can validate details about the selected destination controller ID, the controller name and the database that was selected as a baseline. Finally, the status will show “Completed” if changes were saved or “Cancelled” if import process got discarded.



Please be assured that at any given moment during the Import process, the user can check the status of all signal timings that are selected for import. Simply click the box showing a fraction number at the upper right corner of the Import wizard. That action will open another window with the progress status. There, the status of all selected files for import with details are available. The user can check how many files already got imported, which one is current file in progress and how many more are remaining.



It is important to note that when Synchro user sends a modified signal timing plan to ATMS, all ATMS users currently logged will receive notification. This notification will appear in lower right corner. By clicking on that notification, the user launches the Import wizard from the third page, skipping the steps for selecting Exchange Folder or selecting the file since those are known for a file that was displayed in a notification.





## Import Status List

The Import Status list can be accessed by clicking the Import Status button in Ribbon bar, or by right clicking on a controller and selecting options Synchro and Import Status or from Export Status by right clicking on any entry and selecting Import Status.



The list contains details about files available for import that are sent by all Synchro users to all Export Folders created and defined by ATMS users. For every signal timing file from Synchro, a new entry will be created. Each entry has Controller ID and name if a used Synchro file has previously received an exported database from ATMS. The Controller ID can also display a “0” and blank name field respectively if the Synchro file was not generated based on a previously exported database from ATMS. Also shown will be the Node number for an intersection in Synchro, the name of the Synchro user who sent the file is available as well as Exchange folder (Project Name) name where a file is received. Notes from the Synchro user alongside with description of pattern affected in subject file is also available. Finally, date and time when a file became available for import to ATMS are displayed.

Controller ID	Controller Name	Created By	Project Name	Synchro Node	Synchro Notes	Synchro Pattern	Last Modified DateTi
15712	Sweetwater Blvd & Austin Pkwy	Danilo R	AO	3	test	al	5/4/2018 2:49 PM
0		Danilo R	AO	1	Free S1 with Overlap	Scenario 1 with Overlap	5/4/2018 11:51 AM
15712	Sweetwater Blvd & Austin Pkwy	Danilo R	AO	3	Scenario 1 - Max 1&2	Scenario 1 - Free 254	5/4/2018 11:22 AM
0		Danilo R	AO	1	Sample Overlap	Coordinated Overlap	5/3/2018 3:58 PM
15712	Sweetwater Blvd & Austin Pkwy	Danilo R	AO	3	Scenario 1 Free	Free S1	5/3/2018 2:18 PM
15712	Sweetwater Blvd & Austin Pkwy	Danilo R	AO	3	Take 2	Remember it	5/3/2018 1:08 PM
15712	Sweetwater Blvd & Austin Pkwy	Danilo R	AO	3	Forget it	Scenario 8 Second time	5/3/2018 10:32 AM
15712	Sweetwater Blvd & Austin Pkwy	Danilo R	AO	3	8+	Scenario 8+	5/1/2018 5:55 PM

By right clicking on any of the entries in Import Status list, two options become available, switching to Export Status list or importing the signal timing file.

Please note that notification for new available file received from Synchro will appear only if ATMS client is opened. In cases when Synchro users send files while ATMS user are not using ATMS client application, newly available files for import can always be found in Import Status list where the last file received from Synchro user will be on the top of the list.

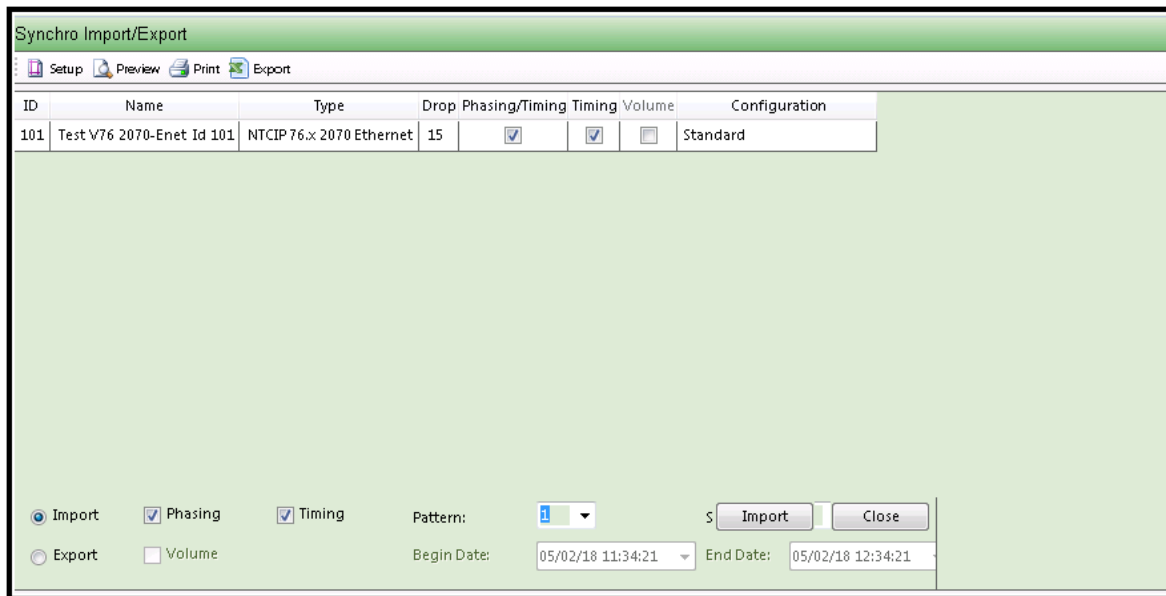
## 5.7.2 UTDF Synchro Import / Export

Integration of the full UTDF database from Cubic | Trafficware Synchro7/8 is available to **ATMS**. The *Synchro Import/Export* utility provides the ability to *Export* traffic counts and FREE timing as a combined “.csv” file to Synchro for optimization. The *Import* function provides the ability to import a combined “.csv” file which includes a combined Phasing and Timing tables from the Synchro7/8/9 program directly into a controller file (Standard or Upload1-5 files). Synchro 7/8/9 combines the “Timing.dat” and “Phasing.dat” files into a single “.csv” file.

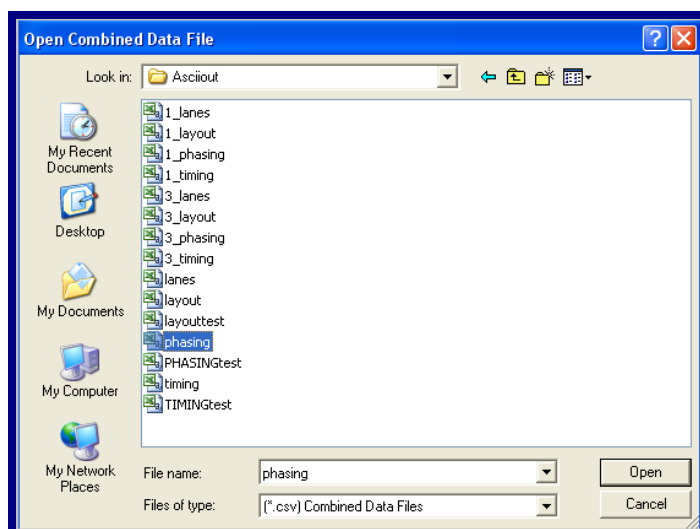


Note that the controller ID and Synchro ID must be the same to exchange data between **ATMS** and **Synchro**.

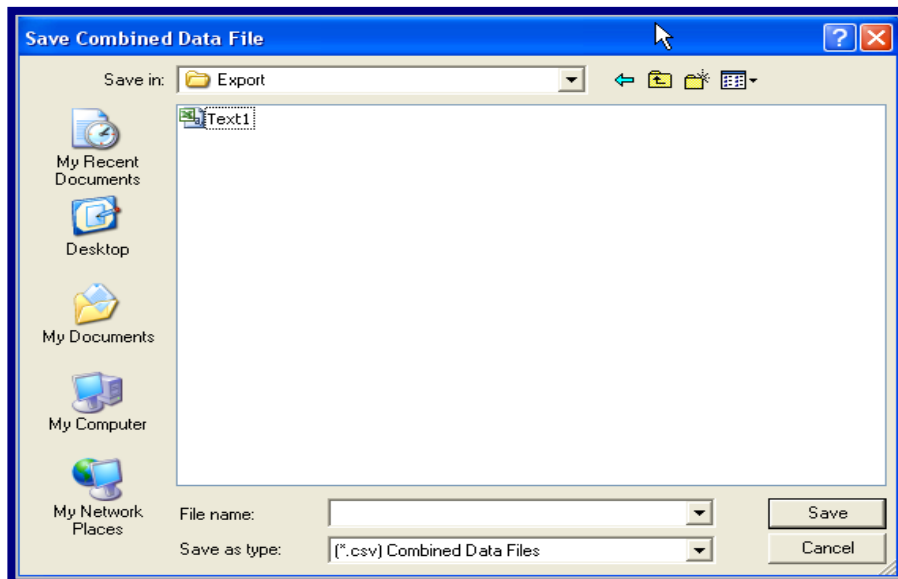
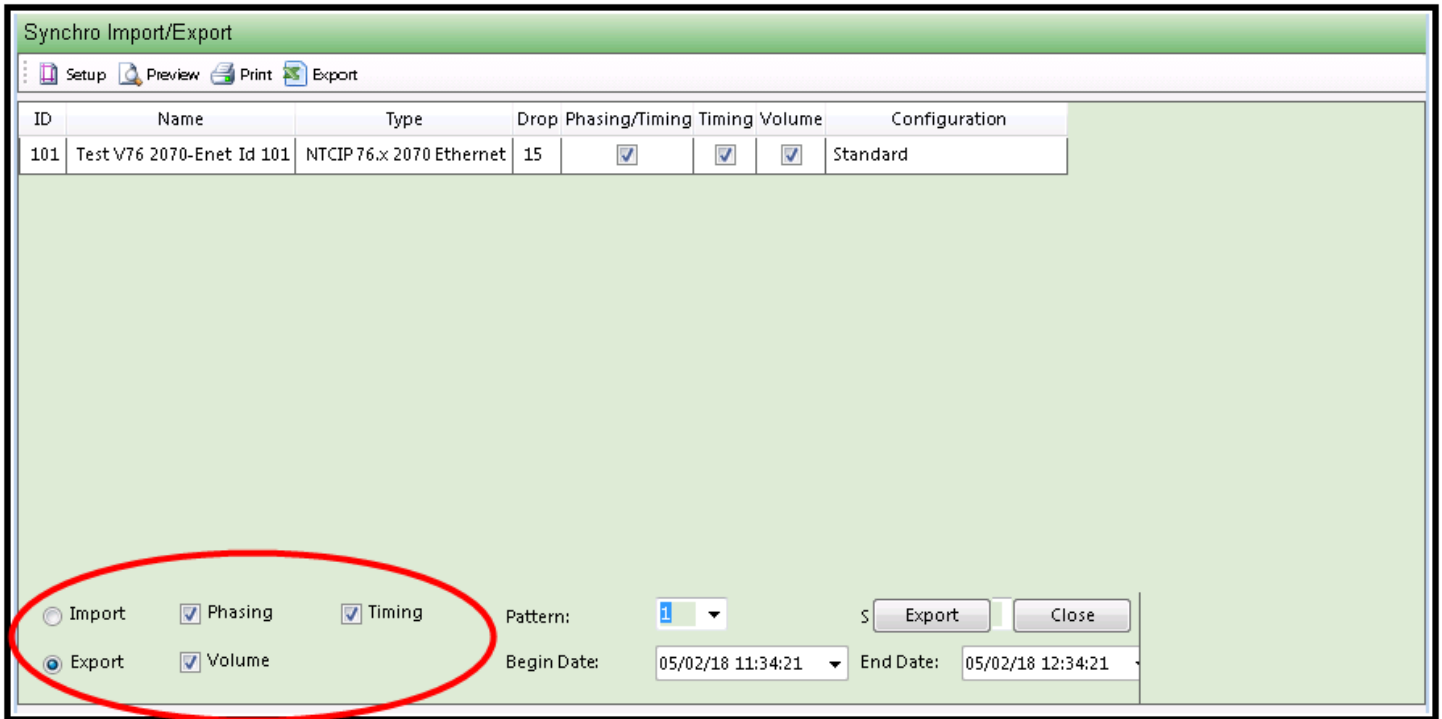
To use the *Import/Export* utility, highlight the target controller, then select *Utilities...Synchro Import/Export*. To perform a Timing or Phasing Import, check the “Timing” or “Phasing” box, and select the desired Split and Pattern.



For each intersection that you would like to import or export Synchro data you must select the type of data that you would like to import or export (Phasing, Timing and/or Volume) via the check boxes. Next select the “Import” (or “Export”) button. A window will open to navigate and select the “TIMING.csv” or “PHASING.csv” file from the Synchro program. Select the file and click “OK”.



To perform a Count Export, check the “Volume” box and click the “Export” button. A window will appear to navigate the target for the count export.

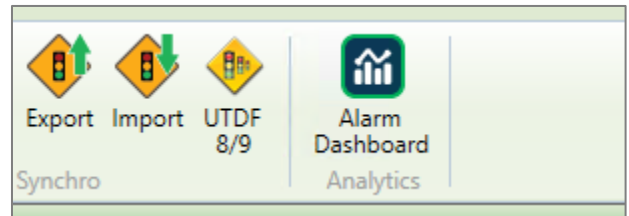


## 5.8 Analytics

Beginning with ATMS version 2.8, an Analytics section has been added to the Home module. The Analytics section will offer ATMS users a gateway to new data analysis and decision support systems applications. The purpose of those applications will be to analyze the collected data and present it in a visual, easier to understand and more meaningful way. In such a way, the user will have an enhanced overview of the system, and the process of making decisions or analysis should be significantly reduced and/or alleviated. As ATMS matures, other analytics will be added. The first effort of this type is the Alarms Dashboard.

### 5.8.1 Alarms Dashboard

The first application integrated in the new Analytics tab, the Alarms Dashboard, has been created to meet the needs of users to easily assess the reliability of the traffic signal system. The new application is a tool for fast, dynamic and interactive monitoring of alarm activations and durations created with the goal of providing clear and concise information to users.



The Alarms Dashboard can be used for multiple purposes:

- System reliability tracking
- Identifying signals that are heavily affected by alarms
- Identifying the most frequently occurring alarm types
- Providing the frequency of alarm activations and ratios
- Providing the duration of alarm activations and their ratios
- Maintenance planning and resource allocation
- Supporting requests for funding and/or budget planning

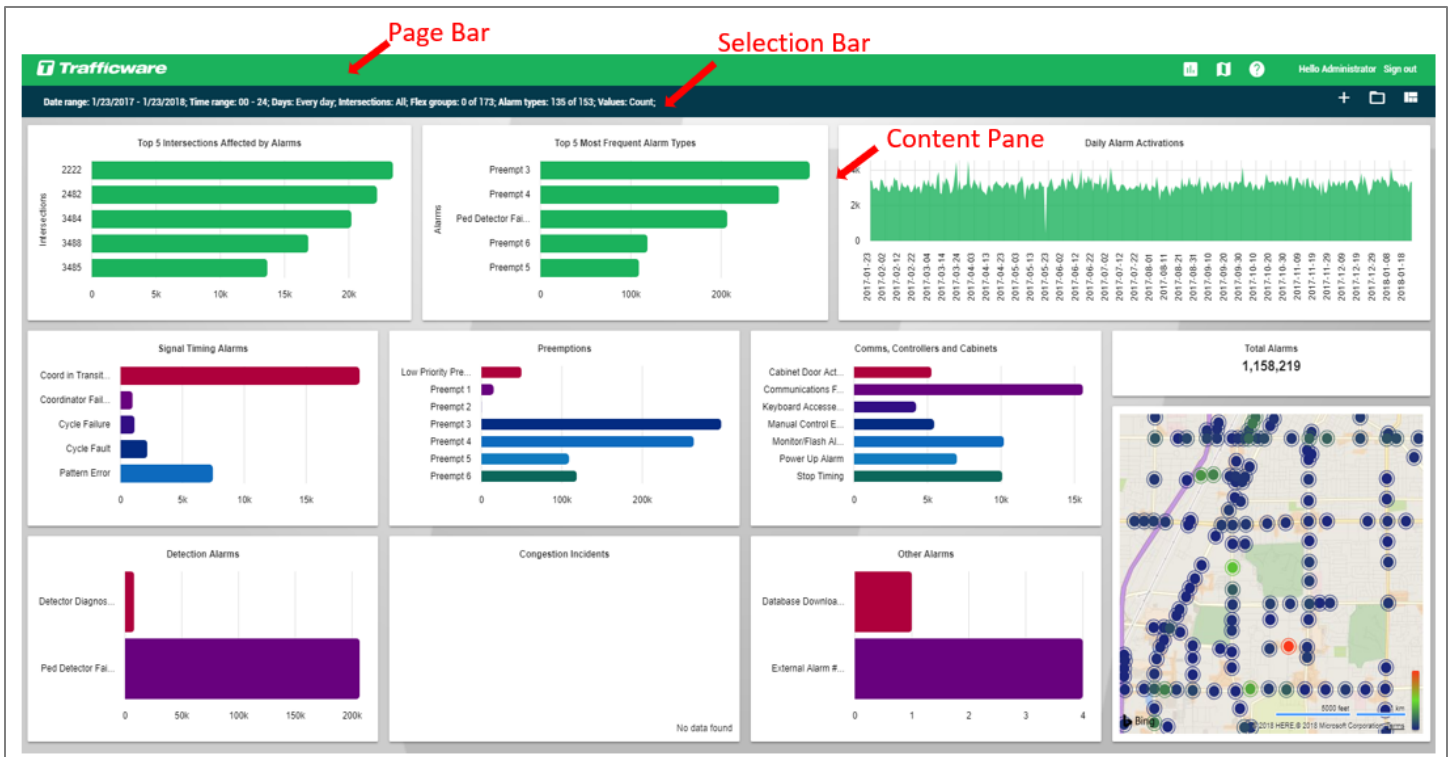
To launch the Alarms Dashboard, the user has to click on the Alarms Dashboard icon in the Analytics section, and the application will be launched in the default browser defined by the client's Windows OS. Recommended browsers are Google Chrome, Microsoft Edge and Mozilla Firefox. **Please note that certain features of the Alarms Dashboard application will not operate as intended on the Internet Explorer web browser.**

User's will be automatically authenticated from ATMS by using the username and password permissions from ATMS, and no additional authentication is required for accessing the Alarms Dashboard application.

The application itself consists of several distinct segments:

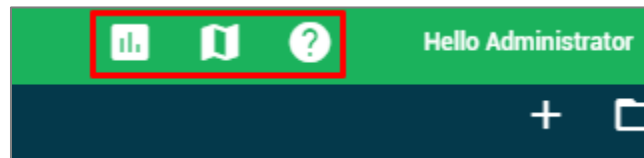
- **Page Bar**
- **Selection Bar**
- **Content Pane**

This layout remains the same regardless of the page user selects to view.



Besides the Cubic | Trafficware logo, the Page Bar contains icons for navigating to other pages of the Alarms Dashboard application. Also, the ATMS username is shown in the right corner alongside with the button to sign out. At the moment, Alarms Dashboard supports three pages:

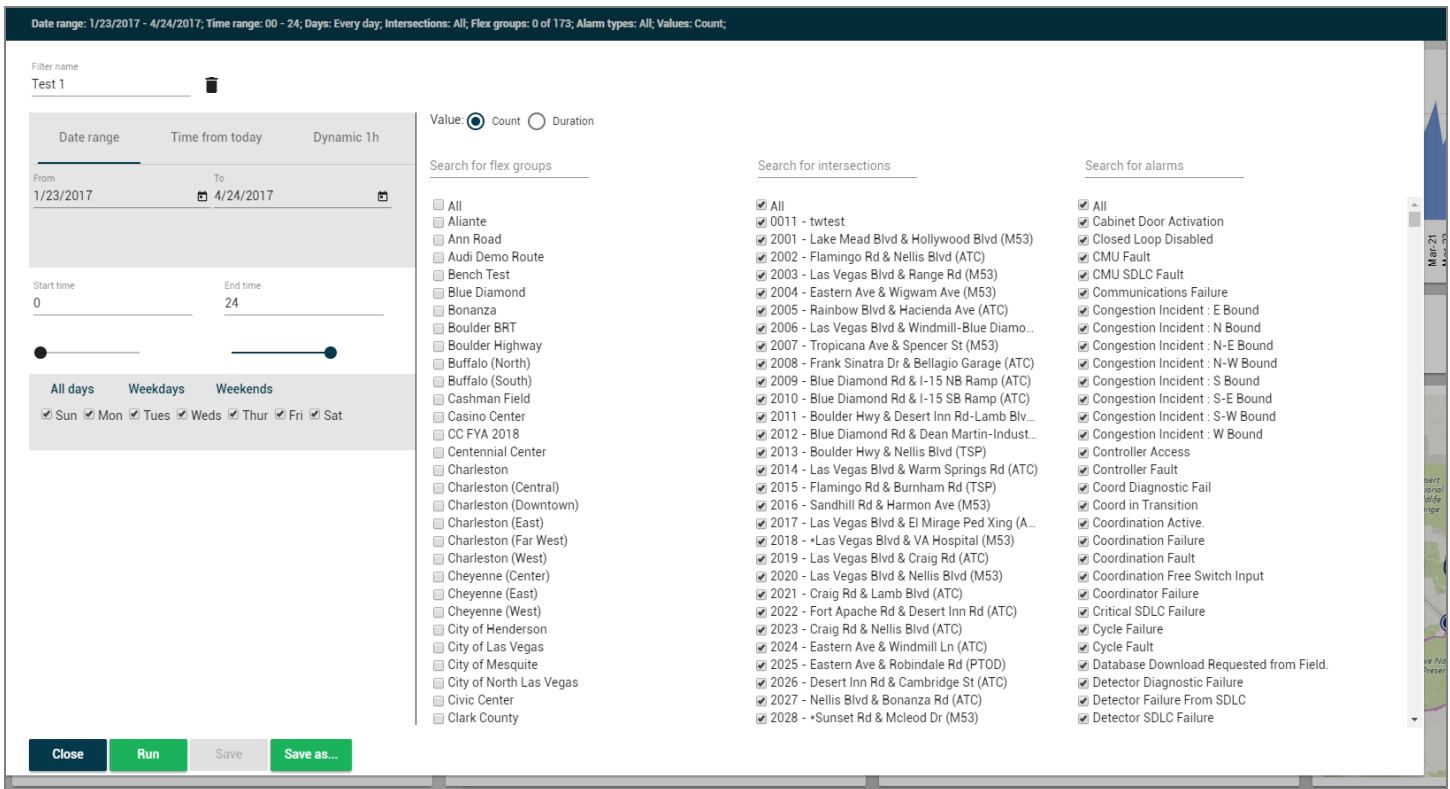
1. Charts Page – Main page with user defined charts
2. Map Page – Map view which shows map in full screen
3. Help – Launching a User Manual



The Selection Bar shows the current selection defined by user for a date and time range and the days of week that will be observed. In addition, the user can select which intersections, Flex groups and alarm types that will be analyzed. Finally, by using filter Values, user can switch between displaying the number of alarm activations or duration of alarm activations.

If user has selected multiple intersections, Flex Groups or Alarm types, there will not be enough space to display the entire content. Because of that, the Selection line will show number of intersections, Flex groups or alarm types selected in case a subset is selected. The Selection line can also show “All” if all possible options are selected. When a user hovers over values shown in the Selection line for Intersections, Flex Groups or Alarm types, a tooltip will appear. The tooltip will show a full list of intersections, Flex groups or alarm types currently defined by this selection.

To access the selection pane, user needs to click on the selection line. Once selected, a pane with selection details will appear. The Selection pane contains all the selection criteria and is the place where user can modify the selection and run a filter to get new results. In the selection pane, the user can define filter templates by saving them and assigning them appropriate names. Those templates can be used again at any time the user logs in to Alarms Dashboard. By clicking on the trashcan icon next to the Filter name, user can delete the current filter.



The left portion of the Selection Pane enables user to define a name for a specific selection and define multiple criteria for that selection. In this section, the user will be able to change the Date and Time range or select which days of the week will be observed. There are few ways how user can define a date and time range, and that is controlled by selecting an appropriate button:

- **Date Range**
- **Time from Today**
- **Dynamic 1h**

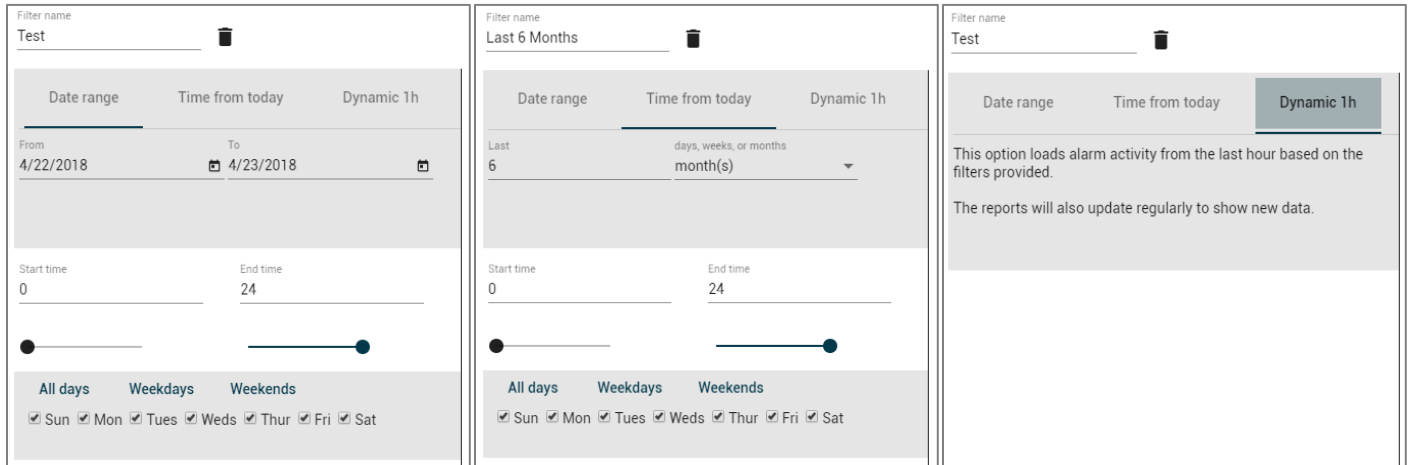
**Date Range** allows a user to set up specific dates which will be taken as start and end point of the analysis. Only the data between those two dates will be analyzed by dashboard. Users can modify dates by clicking the calendar icon next to a date to select year, month and date in a calendar dialog box or alternatively, users can click on the date itself and type in the new values for month, day or year for both start date (From) and end date (To).

If the filter selection **Time from today** button is selected, the user can select how many days, weeks or months that the application will look in the past by running that filter selection. User should type in number in the “Last” portion, and then specify if he/she is referring to days, weeks or months by selecting an appropriate option from the dropdown menu.

For either the **Date Range** or **Time from today** selections, users will be able to define start and end time for a period in a day that will be observed. The User should the define Start time and the End time by clicking on the values and typing new values or by moving the dots below the actual values. When the dot is moved, a value above gets updated automatically. In such a way, user can observe only a specific period of a day for selected the date range. For example, user can modify the filters to observe only night time, mornings, etc.

The Days of the week can also be selected regardless if **Date Range** or **Time from today** button is selected. Users can select which days of a week will be taken into account by clicking individual checkboxes next to each day. Also, a few shortcuts are provided so user can select all days of a week, only weekdays or only weekends by selecting one of the three buttons created for that purpose just above aforementioned checkboxes.

**Dynamic 1h** is a button that activates a specific mode where alarm activations will be automatically updated on the charts after they occur in the traffic signal system. This mode will only observe the last one hour data from the current moment. By using this feature, user will be able to receive updated information about any alarms that were activated in the past hour, as long as this button is selected. Alarms that happened prior to the last hour will be removed from this view. When the **Dynamic 1h** feature is selected, the user cannot modify the date range, time range or select days of week. This mode might be useful for live data monitoring, whereas the selection of **Date Range** and **Time from today** are better suited for analysis activities.



On the right side of the selection pane, a user can control the selection of intersections, flex groups or alarm types. They are conveniently organized into three columns with checkboxes. By checking the appropriate checkboxes, the user can select which Flex group, intersection or alarm type that will be analyzed. In case user wants to analyze all Flex groups, Intersections or alarm types, the best way is to click the checkbox “All” at the top of each column. In such a way, all checkboxes can be selected or deselected at once. For navigation to the lower parts of the lists, the user can use scroll bar on the right side of the Selection Panel or use the mouse scroll wheel.

Since lists of intersections, Flex groups or alarms can be quite long, searching by key characters is also supported. The user should type in the desired characters in fields above three columns and the list below will be automatically updated to show only those entries that contain these characters. Please note that inserted characters can be letters (for names) or numbers (for IDs), and they do not have to be at the beginning on a name. The algorithm will search through all words in the list and show all results that contain the specified characters, regardless of their position in that list. Inserted characters can be removed by clicking the “X” sign just right of the line which will appear when some characters get inserted.

Flex groups, intersections and alarm type columns allow the user to select **Count** or **Duration** values. If **Count** is selected, then the dashboard will show the number of alarm activations for the defined selection. One alarm activation is defined as an alarm changing its status to **ON** in controller or in ATMS. **Duration** will show how long the alarms were active. **Duration** is defined by time difference from the moment when alarm went **ON** for one intersection, until the moment when alarm status for the same alarm type (and potentially subcomponent) changed the status to **OFF** again.

\* Note that in case if **OFF** status change was not received from a controller until the next activation of the same alarm for the same controller, the duration of previous alarm will not be calculated nor shown in Alarms Dashboard. Previous alarm for whom the **OFF** was not received will be displayed if user selects **Count** as a criterium for filtering.

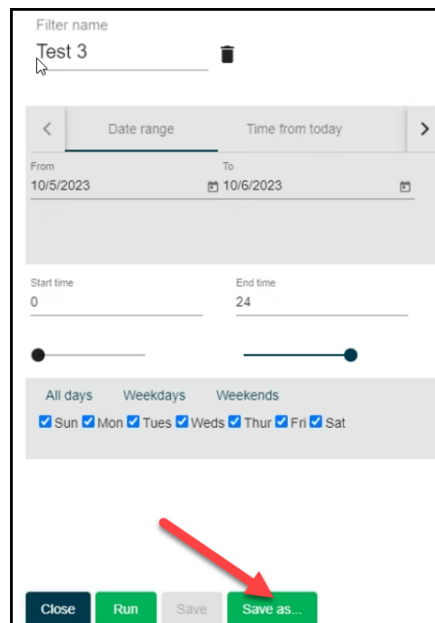
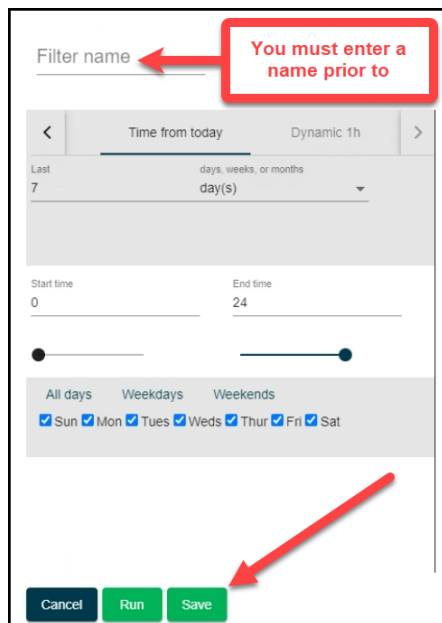
Value:  Count  Duration

Search for flex groups	Search for intersections	Search for alarms
<input type="checkbox"/> All	<input type="checkbox"/> All	<input checked="" type="checkbox"/> All
<input type="checkbox"/> Aliante	<input type="checkbox"/> 0011 - twtest	<input checked="" type="checkbox"/> Cabinet Door Activation
<input type="checkbox"/> Ann Road	<input checked="" type="checkbox"/> 2001 - Lake Mead Blvd & Hollywood Blvd (M53)	<input checked="" type="checkbox"/> Closed Loop Disabled
<input type="checkbox"/> Audi Demo Route	<input checked="" type="checkbox"/> 2002 - Flamingo Rd & Nellis Blvd (ATC)	<input checked="" type="checkbox"/> CMU Fault
<input type="checkbox"/> Bench Test	<input checked="" type="checkbox"/> 2003 - Las Vegas Blvd & Range Rd (M53)	<input checked="" type="checkbox"/> CMU SDLC Fault
<input type="checkbox"/> Blue Diamond	<input checked="" type="checkbox"/> 2004 - Eastern Ave & Wigwam Ave (M53)	<input checked="" type="checkbox"/> Communications Failure

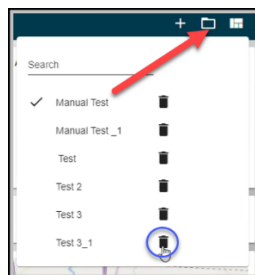
In the bottom part of the Selection Panel, there are multiple buttons that control a selection filter.

- **Close** – This will close the Selection panel
- **Run** – This will use the defined selection and update all information on charts and maps
- **Save** – After the existing Filter template has been modified, clicking Save will change the Filter to use latest changes
- **Save as** – This is used for creating a new Filter template (similar to functions of Microsoft Office)

**Note: You must “Save” for “Save as...” to become an option.**



- **Delete Filter** – To delete a filter go to the “Load Filter” icon and click the trash bin beside the filter you wish to remove.

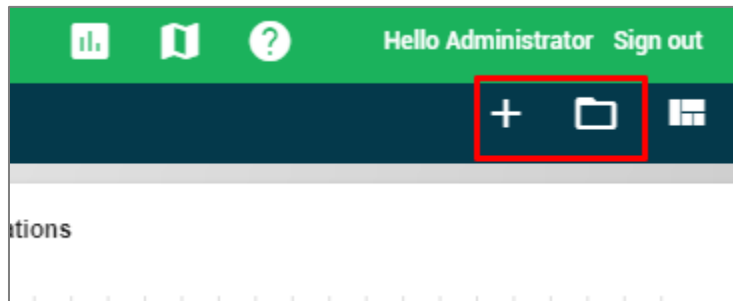




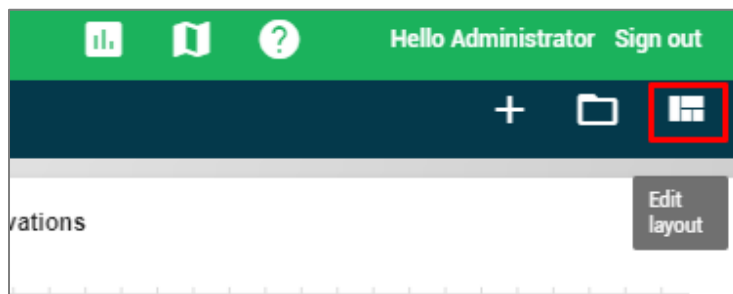
**Please note that selection criteria defined in the Selection Filter affects all charts and the maps in the Alarms Dashboard.**

Creating new Filter templates can be initiated through the ‘+’ icon in the Selection Bar that is used to initiate creating of a new filter from the beginning (without predefined values). Clicking this icon will launch the Selection Panel and after defining the criteria, the user should give a name to a new Filter template and click Save.

To load an already created filter template, user has to click “**Load Filter**” icon on the right side of the Selection Bar. A list of previously saved filter templates will appear. The user can select any saved filter template by clicking on its name. After doing so, that filter will be immediately applied. In case there are many created filter templates, user will be able to search for a template by inserting characters contained in the filter template. To delete a filter template, user has to click on “**Load Filter**” icon and click on a trashcan icon next to a filter template name. After clicking, user will be asked if he/she is sure that this template should be deleted.



The main page shows charts that have alarm related data per the user defined selection. Users can control, number, position and size of each charts (otherwise known as widgets) by activating the Edit layout mode. The User should click the “**Edit layout**” icon on the far right of the Selection Bar. That will freeze the data in charts and allow the user to make modifications and customize the layout of charts on the main page.



By default, all 12 reports will be visible to a user. However, users can customize the layout by doing one of the following actions that are allowed:

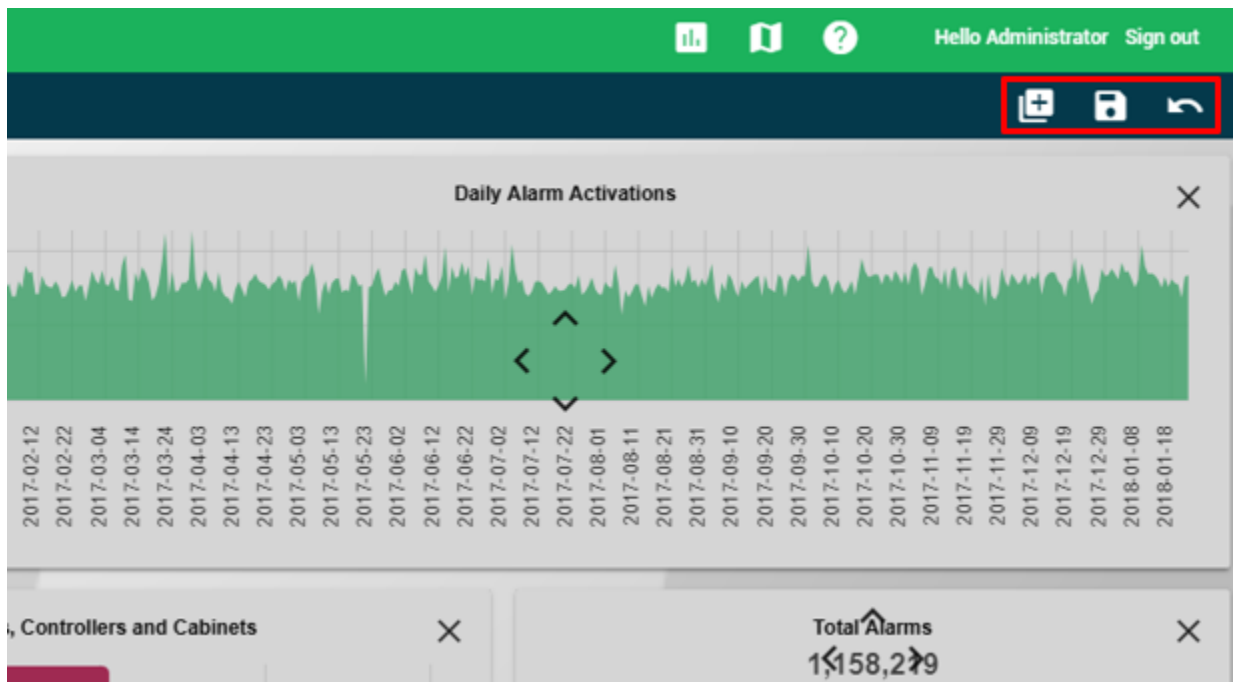
- **Turning charts (widgets) on or off – show or remove**
- **Resizing**
- **Changing the position – moving widgets**

The user can turn off a chart (widget) after he/she enters the Edit layout mode by clicking the “x” mark in the top right corner of any widget. This action will immediately remove the widget and leave the space occupied by it empty. That space can be used for expanding or moving other widgets to newly available space.

To turn the widget back on, the user has to click the “**Add widget**” icon that becomes active on the right side of the Status bar after entering Edit layout mode. After clicking the “**Add widget**” icon, a user will get a list of all widgets that were deactivated and can choose the one that will be brought back to the Content Pane. A green rectangle will appear and follow the mouse cursor after turning the widget on to mark the minimum area size where that widget can be placed. While moving the cursor, the user will be able to resize or move the already active widgets.

Resizing of widgets can be done by dragging the edges of widget horizontally, vertically and diagonally. Moving the widgets can be performed by clicking and dragging the widget while the left-click mouse button is still pressed.

After the creating of a new layout is completed, the user should click on “**Save layout**” icon on the right side of the Selection Bar. This new layout will be saved and the user display will return to the Analysis mode. To return to Analysis mode without saving the layout changes, the user should click the icon on the far right of the Selection Bar named “**Discard changes**”.

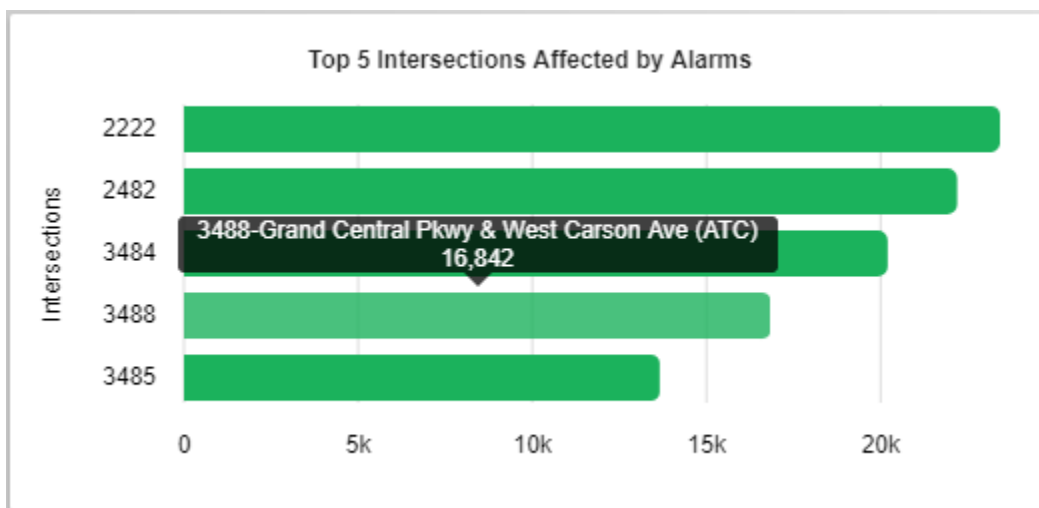


The Alarms Dashboard provides 12 types of charts (widgets) which will communicate alarm related information.

- **Top 5 Intersections Affected by Alarms**
- **Top 5 Most Frequent Alarm Types**
- **Daily Alarm Activations**
- **Total Alarms**
- **Heat Map**
- **Signal Timing Alarms**
- **Preemptions**
- **Communications, Controllers and Cabinets**
- **Detection Alarms**
- **Congestion Incidents**
- **AVL TSP Alarms**
- **Other Alarms**

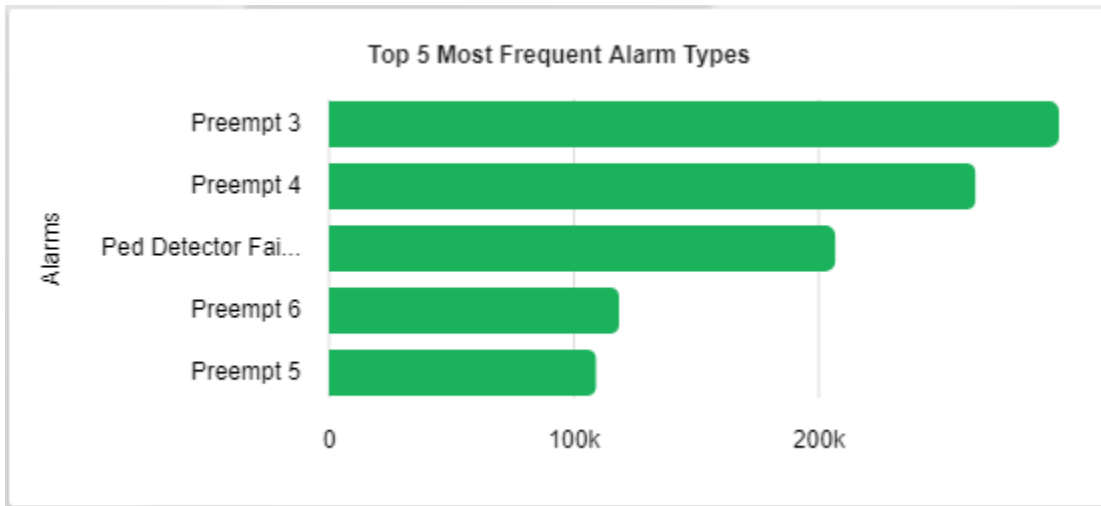
### Top 5 Intersections Affected by Alarms

This chart shows the five intersections with the largest number of alarm activations of alarms that satisfies selection defined by user. The X-axis shows the number of alarm activations of alarms while Y-axis shows intersection ID numbers. When a user hovers the cursor over any of the bars, a tooltip will appear displaying intersection ID, intersection name and the exact value for number of alarm of the alarms defined by active selection.



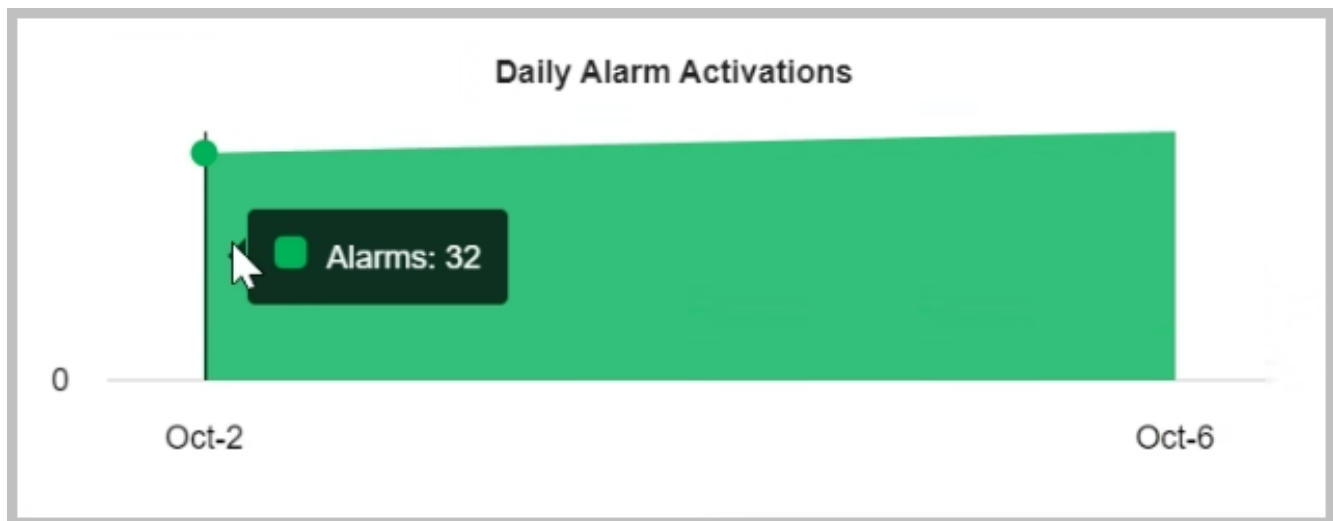
## Top 5 Most Frequent Alarm Types

This chart shows the five alarm types with the highest number of alarm activations of alarms defined by the active selection. On X-axis user can see the number of alarm activations of alarms, while Y-axis contains alarm names. When user hovers over any of the bars, a tooltip will appear showing alarm name and the actual number of alarms.



## Daily Alarm Activations

The Daily Alarm Activations chart displays the number (or duration) of alarm activations that changed during the time-frame selected defined by user. The X-axis shows each day (by date) while Y-axis shows the number of alarm activations based on what the current user Selection criteria. When user hovers over the colored area of the chart, a tooltip appears with the exact value for that date. While doing that, user can notice a blue circle at the top of the chart for that specific date. If user hovers the mouse cursor over that circle, a tooltip will contain exact date and value.



## Total Alarms

This widget shows the total number of alarm activations of all alarms per the user defined criteria in the Selection Bar. The number of alarm activations will be shown as a number with commas to divide thousands, millions etc..



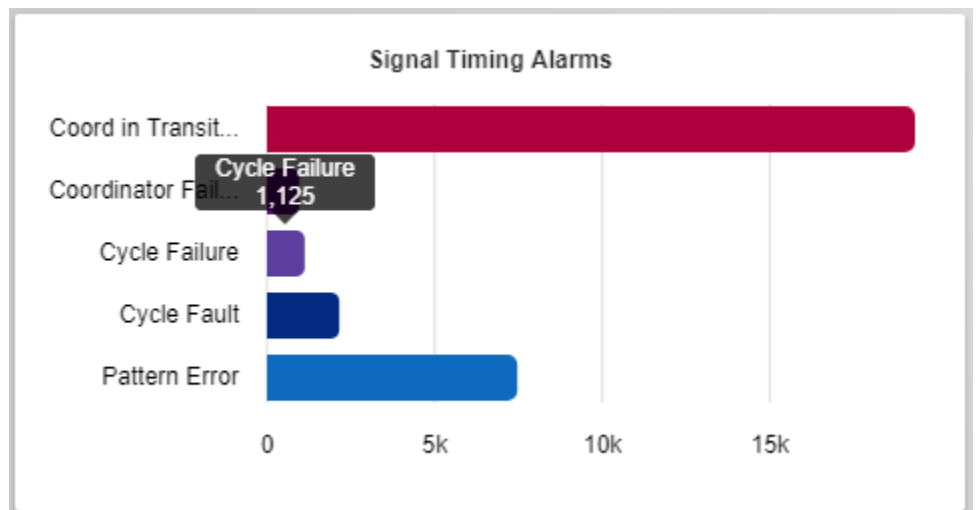
## Heat Map



The Heat Map is a widget that displays the geographical location of intersections affected by alarms. Each affected intersection will be marked by a pushpin whose color will indicate the number of alarms that occurred for that intersection. Color ranges between dark blue for lowest number of alarms and dark orange for the intersection with the highest values. If user hovers the mouse cursor over a heat map legend in the lower right corner of the mini map, a tooltip will appear to show what colors represent minimum and maximum values. Colors are assigned dynamically based on the range between minimal and maximal value for any intersection defined by current selection. Clicking on a pushpin in a Heat Map will show a tooltip with the Intersection ID, name and total number of alarms for that intersection per defined selection.

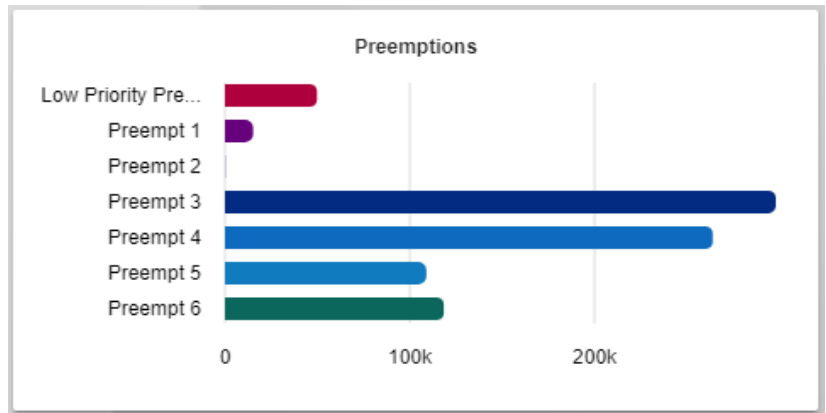
## Signal Timing Alarms

This widget shows number of alarm activations for alarms that belong to the Signal Timing Alarm category (see the tables below for details). Every alarm type will be represented by a separate bar that shows the number of alarm activations. The X-axis shows number of alarm activation while Y-axis shows the alarm type. If a user hovers over any of the bars, a tooltip will appear showing alarm name and the actual number of alarm activations.



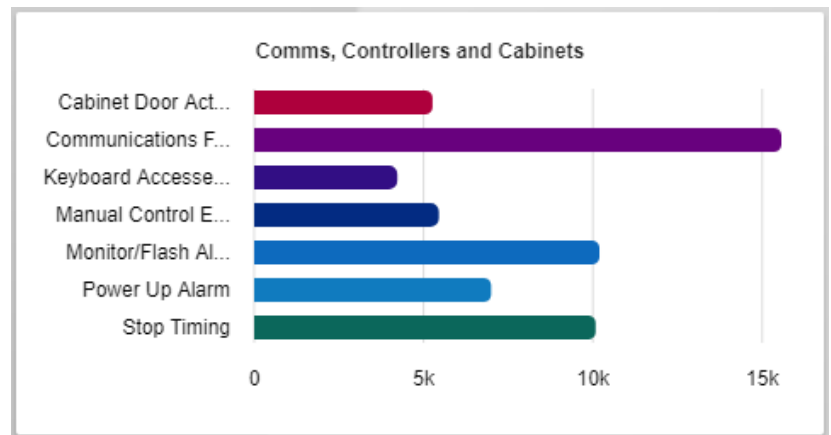
## Preemptions

This widget shows number of preemption or priority events that belong to Preemption category (see tables below for details). Every alarm type will be represented by a separate bar that shows the value of number of alarm activations. X-axis shows number of alarm activation while Y-axis shows the alarm type. If user hovers over any of the bars, a tooltip will appear showing alarm name and the actual number of alarm activations.



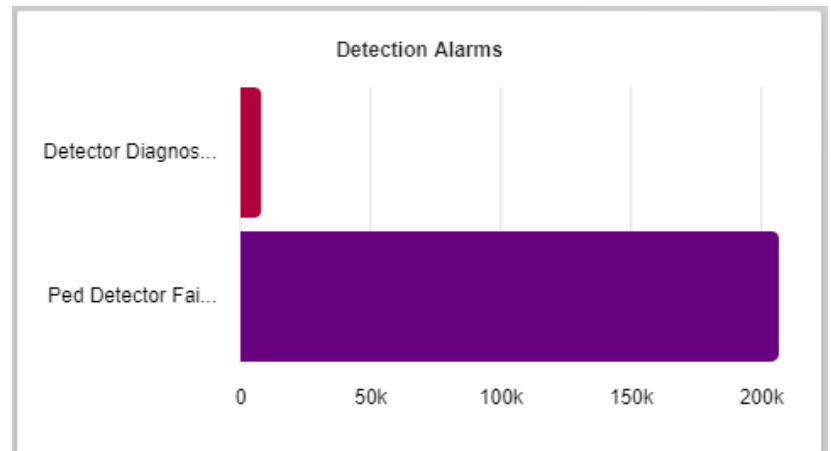
## Communications, Controller and Cabinet (3C) Alarms

The 3C widget shows the number of alarms related to communication, controller or cabinets. Every alarm type will be represented by a separate bar that shows the number of alarm activations. The X-axis shows the number of the alarm activation while the Y-axis shows the alarm type. If user hovers over any of the bars, a tooltip will appear showing alarm name and the actual number of alarm activations.



## Detection Alarms

This widget shows number of alarms that belong to the Detection category (see the tables below for further details). Every alarm type will be represented by a separate bar that will show the number of the alarm activations. The X-axis shows number of the alarm activation while Y-axis shows the alarm type. If a user hovers over any of the bars, a tooltip will appear showing alarm name and the actual number of the particular alarm activation.

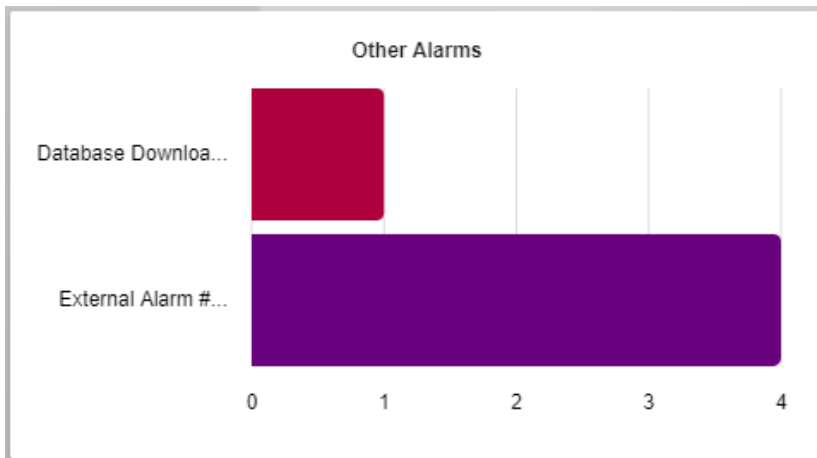


## Congestion Incidents

This widget shows number of alarms that belong to Congestion Incident category (see tables below for details). Every alarm type will be represented by a separate bar that shows the value of number of alarm activations. X-axis shows number alarm activation while Y-axis shows the alarm type. If user hovers over any of the bars, a tooltip will appear showing alarm name and the actual number of alarm activations. In order to have these alarms generated, user has to set up detectors and thresholds in Congestion Level definition screen in ATMS.



## Other Alarms



The Other Alarms widget shows the number of alarms that belong to the Other Alarms category (see the tables below for further details). Each alarm type will be represented by a separate bar that shows the value of number of the alarm activations. The X-axis shows number of the alarm activation while Y-axis shows the alarm type. If a user hovers over any of the bars, a tooltip will appear showing alarm name and the actual number of alarm activations.

In case there were no alarm activations for the defined selection, widget will be blank and in will show “No data found” in lower right corner.

All alarms are grouped into six categories and are displayed in six independent widgets

- Signal Timing
- Preemption
- 3C – Communications, Controller and Cabinet Alarms
- Detection
- Congestion Incident
- Other Alarms

The alarm assignments to these groups are defined as shown in the tables provided below.

## Signal Timing Alarms

#	Alarm Name	Alarm Description
4	Coordinator Failure	This alarm indicates that coordination is failed. There are two ways in which coordination may fail: 1) The TS2 method in which two cycle faults have occurred during coordination, but not when coordination is inactive. 2) A serviceable call has not been serviced in 3 cycles. This is the traditional method, which predates the NEMA TS2 method.
9	Closed Loop Disabled	This alarm, when active, indicates that the Closed-loop Enable parameter (MM->2->1) is set to OFF.
13	Coordination Free Switch Input	Alarm active when System/Free Switch is FREE
17	Cycle Fault	TS2 Alarm. It indicates that a serviceable call has not been serviced in approximately two cycle times and coordination was active at the time.
18	Cycle Failure	TS2 Alarm. It indicates that a serviceable call has not been serviced in approximately two cycle times and that coordination was not active at the time.
19	Coordination Fault	Indicates that a cycle fault occurred during coordination.
30	Pattern Error/Coord Diagnostic Fault	Active when coord diagnostic has failed.
38	Pattern Change	Coordination Pattern changes are logged to the event and alarm buffers using this alarm number. The data byte stores the new pattern number.
47	Coord Active	Set when coordination is active (not free)
60	Coordination Failure	Alarm is ON when Coordination has failed
61	Coord in Transition	Alarm is ON when coord is active and in transition for times over 3 seconds. Alarm is OFF when coord is active and in SYNC.
64	SynchroGreen Active	Indicates that the agency has the SynchroGreen Central Module and it is currently sending a Pattern to the local controller. - Available via SynchroGreen Module
259	Repetitive Phase Max	The agency can set up a threshold in the admin.ini file to track the number of phase maxes that occur



## Preemption and Priority Alarms

#	Alarm Name	Alarm Description
48	Preempt Active	Set when any preempt is active
49	HP Preempt 1	High-Priority Preempt 1 (Typically Rail Preempt 1)
50	HP Preempt 2	High-Priority Preempt 2 (Typically Rail Preempt 2)
51	HP Preempt 3	High-Priority Preempt 3
52	HP Preempt 4	High-Priority Preempt 4
53	HP Preempt 5	High-Priority Preempt 5m
54	HP Preempt 6	High-Priority Preempt 6
55	LP Preempt 1	Low-Priority or Transit Priority Preempt 1
56	LP Preempt 2	Low-Priority or Transit Priority Preempt 2
57	LP Preempt 3	Low-Priority or Transit Priority Preempt 3
58	LP Preempt 4	Low-Priority or Transit Priority Preempt 4
62	Light Rail/Transit	Alarm Rail Check: One of the following detector conditions exist: <ul style="list-style-type: none"> <li>•Train activates Check-In detector without activating Advanced Detector</li> <li>•Train waited too long (MaxCheckIn value expired)</li> <li>•Train activated Check-Out detector without activating the Check-In Detector</li> </ul>
77	Emergency Priority	Emergency Priority Activation (ON/OFF) - Available via Emergency.now Module
114	HP Priority 7	High-Priority Preempt 7
115	HP Priority 8	High-Priority Preempt 8
116	HP Priority 9	High-Priority Preempt 9
117	HP Priority 10	High-Priority Preempt 10
118	HP Priority 11	High-Priority Preempt 11
119	HP Priority 12	High-Priority Preempt 12

### 3C – Communications, Controller and Cabinet Alarms

#	Alarm Name	Alarm Description
1	Power Up Alarm	Is active when power is applied to the controller. Transitions upon power-up and power-down may be logged.
2	Stop Timing	Indicates that one of the stop time inputs is active.
3	Cabinet Door Activation	This is brought into the NEMA input called "lamps" or "indicator". This input is typically used for the cabinet door switch in TS1 cabinets.
12	Manual Control Enable	Alarm active when Police Control Switch and Push Button is ON
14	Local Flash Input	Asserted by monitor or cabinet switch when in flash- Typically a Cabinet Door Input
15	CMU or MMU Flash Input	Alarm is active when the controller receives an SDLC message from the MMU that it is in flash. Alarm is active when the controller receives a SDLC message from the MMU hardware that it is in flash. Please note that the CMU/MMU must be properly wired in the cabinet to receive this alarm
16	CMU or MMU Fault	Indicates a Conflict Monitor Hardware Fault has occurred when CVM is NOT asserted by the controller and Stop-Time is applied.
20	Controller Fault	Intersection is in Flash due to a critical controller fault. This fault includes Field Check, Response Frames, and Processor Diagnostics.
22	MMU SDLC Fault	SDLC communication with the MMU or has experienced a Response Frame Fault. This is a critical fault and will cause the controller to flash.
23	Terminal Facility SDLC Fault	SDLC communication with one or more of the Terminal and Facilities BIUs are faulted. This is a critical fault and will cause the controller to flash.
24	SDLC Response Frame Fault	Report from SDLC interface
25	EEPROM CRC Fault	The background EEPROM diagnostic has detected an unexplained change in the CRC of the user-programmed database.
31	Cabinet Flash Alarm	Active after a programmed delay timer expires if the monitor, or a controller fault, causes the cabinet to flash. Refer to Alarms section of user manual for further details.

32	Time Download Requested from Field	Download request from v61 controllers
59	EEPROM Compare Fault	Checksum of firmware memory has changed in TS1, TS2 Controller platforms using EEPROM memory
70	Internal Clock Jump	Occurs when the clock jumps by +/- 2 seconds
71	SIU Input SDLC Error	SDLC communication fault with at least one of the input file detector SIUs
72	SIU Output SDLC Error	SDLC communication fault with at least one of the output file SIUs
73	Controller Access	Active when a key is pressed until the Display Time expires (see Unit Parameters, MM->1->2->1)
74	User Key Login	Active when user enters security key – records the User # in the data byte
75	Disk File Access Error	The software could not access the files on “disk” devices such as Flash RAM, RAM, SD card or USB device
76	Database Change Notification	Database is edited in a controller by a Logged in User and is reported to ATMS
78	SIU CMU SDLC Fault	SDLC communication with the CMU has indicated a Fault condition.
79	SIU CMU SDLC Comm Error	SDLC communication with the CMU has failed. This is a critical fault and will cause the controller to flash.
80	CMU Channel Conflict	Conflict detected between SIU CMU channels
81	FIO Changed Status	FIO Status has changed
82	UPS On Battery	Indicates that the cabinet is running under UPS Power (Input function 250 is set to ON)
83	UPS Flash Input	Indicates the controller is in Flash due to the UPS Battery low power (Input function 251 is set to ON)
84	Comm Failure to System Device	This alarm is set when the parameter FailTime expires (Controller received no communications)
257	Communications Restored	Communications between the controller and the ATMS communications server has been Restored
258	Communications Failure	Communications between the controller and the ATMS communications server has Failed

## Detection Alarms

#	Alarm Name	Alarm Description
21	Detector SDLC Fault	Indicates SDLC communication with at least one of the Detector BIUs are faulted. This is a non-critical fault and will not cause the intersection to flash.
26	Detector Diagnostic Fault	One of the controller detector diagnostics programmed via menu MM->5->1 (No Activity, Max Presence or Erratic Count) has failed.
27	Detector Fault From SDLC	One or more local detectors have been reported to be faulted by detector hardware and/or BIU hardware. These faults include open loop, shorted loop, excessive inductance change, and watch-dog time-out.
28	Queue Detector Alarm	Associated with the queue detector feature. Data indicates which queue detector is generating the alarm.
29	Ped Detector Fault	A ped detector is faulted due to user program limits being exceeded. These include No Activity, Max Presence and Erratic Count on screen MM->5->4.
35	Ped Phase Extension	Activated when the Pedestrian phase is being extended due to user programming parameters.
36	Red Extension	Activated when the Red Clearance interval is being extended past the normal time. Deactivated once the alarm once Extended Red Clearance interval terminates
65	LRT-Detector Stuck	Advance/Check-in/Check-out Detector Stuck - Available via LRT/TSP Module
66	LRT-Check In/Out Sequence Error	Advance/Check-in/Check-out detector inputs are out of sequence - Available via LRT/TSP Module
67	LRT-Check In Arrival Time Failure	Failed to arrive at the Check-in Detector in the proper amount of time - Available via LRT/TSP Module
68	LRT-Check Out Arrival Time Failure	Failure to arrive at the Check-out Detector - Available via LRT/TSP Module

## Congestion Incident Alarms

#	Alarm Name	Alarm Description
260	Congestion Incident – N Bound	The High congestion threshold programmed by the agency has been reached for Northbound traffic
261	Congestion Incident – S Bound	The High congestion threshold programmed by the agency has been reached for Southbound traffic
262	Congestion Incident – E Bound	The High congestion threshold programmed by the agency has been reached for Eastbound traffic
263	Congestion Incident – W Bound	The High congestion threshold programmed by the agency has been reached for Westbound traffic
264	Congestion Incident – N-E Bound	The High congestion threshold programmed by the agency has been reached for Northeast-bound traffic
265	Congestion Incident – N-W Bound	The High congestion threshold programmed by the agency has been reached for Northwest-bound traffic
266	Congestion Incident – S-E Bound	The High congestion threshold programmed by the agency has been reached for Southeast-bound traffic
267	Congestion Incident – S-W Bound	The High congestion threshold programmed by the agency has been reached for Southwest-bound traffic

## Rail Adaptive Alarms

#	Alarm Name	Alarm Description
269	Train Inbound NB	Rail Adaptive Train heading Inbound from Northbound direction
270	Train Inbound SB	Rail Adaptive Train heading Inbound from Southbound direction
271	Train Inbound EB	Rail Adaptive Train heading Inbound from Eastbound direction
272	Train Inbound WB	Rail Adaptive Train heading Inbound from Westbound direction
273	Train Inbound NE	Rail Adaptive Train heading Inbound from Northeast bound direction
274	Train Inbound NW	Rail Adaptive Train heading Inbound from Northwest bound direction
275	Train Inbound SE	Rail Adaptive Train heading Inbound from Southeast bound direction
276	Train Inbound SW	Rail Adaptive Train heading Inbound from Southwest bound direction
277	Train Threshold Exceeded	Rail Adaptive Train Threshold Exceeded

## Other Alarms

#	Alarm Name	Alarm Description
5	External Alarm # 1	User selected Alarm wired to particular cabinet input
6	External Alarm # 2	User selected Alarm wired to particular cabinet input
7	External Alarm # 3	User selected Alarm wired to particular cabinet input
8	External Alarm # 4	User selected Alarm wired to particular cabinet input
10	External Alarm # 5	User selected Alarm wired to particular cabinet input
11	External Alarm # 6	User selected Alarm wired to particular cabinet input
33	Lamp Failure - Ch A	Street Lamp Failure (Channel A)- Legacy Software Alarm
34	Lamp Failure - Ch B	Street Lamp Failure (Channel B)- Legacy Software Alarm
37	Download Request	Requests Download from central system (see MM->6->4)
41	Temp Alert #1 - High Temp	Temperature Alert 1 – High Temperature))- Legacy Software Alarm
42	Temp Alert #1 - Low Temp	Temperature Alert 1 – Low Temperature)- Legacy Software Alarm
43	Temp Alert #1 - Status Alarm	Temperature Alert 1 – Status Alarm)- Legacy Software Alarm
44	Temp Alert #2 - High Temp	Temperature Alert 2 – High Temperature)- Legacy Software Alarm
45	Temp Alert #2 - Low Temp	Temperature Alert 2 – Low Temperature)- Legacy Software Alarm
46	Temp Alert #2 - Status Alarm	Temperature Alert 2 – Status Alarm)- Legacy Software Alarm
63	TSP Active Trigger	Used with ATMS to initiate download of TSP Data - Available viaLRT/TSP Module
82	UPS On Battery	Indicates that the cabinet is running under UPS Power
83	UPS Flash Input	Indicates the controller is in Flash due to the UPS Battery low power

87	External Alarm #7	User selected Alarm wired to particular cabinet input
88	External Alarm #8	User selected Alarm wired to particular cabinet input
89	External Alarm #9	User selected Alarm wired to particular cabinet input
90	External Alarm #10	User selected Alarm wired to particular cabinet input
91	External Alarm #11	User selected Alarm wired to particular cabinet input
92	External Alarm #12	User selected Alarm wired to particular cabinet input
93	External Alarm #13	User selected Alarm wired to particular cabinet input
94	External Alarm #14	User selected Alarm wired to particular cabinet input
95	External Alarm #15	User selected Alarm wired to particular cabinet input
96	External Alarm #16	User selected Alarm wired to particular cabinet input
121	Special Function Output 1	Special Function #1
122	Special Function Output 2	Special Function #2
123	Special Function Output 3	Special Function #3
124	Special Function Output 4	Special Function #4
125	Special Function Output 5	Special Function #5
126	Special Function Output 6	Special Function #6
127	Special Function Output 7	Special Function #7
128	Special Function Output 8	Special Function #8
256	TSP error	Error with TSP Controller Programming
268	Database differences occurred after latest StreetSync synchronization	A synchronization with StreetSync shows databases have been updated/changed.

## Other Alarms- UPS Alarms

#	Alarm Name	Alarm Description
UPS 1	Battery Bad	Battery Bad
UPS 2	On Battery	On Battery
UPS 3	Low Battery	Low Battery
UPS 4	Depleted Battery	Depleted Battery
UPS 5	Temp Out of Tolerance	Temp Out of Tolerance
UPS 6	Input Out of Tolerance	Input Out of Tolerance
UPS 7	Output Out of Tolerance	Output Out of Tolerance
UPS 8	Output Overload	Output Overload
UPS 9	On Bypass	On Bypass
UPS 10	Bypass Out of Tolerance	Bypass Out of Tolerance
UPS 11	Output Off as Requested	Output Off as Requested
UPS 12	UPS Device is OFF	UPS Device is OFF
UPS 13	Charger Failed	Charger Failed
UPS 14	Output is OFF	Output is OFF
UPS 15	UPS System OFF	UPS System OFF
UPS 16	Fan Failure	Fan Failure
UPS 17	Fuse Failure	Fuse Failure
UPS 18	General Fault	General Fault
UPS 19	Diagnostics Test Failure	Diagnostics Test Failure
UPS 20	Comm Loss	Agent- UPS Communications Loss
UPS 21	Awaiting Power	Awaiting Power
UPS 22	Shutdown Pending	Shutdown Pending
UPS 23	Shutdown Imminent	Shutdown Imminent
UPS 24	Test in Progress	Test in Progress



### Other Alarms- Rail Adaptive Alarms

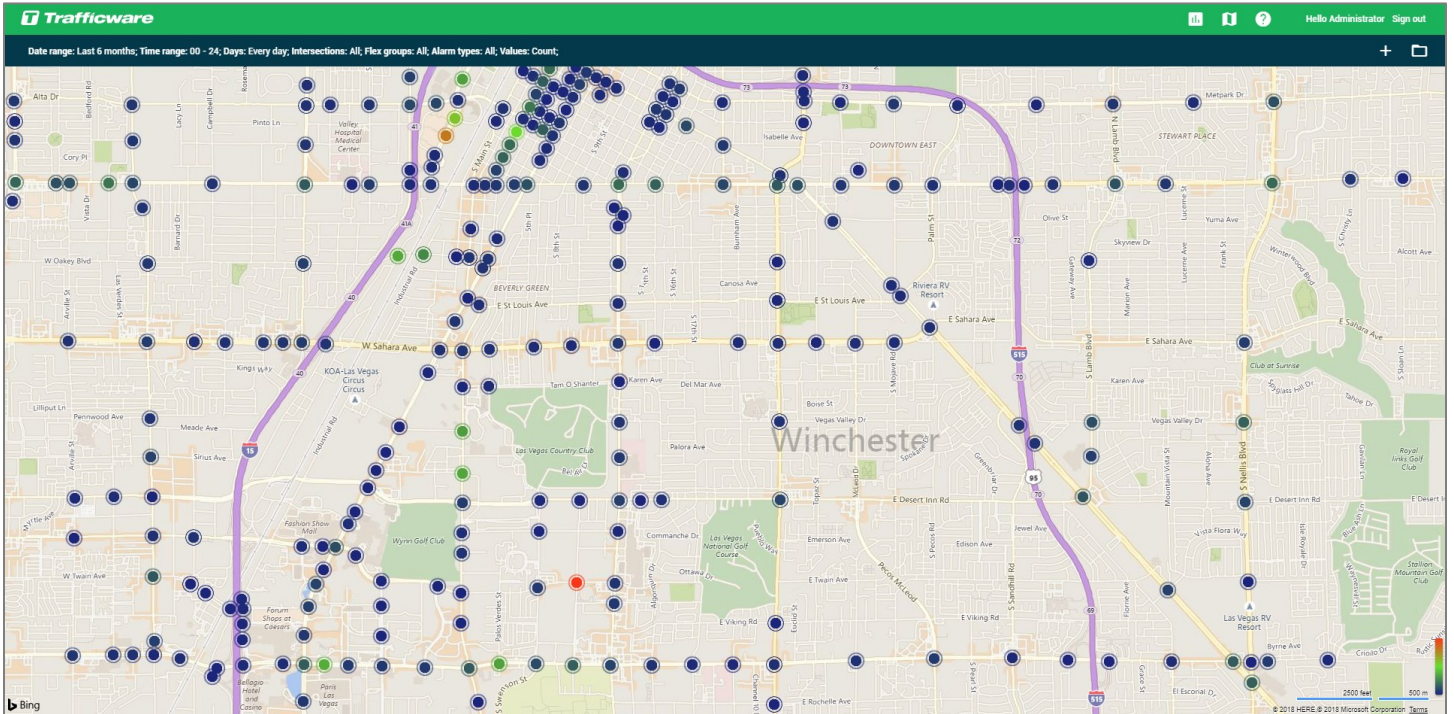
#	Alarm Name	Alarm Description
269	Train Inbound NB	Rail Adaptive Train heading Inbound from Northbound direction
270	Train Inbound SB	Rail Adaptive Train heading Inbound from Southbound direction
271	Train Inbound EB	Rail Adaptive Train heading Inbound from Eastbound direction
272	Train Inbound WB	Rail Adaptive Train heading Inbound from Westbound direction
273	Train Inbound NE	Rail Adaptive Train heading Inbound from Northeast bound direction
274	Train Inbound NW	Rail Adaptive Train heading Inbound from Northwest bound direction
275	Train Inbound SE	Rail Adaptive Train heading Inbound from Southeast bound direction
276	Train Inbound SW	Rail Adaptive Train heading Inbound from Southwest bound direction
277	Train Threshold Exceeded	Rail Adaptive Train Threshold Exceeded

### Other Alarms- NextBus Alarms

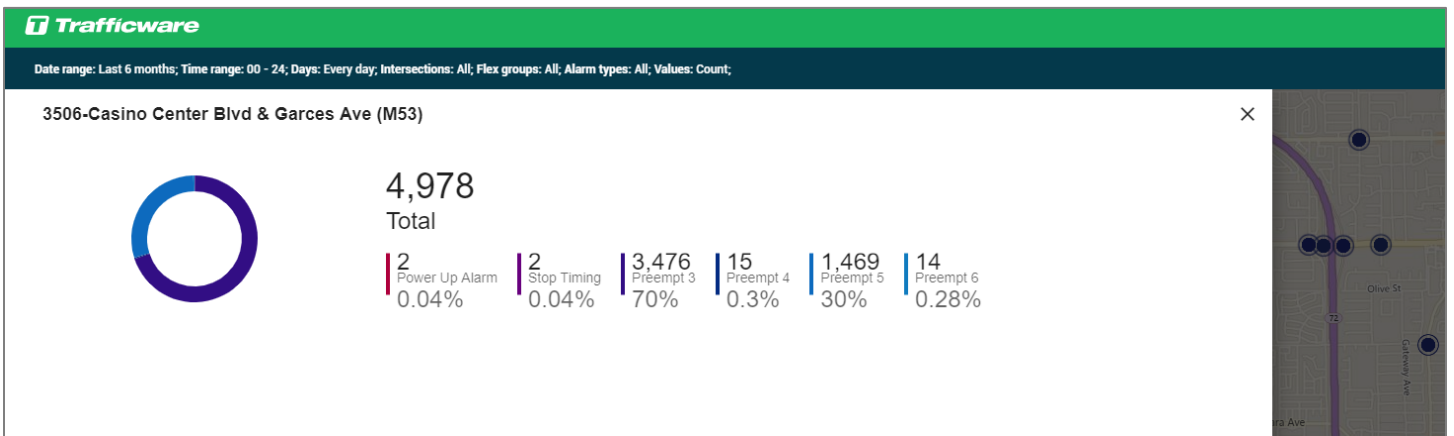
#	Alarm Name	Alarm Description
278	Failed to connect to NextBus	Failed to connect to NextBus- Real-Time
279	Partial Real-Time Data with No Vehicle Positions	NextBus specific Event
280	Unreliable Real-Time Data entries	NextBus specific Event
281	Priority Requested but not confirmed	NextBus specific Event
282	Vehicle assigned but off route	NextBus specific Event
283	Failed to connect to NextBus	NextBus specific Event
284	Partial Static Data	NextBus specific Event
285	Unreliable Static Data entries	NextBus specific Event
286	Partial Real-Time Data for non-moving vehicles	NextBus specific Event
287	Unreliable Real-Time Data – Missing Speed with updated vehicle position	NextBus specific Event
288	Partial Real-Time data with No Trip updates	NextBus specific Event
289	Unreliable Real-Time Data – Trip does not exist	NextBus specific Event
290	Unreliable Real-Time Data – Shape does not exist	NextBus specific Event

## Map Page

The Map Page provides a full screen view of the map where only intersections that have active alarms for the selected criteria in the Select Bar will appear. It can be accessed by clicking the “Map” icon on the right-hand side of the Page Bar. They are represented by pushpins with different colors in the same way as displayed on the Heat Map. This map can be navigated like any other Bing Map. The user can move the map by dragging, zooming in or zooming out by using the mouse scroll wheel.

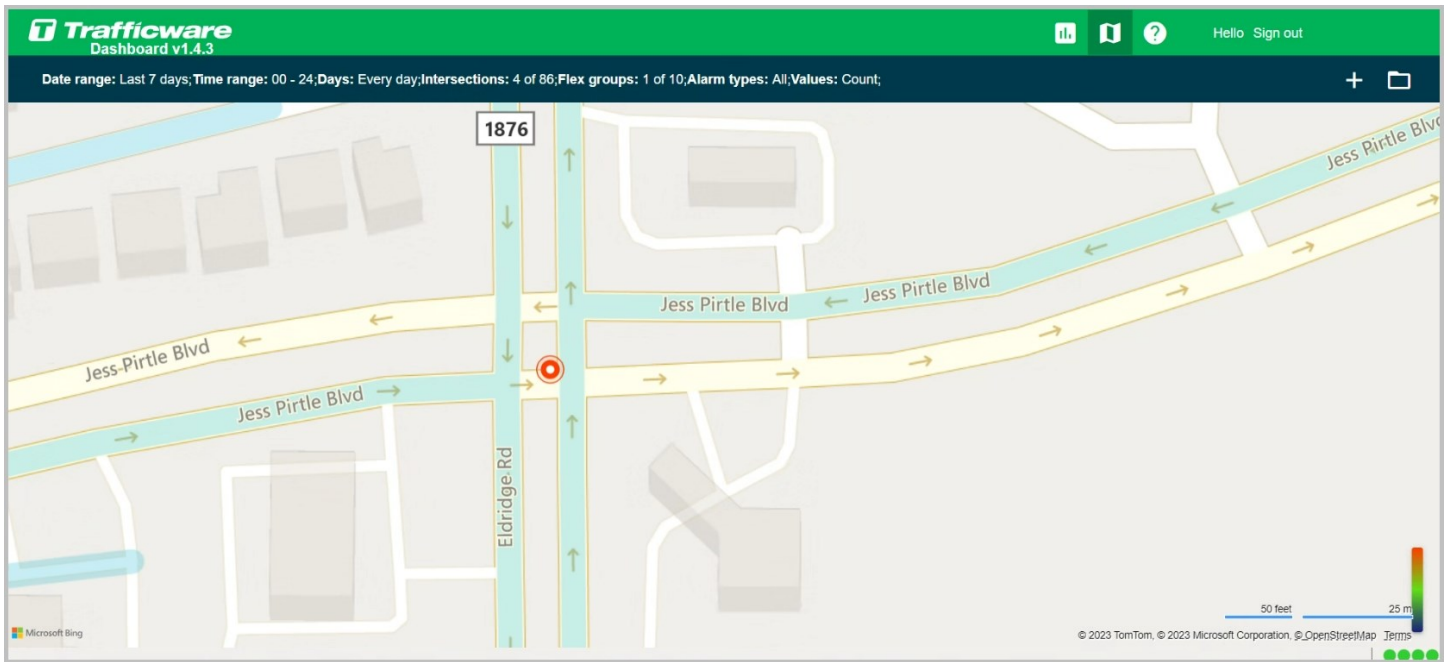


A user can click on any of the pushpins and by doing so, a new panel will appear with alarm details for that intersection. The Intersection ID number, intersection name, total number of alarms are available on this screen. This panel also provides a pie chart that shows a ratio of the different alarm types that were active for selected controllers in different colors. Additionally, the exact name and number for all alarms activated alarms will be shown. Finally, each alarm is represented by a percentage that specific alarm type has compared to total number of alarm activations for selected intersection.

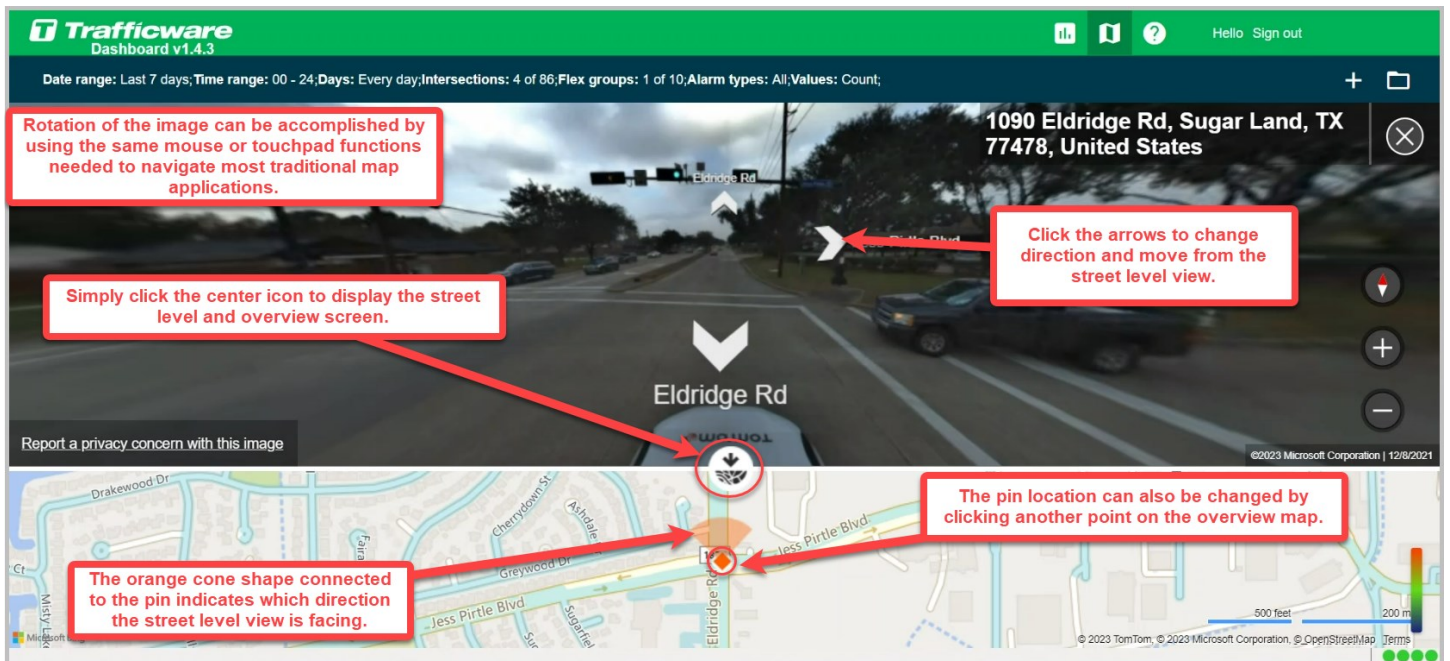


Creating new filters, loading or modifying the existing filter templates (selection criteria) can be done while on the Map page via the Selection Bar.

By zooming in on the map a blue line will appear on the road:



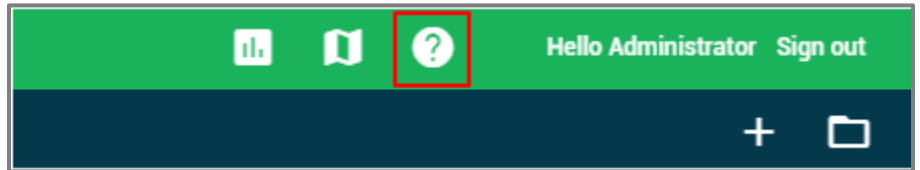
By clicking on the blue line it will bring up the street level view with the overview map available.



**Note: This navigation option is also accessible in the Heat Map**

## Help

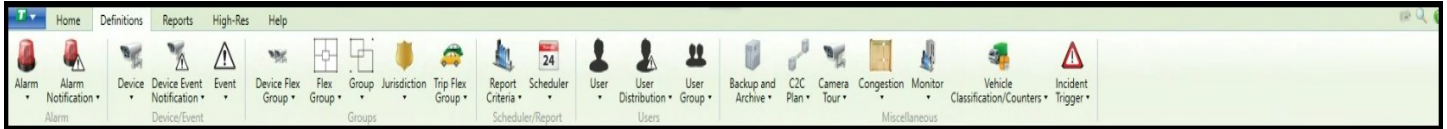
By clicking the “Help” icon, which is located between “Map” icon and the Username, the user can launch the help content with instructions how to use the Alarms Dashboard and details for all alarm types (i.e. the alarm ID, name, descriptions per alarm category are provided)



Using the Alarms Dashboard will bring multiple benefits to any agency. The advantages include:

- Brings a new perspective and new information beyond what is available in Field alarms report
- Provides a comprehensive overview of traffic signal alarm activations
- Helps in identifying reliability weaknesses
- Points out in which segments certain improvements are needed

## 6 Definitions Module



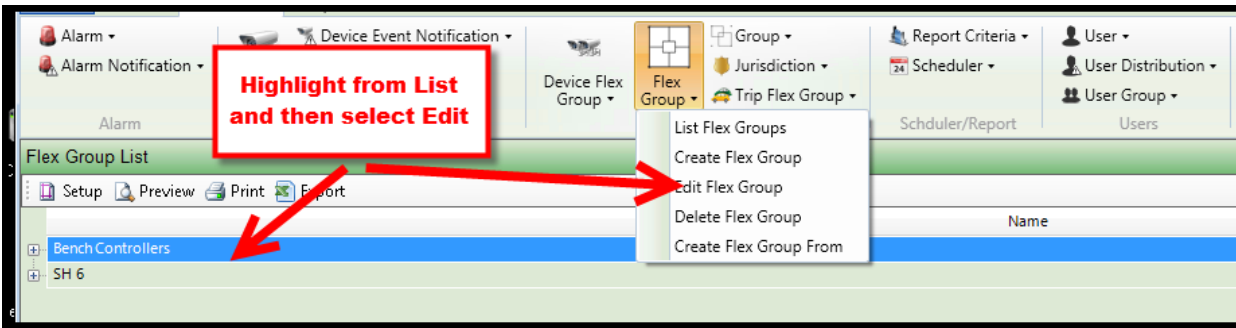
The *Definitions* Module provides the user the ability to define the primary device, user, and operating parameters of the **ATMS** system with the exception of controller definitions, which is covered in the *Home* module. This section will show you how to set up and define the primary Definitions categories. The Definitions in the **ATMS** system include:

- Alarm Naming and Notification
- Backup and Archive of Databases
- Controller and Device Grouping
- Jurisdictions
- Monitor Communications
- System Scheduler
- Users and User Groups
- Alarm-Based System Triggers
- Camera Tours
- GIS Shape File and Layer Editing
- Messages for CMS/DMS
- Report Criteria Template
- System Device Definitions
- JAMAR Counter Data Import

Each category of the *Definitions* module provides for “*List*”, “*Create*”, “*Edit*”, and “*Delete*” of the items within the category. Some categories provide a “*Create From*” option. With the exception of the “*Create*” function, the user will need to first select “*List xxxx*”, highlight the desired object for editing on the list that appears on the main window, and navigate to the desired editing function such as *Edit* or *Delete*.

When creating items that are selected in the definitions module, users must follow normal Windows filename constructs. The names that are created by the user should be of limited size (16 or less characters) have no special characters with the exception of the underscore character (“\_”) and no embedded spaces.

Deleting any defined parameter in **ATMS** will permanently delete the information from the database. Unless there is a backup copy of the SQL database performed, this information will be lost with this action.



If a function is “Grayed Out” on the icon bar, then that particular operation cannot be performed until the proper selection process is performed. For example, the user cannot *Edit* or *Delete* until an object has been selected from the list.

All functions that are displayed within **ATMS** are permitted for the user that is logged in. If a function for a user under *User Definitions* is not enabled, then the item will not appear at all within **ATMS**.

In order to perform functions within the Definitions module or the specific categories of this module, your user definition must provide your access right to edit and create each of the categories. The system administrator should carefully evaluate who is allowed editing access to this module. If a parameter is modified or deleted, there is no backup for the previous information within **ATMS**.

### Search Engine for Definitions Module

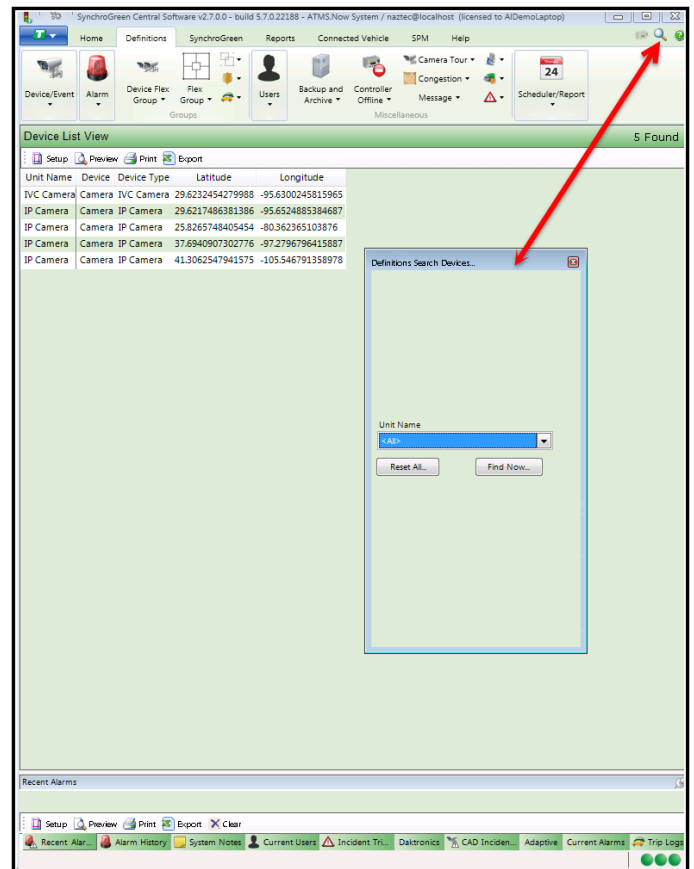
Certain sub-categories within the *Definitions* module can be navigated using the *Search Engine* tool in the *Navigation* pane on the middle left of the screen. When the *Search Engine* appears, it is available for navigation within that specific, selected *Navigation* category on the *Actions* pane.

Search values will cover the highlighted category in the *Action* pane. The illustration to the left shows “Device” as the selected category. When navigating to the *Search Engine*, the *Unit Name* box will provide a list of the defined “Devices” in **ATMS**.

Select the targeted object from the drop-down, then *Find Now* to create the results of the *Search* in the Overview pane. You can then perform *Actions* such as *Edit* or *Delete* on the selected object.

Each *Definitions* category will provide a unique set of *Search Engine* parameters.

To reset your search and restore the full system list, select “Reset All”, then “Find Now”. This resets the search engine parameters back to “All” and displays every controller or device.

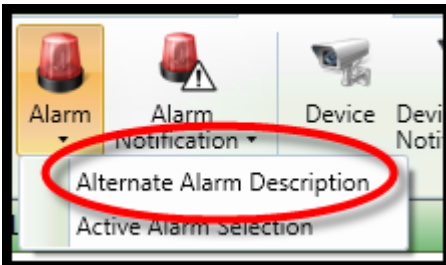


## 6.1 Alarm



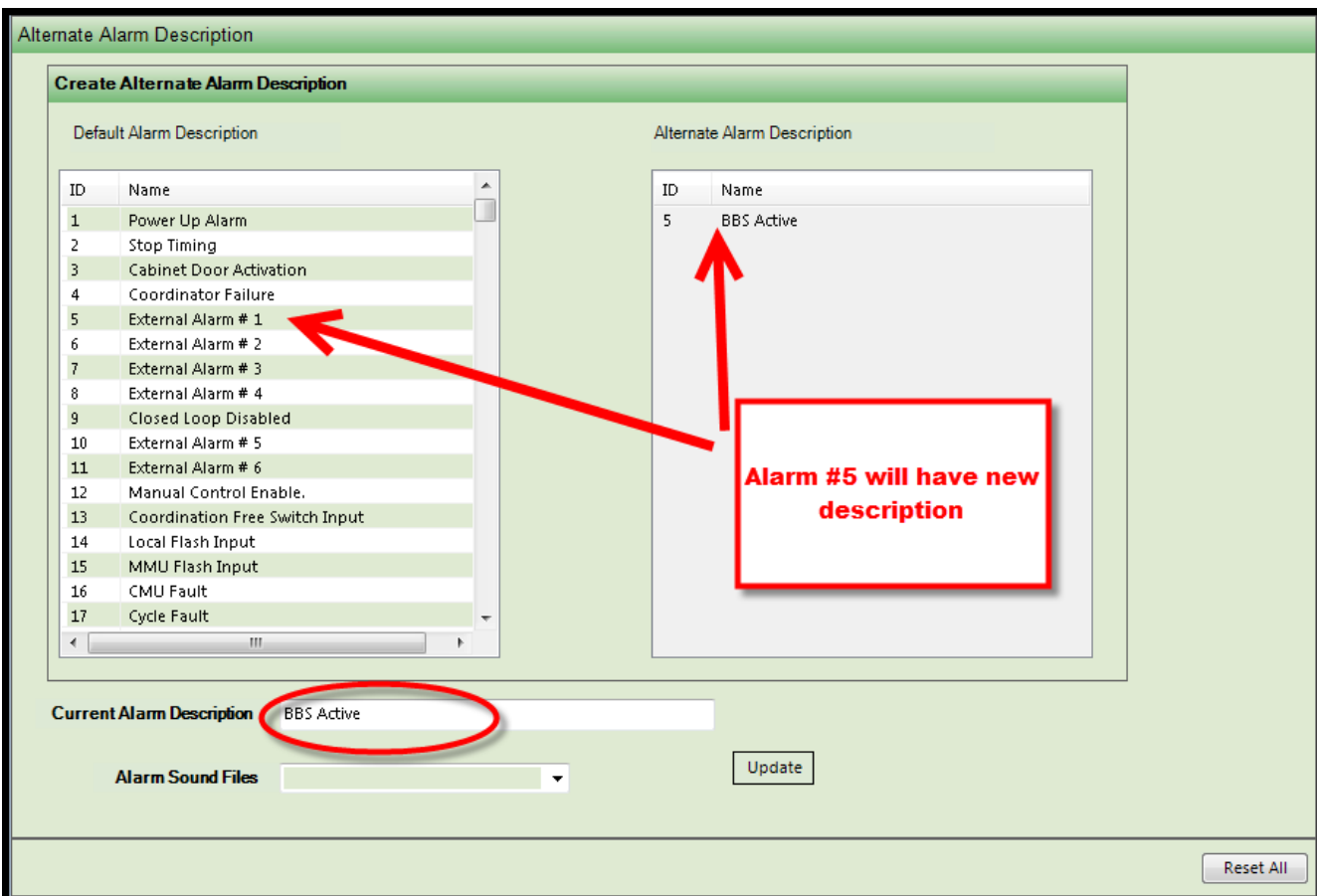
This section provides the ability to create customized Alarm Descriptions for any incoming *Alarm*. If an *Alternate Alarm Description* is used, then **ATMS** will use it each time an Alarm is received, and on an Alarm History report when it is generated. This section also gives the ability to manually assign a color to the Status for the LED and the GIS Legend.

### 6.1.1 Alternate Alarm Description



To create an *Alternate Alarm Description* for one or more alarms, navigate to *Alarm...Alternate Alarm Description*. Two category boxes will appear in the main window. The box on the left contains the *Default Alarm Descriptions* for all system alarms. The box on the right display saved *Alternate Alarm Descriptions*. To create a new description, highlight the *Default Description* from the list, then type the desired text in the *Current Alarm Description* box at the bottom of the screen.

Select the “*Update*” box to save. The new *Alternate Alarm Description* will appear on the right box.



The screenshot shows the 'Alternate Alarm Description' window with two main sections: 'Default Alarm Description' and 'Alternate Alarm Description'. The 'Default Alarm Description' section contains a list of 17 alarm types. The 'Alternate Alarm Description' section contains a list with one entry: ID 5, Name 'BBS Active'. A red arrow points from the 'External Alarm # 1' entry in the default list to the 'BBS Active' entry in the alternate list. A red box highlights the 'BBS Active' entry with the text 'Alarm #5 will have new description'. Below the lists, the 'Current Alarm Description' field is set to 'BBS Active' and is circled in red. An 'Update' button is visible to the right of the field. At the bottom right, there is a 'Reset All' button.

ID	Name
1	Power Up Alarm
2	Stop Timing
3	Cabinet Door Activation
4	Coordinator Failure
5	External Alarm # 1
6	External Alarm # 2
7	External Alarm # 3
8	External Alarm # 4
9	Closed Loop Disabled
10	External Alarm # 5
11	External Alarm # 6
12	Manual Control Enable.
13	Coordination Free Switch Input
14	Local Flash Input
15	MMU Flash Input
16	CMU Fault
17	Cycle Fault

ID	Name
5	BBS Active

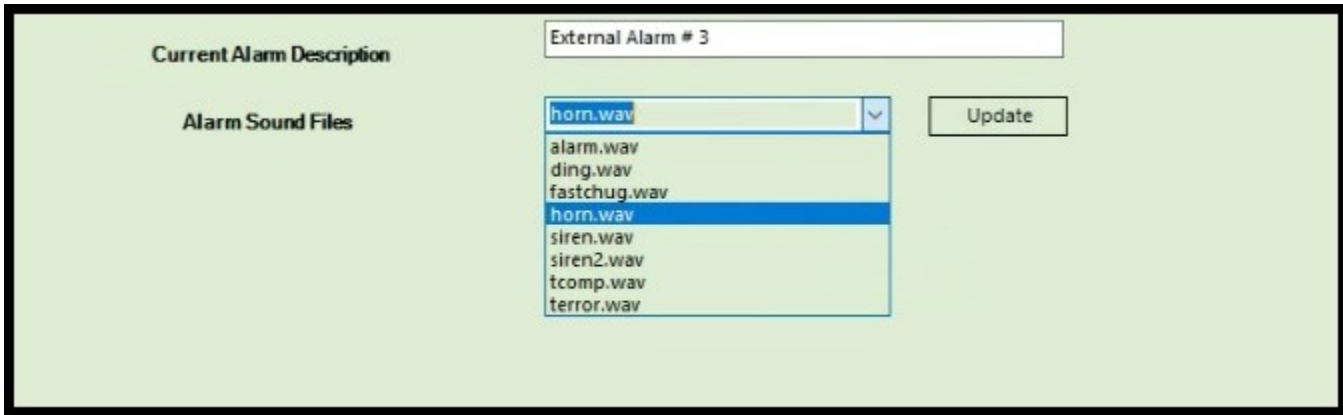
Current Alarm Description:

Alarm Sound Files:

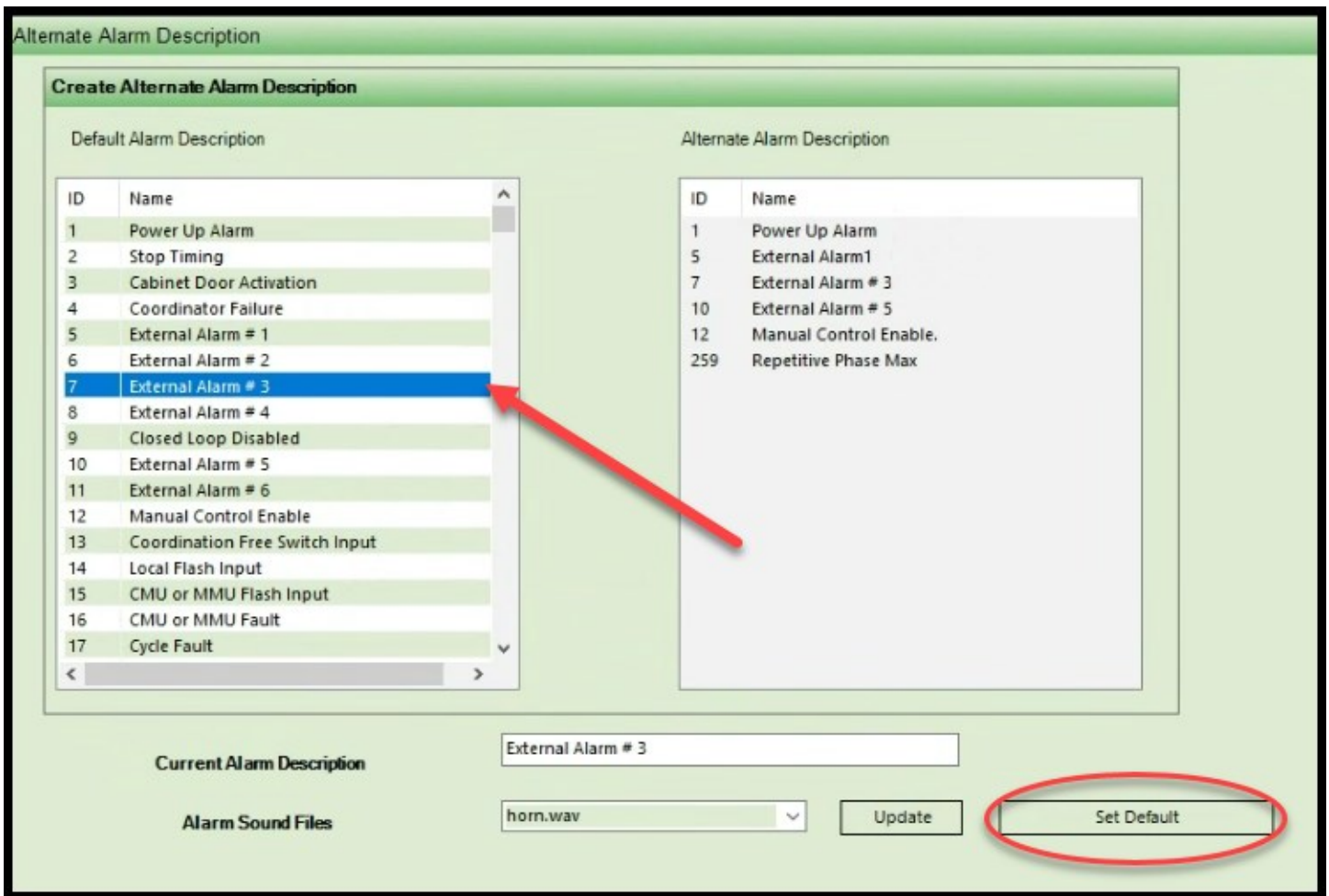
Update

Reset All

The audible alert can be customized by selecting an **Alarm Sound File** as shown below.

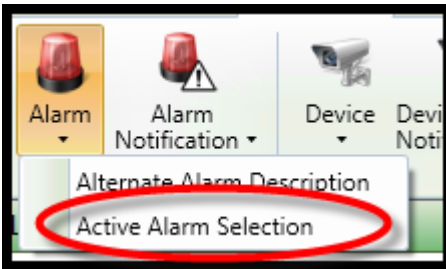


To remove an alarm from the **Alternate** list, highlight the corresponding alarm on the left then click **Set Default**. That will set the selected alarm back to its default parameters.

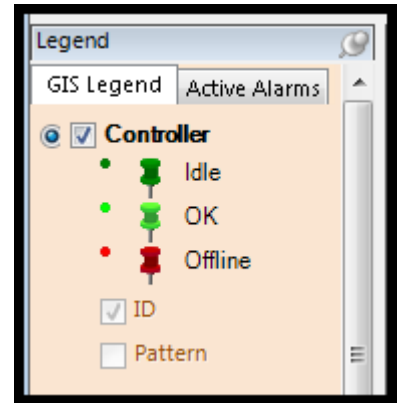




## 6.1.2 Active Alarm Selection

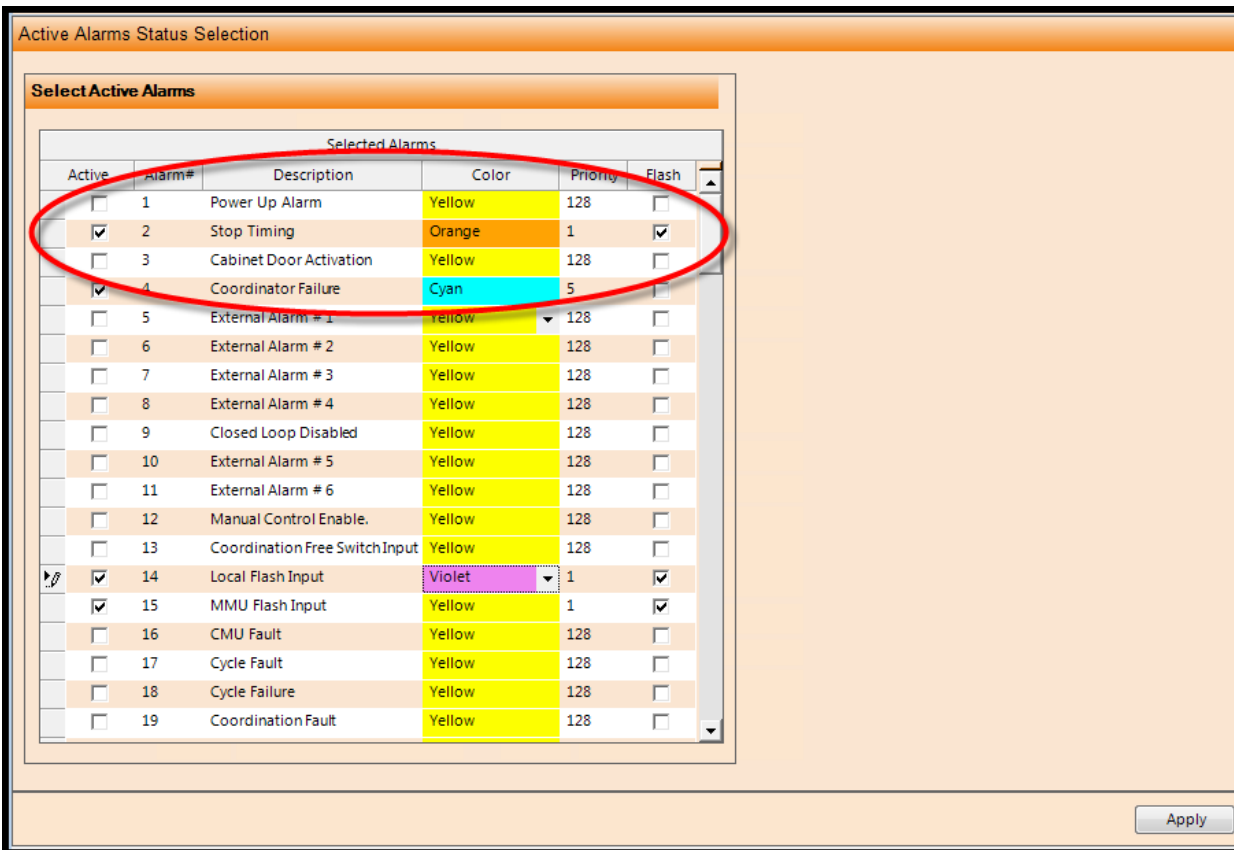


This section adds the ability to manually assign other colors to the Status “LED” indication on the List view and the Push-pin icon on the Map view screen. **Please note that the default colors on these indications are the communications status colors shown on the left.**



Users can now customize the indication colors to also show real-time alarm status, which will override the communications status colors.

If the Active Alarm selection is not modified, the system defaults to the communications color combination on setup. When modifying the Active Alarm selection, the user simply selects the alarm he wants to modify, the color for that alarm and a priority number (1 is the highest priority, 128 is the lowest priority) that is used to display that alarm over other alarms. When displaying on the map view, the user can also select a “LED” icon on the GIS map flash **RED**.



Controller List 3 Found

Setup Preview Print Export

Alarm	Status	Lock	ID	Name	Notes	Revision	Drop	Port	Flex Group	Group	Type	IP Address
			21	Bench 2070 V76 ENET - 21		76.8h	1	E-NET-5001	Bench Controllers		NTCIP 76x 2070 Ethernet	192.168.104.191
			22	Bench 2070 V76 ENET - 22		76.8k	2	E-NET-5002	Bench Controllers		NTCIP 76x 2070 Ethernet	192.168.104.192
			25	Bench V76 ATCENET- ID 25		76.8f	5	E-NET-5005	Bench Controllers		NTCIP 76x ATC Ethernet	192.168.104.195

Below is the Active Alarm selection screens:

### Select Active Alarms

Selected Alarms					
Active	Alarm#	Description	Color	Priority	Flash
<input type="checkbox"/>	1	Power Up Alarm	Yellow	128	<input type="checkbox"/>
<input checked="" type="checkbox"/>	2	Stop Timing	Magenta	1	<input checked="" type="checkbox"/>
<input type="checkbox"/>	3	Cabinet Door Activation	Yellow	128	<input type="checkbox"/>
<input checked="" type="checkbox"/>	4	Coordinator Failure	Cyan	5	<input type="checkbox"/>
<input type="checkbox"/>	5	External Alarm # 1	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	6	External Alarm # 2	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	7	External Alarm # 3	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	8	External Alarm # 4	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	9	Closed Loop Disabled	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	10	External Alarm # 5	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	11	External Alarm # 6	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	12	Manual Control Enable	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	13	Coordination Free Switch Input	Yellow	128	<input type="checkbox"/>
<input checked="" type="checkbox"/>	14	Local Flash Input	Yellow	1	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	15	CMU or MMU Flash Input	Yellow	1	<input checked="" type="checkbox"/>
<input type="checkbox"/>	16	CMU or MMU Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	17	Cycle Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	18	Cycle Failure	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	19	Coordination Fault	Yellow	128	<input type="checkbox"/>

### Select UPS Alarms

Selected Alarms					
Active	Alarm#	Description	Color	Priority	Flash
<input type="checkbox"/>	UPS 1	Battery Bad	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 2	On Battery	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 3	Low Battery	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 4	Depleted Battery	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 5	Temp out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 6	Input out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 7	Output out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 8	Output Overload	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 9	On Bypass	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 10	Bypass out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 11	Output OFF as requested	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 12	UPS Device is OFF	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 13	Charger Failed	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 14	Output is OFF	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 15	UPS System OFF	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 16	Fan Failure	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 17	Fuse Failure	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 18	General Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 19	Diagnostics Test Failed	Yellow	128	<input type="checkbox"/>

### Select Active Alarms

Selected Alarms					
Active	Alarm#	Description	Color	Priority	Flash
<input type="checkbox"/>	20	Controller Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	21	Detector SDLC Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	22	MMU SDLC Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	23	Terminal Facility SDLC Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	24	SDLC Response Frame Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	25	EEPROM CRC Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	26	Detector Diagnostic Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	27	Detector Fault From SDLC	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	28	Queue Detector Alarm	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	29	Ped Detector Fault	Yellow	128	<input type="checkbox"/>
<input checked="" type="checkbox"/>	30	Pattern Error/Coord Diagnostic	Cyan	5	<input type="checkbox"/>
<input type="checkbox"/>	31	Cabinet Flash Alarm	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	32	Time Download Requested fro	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	33	Lamp Failure - Ch A	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	34	Lamp Failure - Ch B	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	35	Ped Extension	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	36	Red Clearance Extension	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	37	Download Request	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	38	Pattern Change	Yellow	128	<input type="checkbox"/>

### Select UPS Alarms

Selected Alarms					
Active	Alarm#	Description	Color	Priority	Flash
<input type="checkbox"/>	UPS 20	Agent-UPS Communication Los	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 21	Awaiting Power	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 22	Shutdown Pending	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 23	Shutdown Imminent	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 24	Test in Progress	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 1	Overload	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 2	Short Circuit	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 3	Internal Temp. High	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 4	Output Voltage High	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 5	Output Voltage Low	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 6	Battery Voltage High	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 7	Battery Voltage Low	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 8	F07	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 9	Battery Fail	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 10	Backfeed Fail	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 11	F10	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 12	F11	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 13	F12	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	E 14	F13	Yellow	128	<input type="checkbox"/>

Select Active Alarms						
Selected Alarms						
Active	Alarm#	Description	Color	Priority	Flash	
<input type="checkbox"/>	41	Temp Alert #1 - High Temp	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	42	Temp Alert #1 - Low Temp	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	43	Temp Alert #1 - Status Alarm	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	44	Temp Alert #2 - High Temp	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	45	Temp Alert #2 - Low Temp	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	46	Temp Alert #2 - Status Alarm	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	47	Coord Active	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	48	Preempt Active	Yellow	128	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	49	HP Preempt 1	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	50	HP Preempt 2	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	51	HP Preempt 3	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	52	HP Preempt 4	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	53	HP Preempt 5	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	54	HP Preempt 6	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	55	LP Preempt 1	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	56	LP Preempt 2	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	57	LP Preempt 3	Purple	3	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	58	LP Preempt 4	Purple	3	<input type="checkbox"/>	
<input type="checkbox"/>	59	EEPROM Compare Fault	Yellow	128	<input type="checkbox"/>	

Select UPS Alarms						
Selected Alarms						
Active	Alarm#	Description	Color	Priority	Flash	
<input type="checkbox"/>	E 15	F14	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	E 16	F15	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 1	Overload	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 2	Fan Speed Out of Range	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 3	Battery Test	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 4	Battery Temp.High	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 5	Battery temp.Low	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 6	Battery Low	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 7	Temp Probe Unplugged	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 8	Freq In-Out of Range	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 9	User Input Alarm	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 10	Battery Breaker Open	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 11	Battery Weak	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 12	A11	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 13	A12	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 14	A13	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 15	A14	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	A 16	A15	Yellow	128	<input type="checkbox"/>	

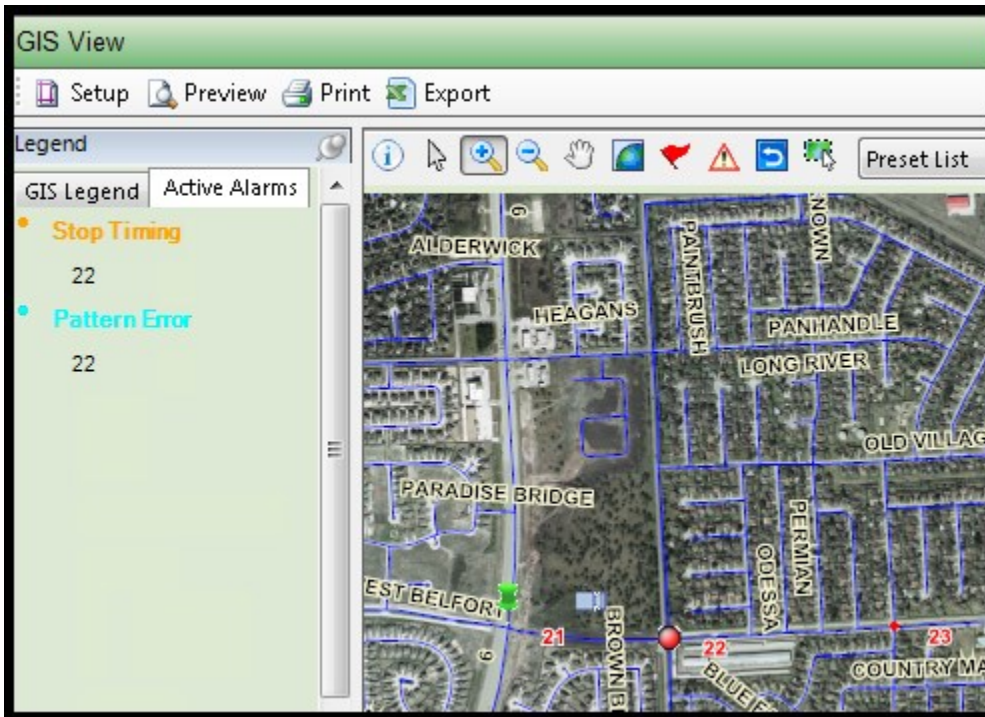
Select Active Alarms						
Selected Alarms						
Active	Alarm#	Description	Color	Priority	Flash	
<input checked="" type="checkbox"/>	60	Coordination Failure	Cyan	5	<input type="checkbox"/>	
<input type="checkbox"/>	61	Coord in Transition	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	62	Light Rail/Transit	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	63	TSP Active Trigger	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	64	SynchroGreen Active	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	65	LRT-Detector Stuck	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	66	LRT-Check In/Out Sequence Err	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	67	LRT-Check In Arrival Time Failur	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	68	LRT-Check Out Arrival Time Fail	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	70	Internal Clock Jump	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	71	SIU Input SDLC Error	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	72	SIU Output SDLC Error	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	73	Controller Access	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	74	User Key Login	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	75	Disk File Access Error	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	76	Database Change Notification	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	77	Emergency Priority	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	78	SIU CMU SDLC Fault	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	79	SIU CMU SDLC Comm Error	Yellow	128	<input type="checkbox"/>	

Select Active Alarms						
Selected Alarms						
Active	Alarm#	Description	Color	Priority	Flash	
<input type="checkbox"/>	78	SIU CMU SDLC Fault	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	79	SIU CMU SDLC Comm Error	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	80	CMU Channel Conflict	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	81	FIO Changed Status	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	82	UPS On Battery	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	83	UPS Flash Input	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	84	Comm Failure to System Devic	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	87	External Alarm #7	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	88	External Alarm #8	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	89	External Alarm #9	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	90	External Alarm #10	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	91	External Alarm #11	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	92	External Alarm #12	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	93	External Alarm #13	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	94	External Alarm #14	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	95	External Alarm #15	Yellow	128	<input type="checkbox"/>	
<input type="checkbox"/>	96	External Alarm #16	Yellow	128	<input type="checkbox"/>	

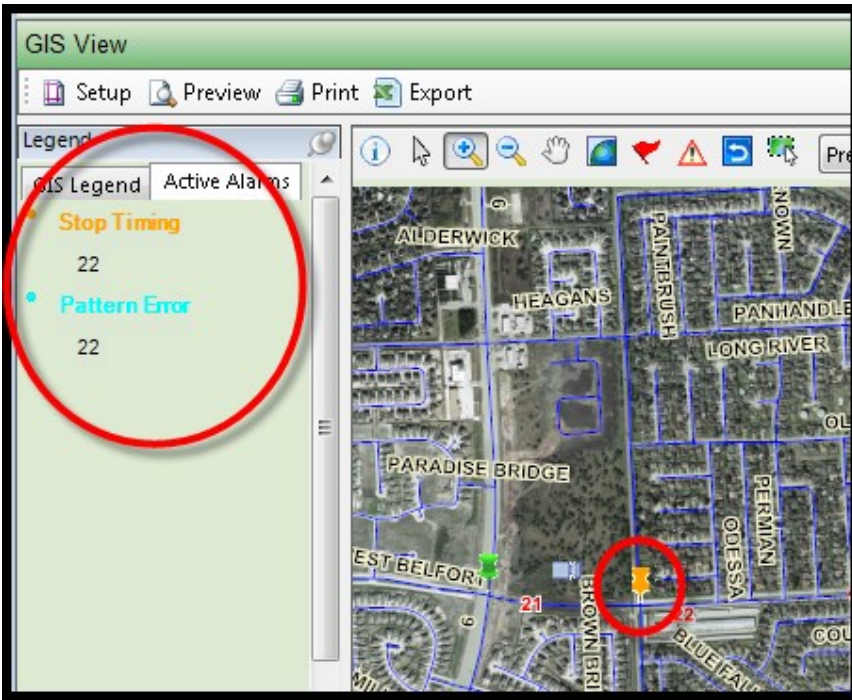
The UPS alarms have been added in ATMS 2.10.1. UPS1 – UPS24 are alarms reported via the Generic UBS MIB SNMP messages, A1-A16 and E1-16 are specific to the Alpha FXM-1100 and FXM-2000 units.

On the GIS view there is a new tab called active alarms. This tab will tell you all active alarms that are taking place as well as list the alarm and the controller that is generating the alarm.






In the example below, controller ID #22 has two active alarms (see GIS view) that have been generated. The stop timing alarm is displayed on the list view because it has priority over the keyboard accessed alarm.

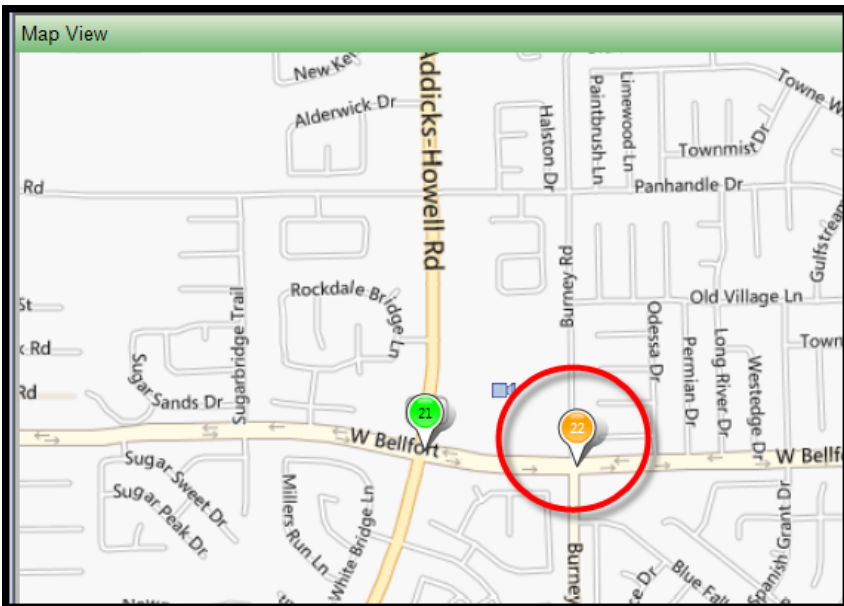
Therefore you will see Orange displayed on the List view and the Bing Map view.



Controller List 3 Found

Setup Preview Print Export

Alarm	Status	Lock	ID	Name	Notes	Revision	Drop	Port	Flex Group	Group	Type	IP Address
			21	Bench 2070 V76 ENET - 21		76.8h	1	E-NET-5001	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.191
			22	Bench 2070 V76 ENET - 22		76.8k	2	E-NET-5002	Bench Controllers		NTCIP 76.x 2070 Ethernet	192.168.104.192
			25	Bench V76 ATCENET- ID 25		76.8f	5	E-NET-5005	Bench Controllers		NTCIP 76.x ATC Ethernet	192.168.104.195

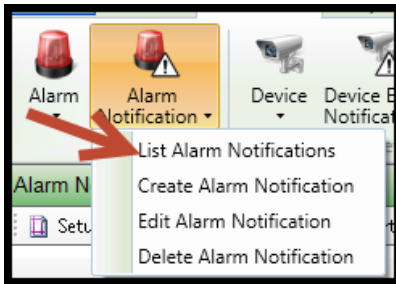


## 6.2 Alarm Notification



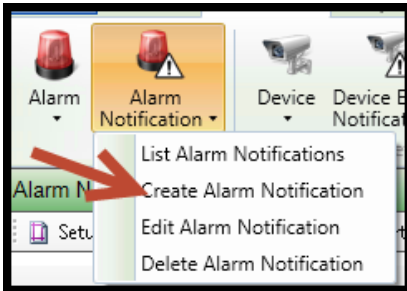
*Alarm Notifications* allow the user to create a system-generated notification schedule to send a page, e-mail or web message to a specified user when specified alarms are detected by the system. The notification can be customized by user, alarm type, and time-of-day.

### 6.2.1 List Alarm Notification



To display the existing *Alarm Notification*, select *Definitions...Alarm Notification...List Alarm Notifications* the user will display all Alarm Incidents that have been created in the main window. Note that by selecting one of these from the list, the options to *Edit* or *Delete Alarm Notification* become available as shown in the figure below

### 6.2.2 Create Alarm Notification

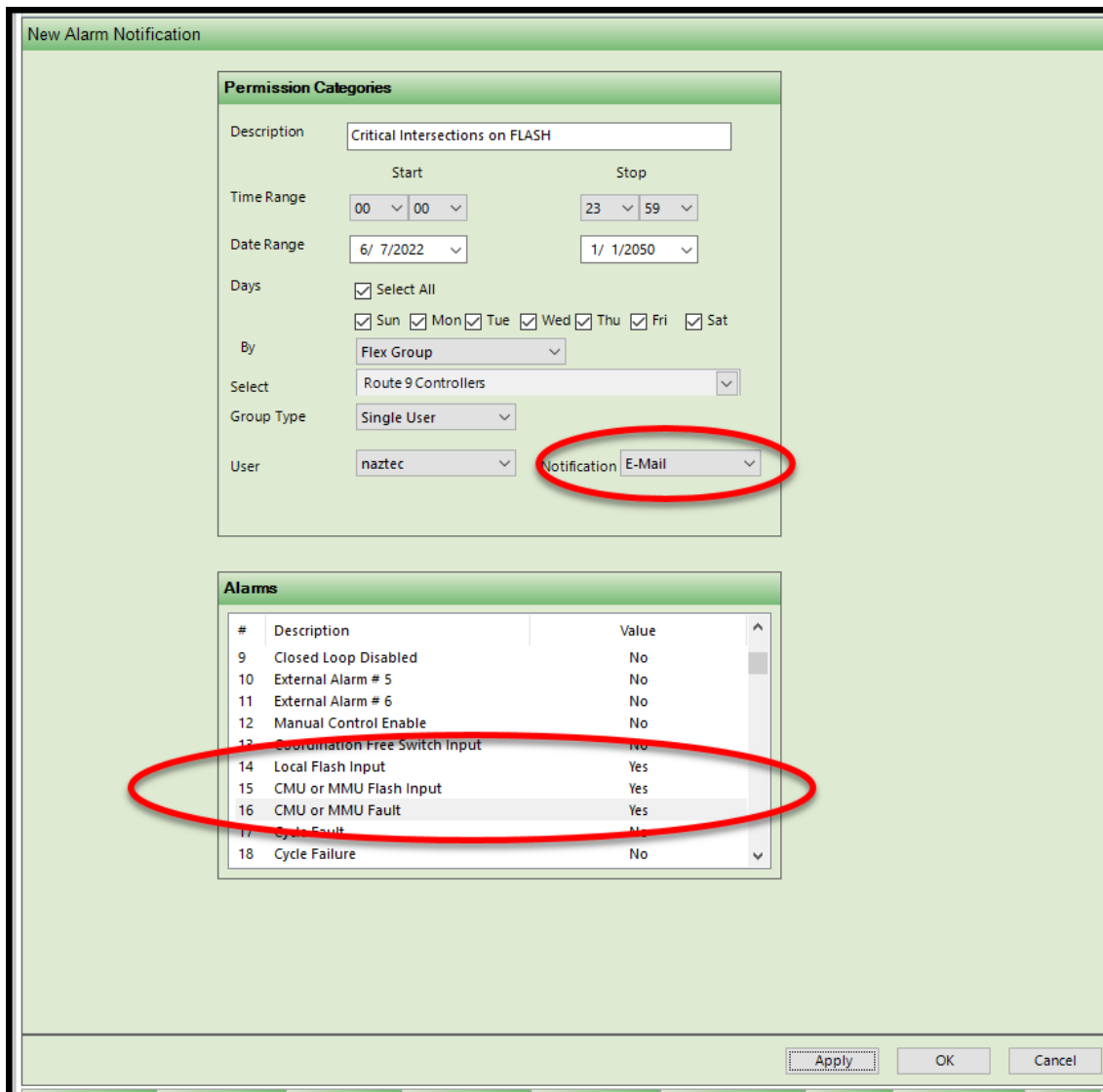


Choose *Definitions...Alarm Notification...Create Alarm Notification* from the *Actions* Pane.

Enter an Incident Name in the *Description* box.

Select Start and Stop value for *Time Range* and *Date Range* boxes. These values control the window of time that this Incident will report to the user. If a user needs to be notified only during after hours, then set PM time values in the Start Time and Stop Time boxes.

Alarm Notification List View													3 Found			
													Setup	Preview	Print	Export
Description	User	Start date	Stop Date	Start Time	Stop Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notification			
SH6 MMU Flash Notification	Atrafficttech	04/19/2014	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	E-Mail			
90A Power Down Alarms	Administrator	04/19/2014	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Paging			
Eldrige Preempt Active	Atrafficttech	04/03/2014	04/30/2014	00:00	23:59	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	E-Mail			



The *Days* box allows for notification only on the selected days, regardless of whether it fits within the Date and Time range selected. Both the *Days* value and the *Start/Stop Time* values work together.

Select the *Group* of Controllers that the user shall be notified about.

Select the Group Type. Selection include *Single User*, *User Group* or *User Distribution Group*.

Select the *User*, *User Group* or *User Distribution Group* to be notified.

Select the *Notification* method. **ATMS** can notify by Page, E-mail, and Web. If the “Paging” option is selected for the *Notification* section, the phone number of the pager must be provided in the user definition (discussed in later in this chapter). If the pager does not support alphanumeric messages, the return phone number will be used to return the alarm number and intersection ID.

Double click on the alarm entries to toggle between “Yes” and “No” to control reporting status for each alarm. A complete list of alarms is provided in Chapter 13 of the Controller Operations Manual. Some alarms are specific to the type of controller used, cabinet interface (SDLC or Type-2), conflict monitor type, light-rail operation, etc.

Click “Apply” or “OK” to save.

The table below lists some alarms that are commonly used in the **ATMS** system.

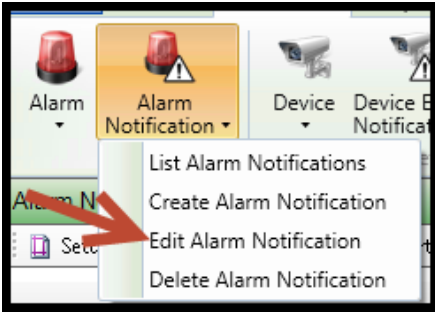
#	Alarm Name	Description
1	Power Up Alarm.	Active when power is applied to the controller. Note that you cannot detect a power outage unless you have a battery backup to keep the controller powered up to transmit this alarm.
2	Stop Timing	Indicates that one of the stop time inputs is active. In many cabinets, stop time also implies a conflict monitor flash as well.
4	Coordination Failure	Indicates coordination is failed because a call has been skipped for 3 cycles.
12	Man Control Enable	Alarm active when Police Push Button is activated
14	Local Flash Input	Asserted by some cabinets when in monitor flash or switch flash.
28	Queue detector alarm	Asserted when a programmed queue detector exceeds limits
49	Preempt 1 Input	Typically Railroad preempt 1

For Alarms to report to **ATMS**, the matching “Event” number must also be enabled in the controller



### 6.2.3 Edit Alarm Notification

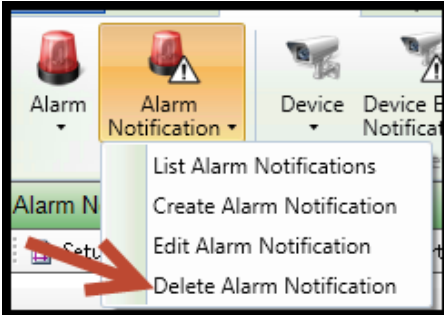
By choosing *Definitions...Alarm Notification...List Alarm Notifications* from the *Actions* Pane, **ATMS** will display the existing *Alarm Notifications*. Select the desired *Alarm Notification* from the list, the option to *Edit Alarm Notification* becomes available as shown in the figure below. The same window as the *Create Alarm Notification* will appear for editing the parameters.



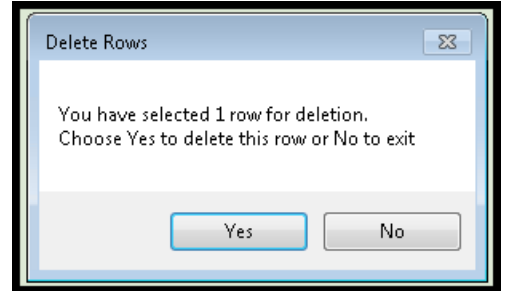
Enter your changes.

Click “Apply” or “OK” to save.

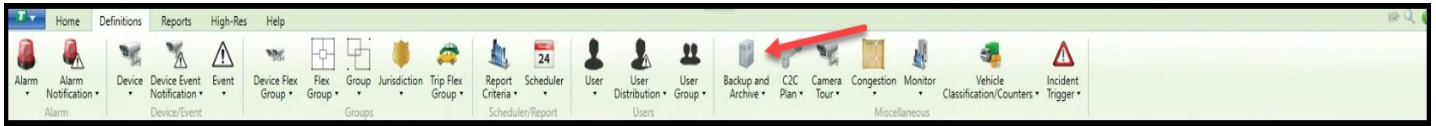
### 6.2.4 Delete Alarm Notification



To delete an Alarm Incident, navigate to *Definitions...Alarm Notification...List Alarm Notifications* from the *Actions* Pane, **ATMS** will display the existing *Alarm Notifications*. Select the desired *Alarm Notification* from the list, the option to *Delete Alarm Notification* becomes available as shown in the figure below. Select *Delete Alarm Notification*, a “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.3 Backup and Archive

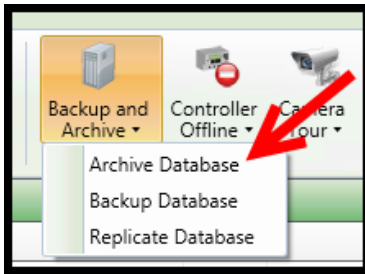


The *Backup and Archive* section of **ATMS** enables the system administrator to manually perform database backup to a designated storage server. This utility prevents data files from getting too large and also provides an easy mechanism to perform system backups.

**In all three processes (*Archive*, *Backup*, or *Replicate*), the SQL and controller databases first need to be placed in a designated folder on the **ATMS** server. This would typically be a folder named “Archive” in the root “C” or “D” directory, or as a folder in the C:\naztec\nazserv. Once the file is saved to this destination, then it can be exported to an outside server for storage or use.**

It is recommended that the storage drive is located on a different computer or device to protect the data against server failure and data loss.

### 6.3.1 Archive Database



The *Archive Database* utility in **ATMS** enables the system administrator to remove older portions of the system’s largest files to a designated storage server, keeping the main data files in an efficient and manageable file size. The *Archive* function can target any combination of four SQL data files, which are: 1) Preempts, 2) Volume, 3) Alarms and 4) Splits. All of these files accumulate system data on a regular basis through the “Full Status” poll and are continually growing as the system *Administrator* runs.

To create a database *Archive*, navigate to *Definitions...Backup and Archive...Archive Database*. Select the *Target Directory* for the database to be stored. This entry must include the full network path to the storage location. Next, select the *Archive Older Than* value in days. This value will remove file data from each designated file based on this selection, which will affect data access for future report generation. It is recommended that a selection of greater than “30” days (approximately 1 months) is made when performing this action.

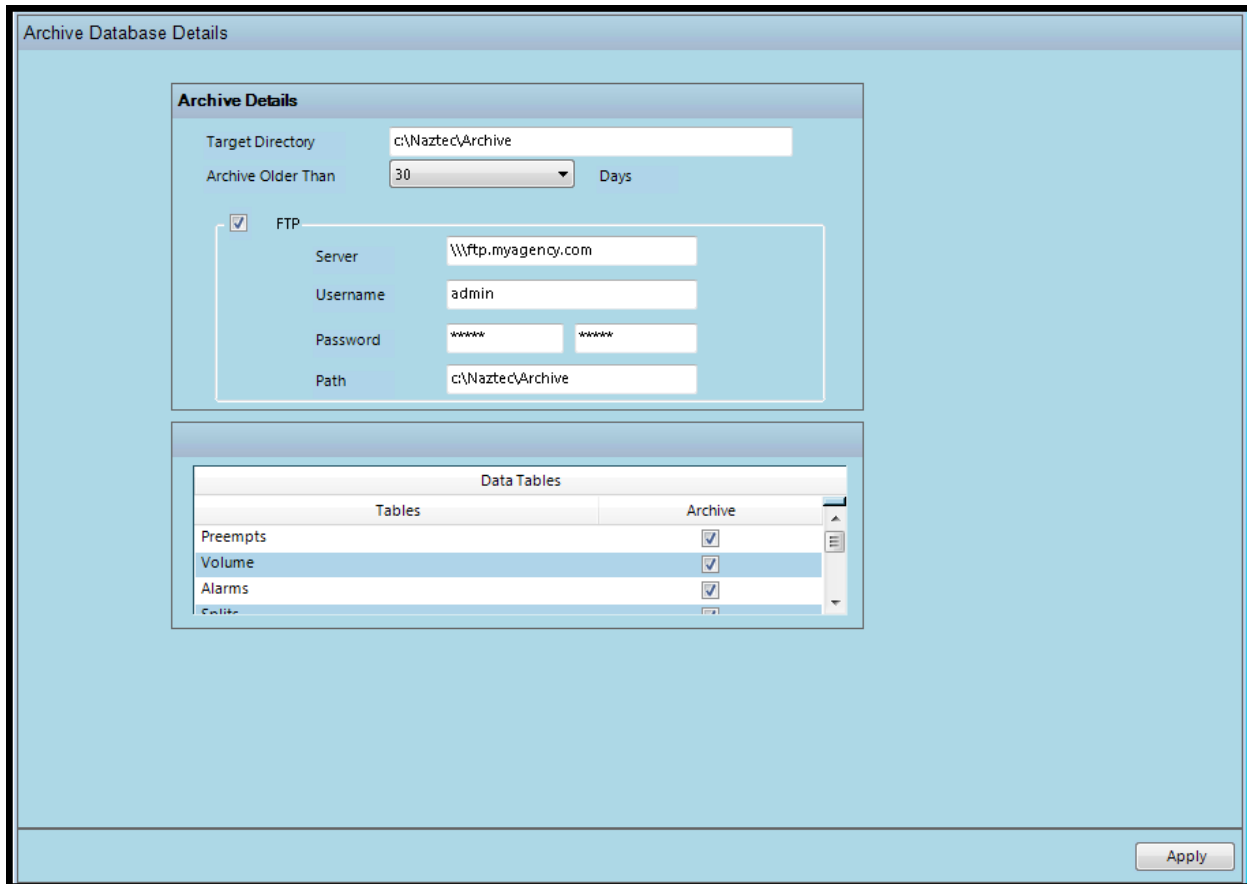
The *Archive Database* utility can also send the data to a storage location via FTP (File Transfer Protocol). If this method is desired, check the box to enable the *FTP* function.

Next, select the *Server* name for the storage server. This value can be the hostname or the IP address of the server. An example of this would be “192.168.100.100” or “ftp.myagency.com”. If this server requires an authentication, complete the *Username* and *Password*.

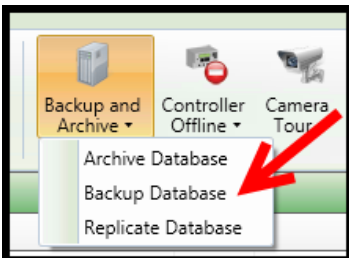
The *Path* is the virtual directory on the ftp server where the archive data will be stored.

Check each *Data Table* that will be archived in this process.

Select “*Apply*” to save the *Archive* configuration. To implement the *Archive* process, the *Archive* task can be performed manually through an *Instant Report* or will need to be configured as a scheduled task under *Definitions...Scheduler...Create New Schedule*.



### 6.3.2 Backup Database

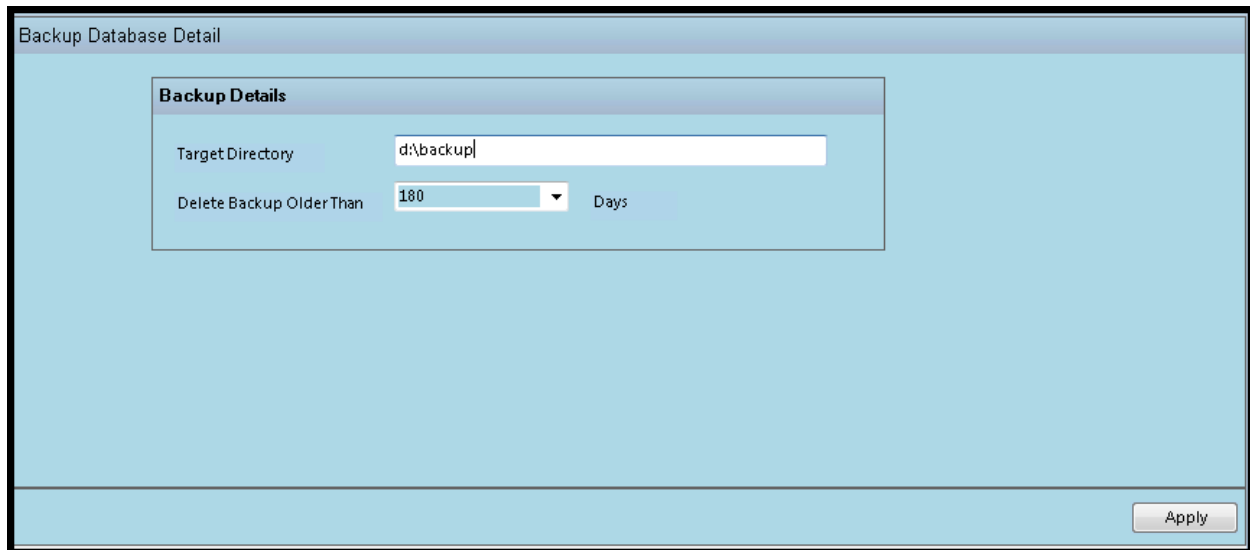


The *Backup Database* utility performs a copy of the core **ATMS** system database. This includes the entire system controller database folder named “Data” (usually located in the C:\Naztec\Nazserv\Data folder) and the system’s SQL database.

To perform a *Backup Database* function, navigate to *Definitions...Backup and Archive...Backup Database*. The *Target Directory* must be valid to both the **ATMS** application server as well as the SQL Server for the database to be stored. For example, if the SQL Server is running on a machine separate from the application server, then the *Target Directory* should be stated as the UNC network path (i.e. [\\myserver\backup](#)).

The SQL Server process should be running as a user that has sufficient privileges to write to the network path. By default, SQL Server runs under the local system account (SYSTEM user). In order for the backup to succeed, the SQL Server program will have to run as an operating system user (or Network user when using Active Directory) and the network share and its underlying file system will have to allow the same user-write access.

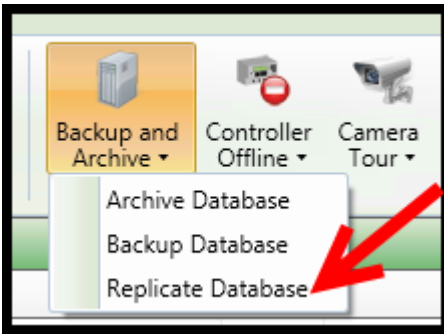
Next, select the *Delete Backup Older Than* value in days. This value will remove older backup file data from each designated file based on this selection, which will affect data access for future report generation. It is recommended that a selection of greater than 180 days (approximately 6 months) is made when performing this action so that data will be available to readily generate reports from a recent timeline.



The screenshot shows a window titled "Backup Database Detail". Inside the window, there is a section titled "Backup Details" which contains two configuration fields. The first field is labeled "Target Directory" and has a text input box containing the path "d:\backup\". The second field is labeled "Delete Backup Older Than" and has a dropdown menu set to "180" followed by the text "Days". At the bottom right corner of the window, there is an "Apply" button.

Select “*Apply*” to save the *Backup* configuration. To implement the *Backup* process, the *Backup* task can be performed manually through an *Instant Report* or will need to be configured as a scheduled task under *Definitions...Scheduler...Create New Schedule*.

### 6.3.3 Replicate Database



The *Replicate Database* utility sets up an export of selected SQL databases to a destination server, for functions such as implementing a reporting server or supporting a **WEB.now** installation.

To create a *Replicate Database* function, navigate to *Definitions...Backup and Archive...Replicate Database*. Select the *Target Directory* for the database to be stored. This entry must include the full network path to the storage location. The *Replicate Database* utility can also send the data to a storage or Web Server location via FTP (File Transfer Protocol). If this method is desired, check the box to enable the *FTP* function.

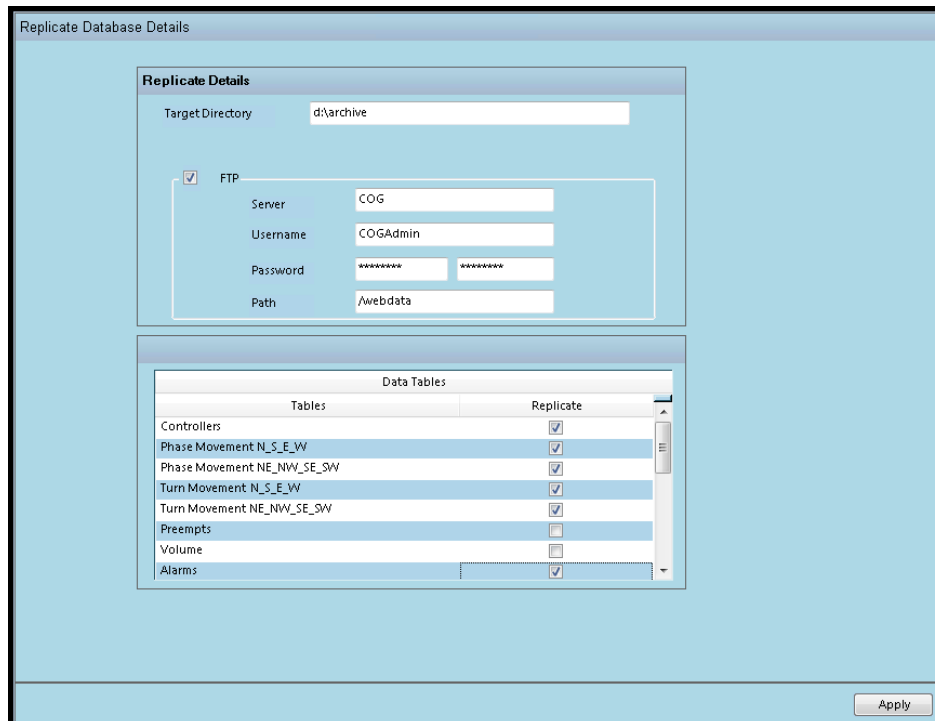
Next, select the *Server* name for the ftp server. This value can be the “Hostname” or the IP address of the server. An example of this would be “192.168.100.100” or “[ftp.myagency.com](ftp://ftp.myagency.com)”.

If this server requires authentication, complete the *Username* and *Password*.

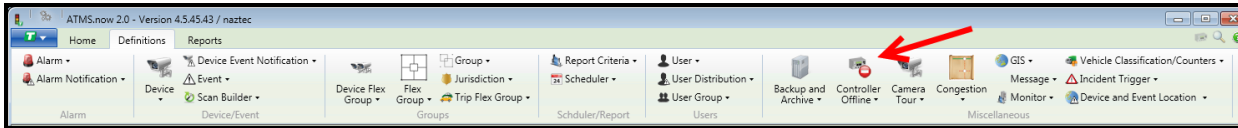
The *Path* is the virtual directory on the ftp server where the archived data will be stored.

Check each *Data Table* that will be archived in this process.

Select “*Apply*” to save the *Replicate* configuration. To implement the *Replicate* process, the *Replicate* task can be performed manually through an *Instant Report* or will need to be configured as a scheduled task under *Definitions...Scheduler...Create New Schedule*.



## 6.4 Controllers Offline: Only Available in ATMS versions prior to ATMS 2.14



The *Controllers Offline* function allows the user to limit the communication of information to only those devices that are actually “online” and communicating to the central server. By designating controllers that are offline, you will isolate the controllers that are not ready for communication from the controllers that are operational and need to communicate to **ATMS**. The user should make sure that all controllers that are communicating “on-line”.

If a controller status on the List or GIS view does not show the appropriate color-coded condition, verify that the controller is properly assigned to the “on-line” side of the list.

**NOTE: In ATMS 2.14, this function has been moved to the *Home-Configuration* section. Please refer to Chapter 5 for more information.**

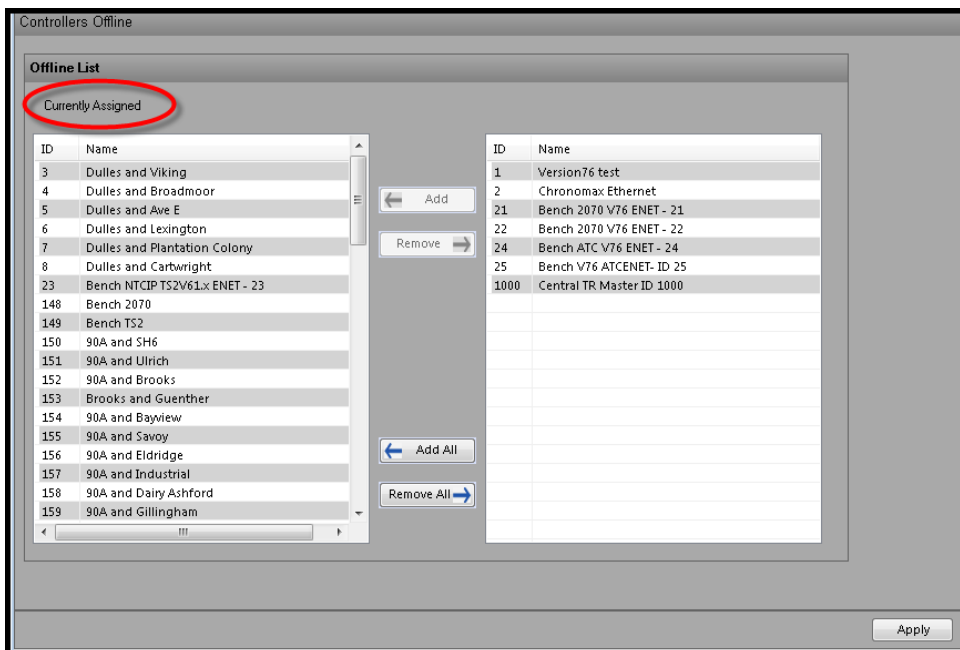
### 6.4.1 Offline List



If a controller is assigned to the Offline list then the central server will not attempt to communicate to it. If you remove the controller from the offline list, the central will attempt to establish communications with this unit. To add or remove controllers from the *Offline List*, navigate to *Controllers Offline...Offline List*. To add or remove controllers from the list, highlight the controller(s) from the appropriate list, then click the *Add*, *Remove*, *Add All*, or *Remove All*.

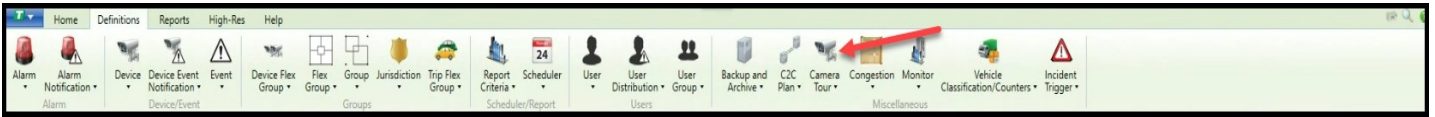
The *Currently Assigned* list is the group of controllers that are assigned to the *Offline List*. **ATMS** will not attempt to communicate with the controllers listed in the *Currently Assigned* category.

Select “*Apply*” to save and close the window.



**NOTE: In ATMS 2.14, this function has been moved to the *Home-Configuration* section. Please refer to Chapter 5 for more information.**

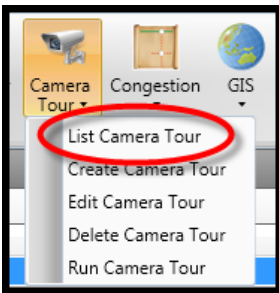
## 6.5 Camera Tour



The *Camera Tour* feature provides for a pre-programmed “Touring” of selected camera sites and preset views. Each preset view is programmed for a dwell time before going to the next camera view. This feature can be used to save time by eliminating the need to manually launch multiple cameras and navigate to a desired PTZ location.

As with the *Camera/CMS Events* function, the *Camera Tour* in **ATMS** utilizes a 3<sup>rd</sup> party camera server software by Industrial Video & Control for PTZ commands and presets. This “Relay Server” works with most major brands of Analog and IP-based cameras, but is not included in the standard package of **ATMS**. For more information regarding this feature, contact your Cubic | Trafficware representative.

### 6.5.1 List Camera Tour



To display the existing *Camera Tours*, select *Definitions...Camera Tour...List Camera Tours*. **ATMS** will display all of the available *Camera Tours* in the main window. When one of these is selected from the list, the options to *Edit*, *Delete*, or *Run Camera Tour* become available for selection.

Each tour listed can be expanded to display the member cameras within the highlighted tour. Expanding the list is done by “double-clicking” the tour or by using the “+” or “-“to expand or collapse the list.

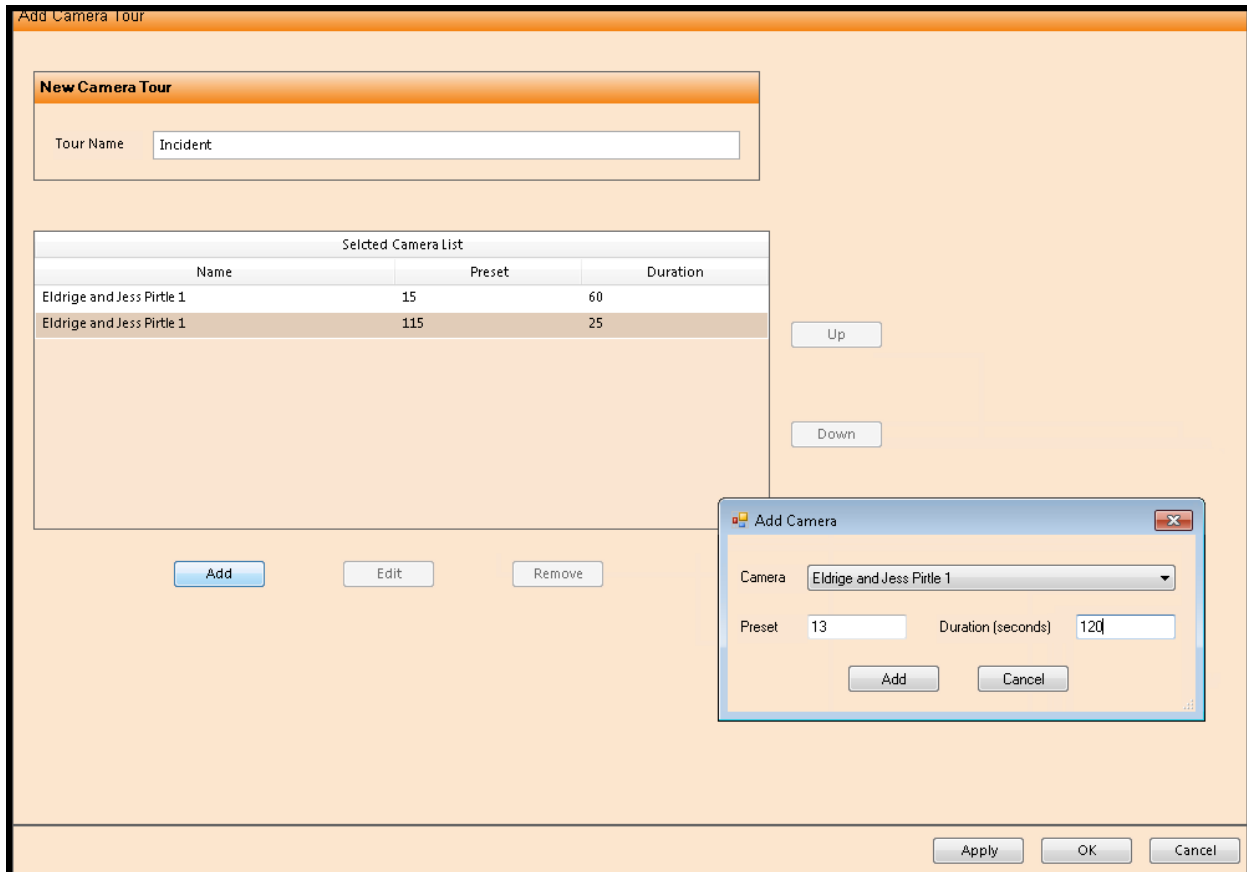
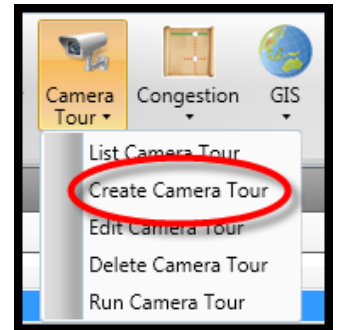


## 6.5.2 Create Camera Tour

Prior to creating a *Camera Tour*, the Camera and the presets have to be defined in **ATMS**.

To create a *Camera Tour*, navigate to *Definitions...Camera Tour...Create Camera Tour* from the *Action* pane. The setup screen shown below will appear in the main view pane.

First, assign a *Tour Name* to your *Camera Tour*. Next, select “Add” to assign cameras and parameters to the tour. A pop-up titled “Add Camera” will appear.



The *Camera* selection defines each camera within the “Tour”.

Select a *Preset* number as assigned for the camera in the IV&C Relay Server programming.

The *Duration* value assigns the number of seconds that the camera will remain at the preset location before releasing to the next assigned location.

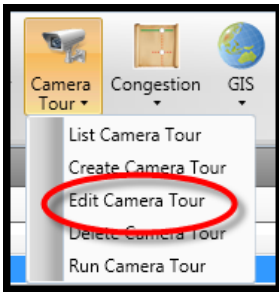
Each of these three fields is a mandatory entry for this function.

Select the “Add” button to save and enter the camera to the Tour List. After adding each entry, you will see it appear on the “*Selected Camera List*”.

Once you have added all cameras and finished building your tour, click “Apply” or “OK” to save.



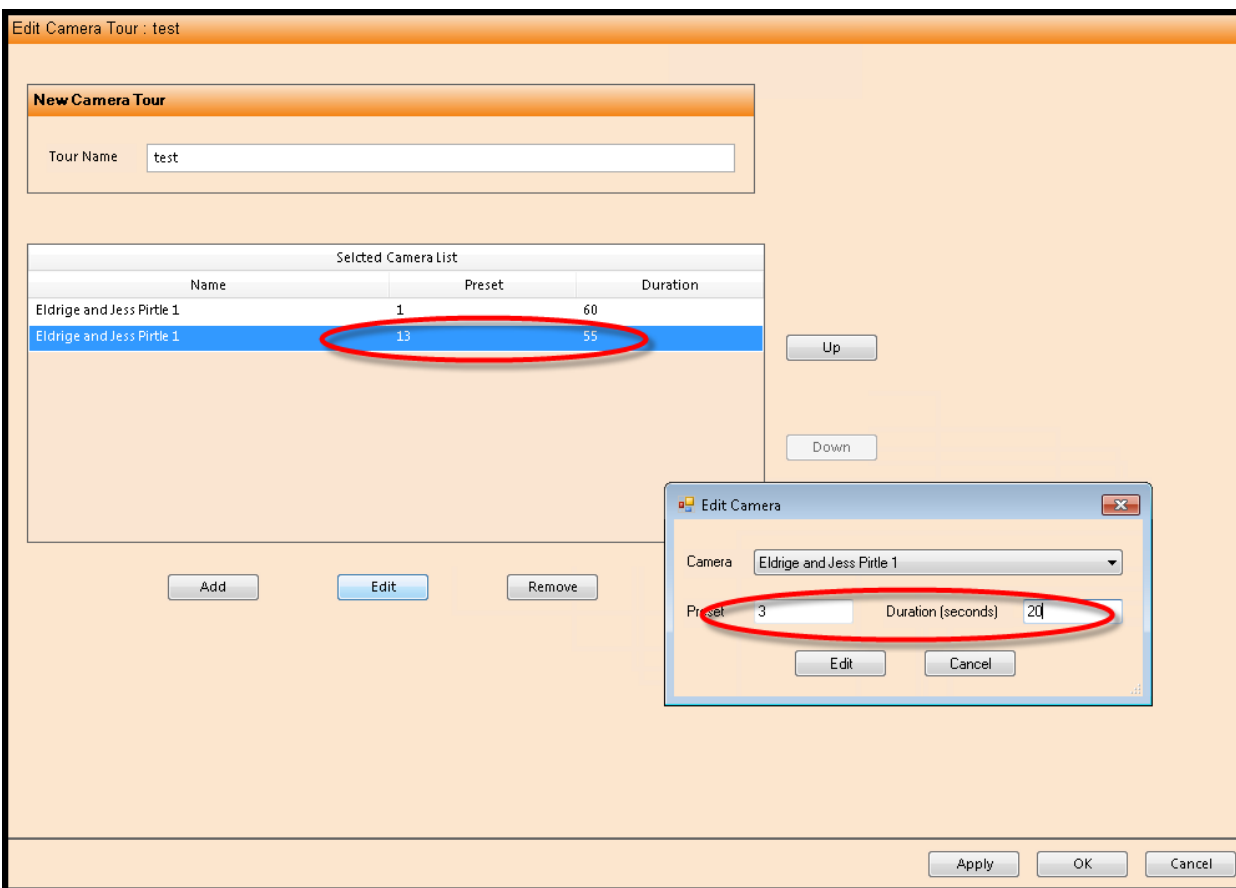
### 6.5.3 Edit Camera Tour



The *Camera Tour* can be modified to add, modify, or delete member cameras and their values such as *Preset* and *Duration*.

To edit the programmed *Camera Tour*, navigate to *Definitions...Camera Tour...List Camera Tours* from the *Actions Pane*, **ATMS** will display the programmed tours. Select the desired tour from the list. The option to *Edit Camera Tour* becomes available, once it is selected. The same window as the *Create Camera Tour* will appear for editing the parameters of an existing camera or removing a camera from the tour.

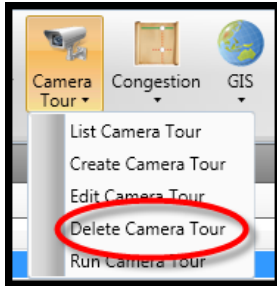
The picture below shows the selection of “Jess Pirtle and Eldridge” with Preset 13 and a 55 second duration being changed to Preset 3 and a 20 second duration. After the desired changes have been made to the camera parameters, select the “Edit” button to submit the changes. The changes should immediately update to the “*Selected Camera List*” section of the screen.



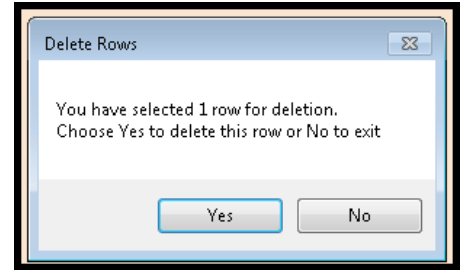
To remove a camera from the tour, highlight the desired camera and select the “Remove” button.

Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen.

## 6.5.4 Delete Camera Tour



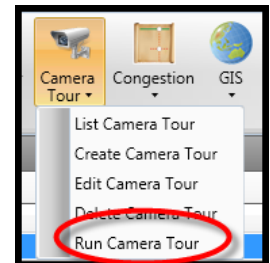
To delete a *Camera Tour*, navigate to *Definitions...Camera Tour...List Camera Tour* from the *Actions Pane*. **ATMS** will display the existing *Camera Tours*. Select the desired tour from the list, the option to *Delete Camera Tour* becomes available as shown in the figure below. Select *Delete Camera Tour*, a “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.5.5 Run Camera Tour

To initiate a tour of your designated system of cameras based on the presets and time durations that you have programmed, highlight the desired tour from the list, then select *Run Camera Tour*. The *Camera Tour* will launch a browser and automatically populate the URL address with video feed information for the time duration in the tour. Each camera will rotate through the viewing browser as programmed.

This feature is available for public use from the optional **ATMS** website product.



## 6.6 Congestion

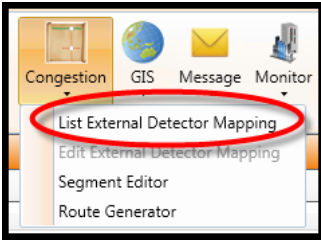


The *Congestion* section provides the tools to set up the system elements that determine and display the Congestion Level on the *GIS Map*.

The *External Detector Mapping* is a mechanism for sourcing the **Wavetronix** Smart Sensor HD Volume and Occupancy data and associating it with an intersection’s approach detector channels in the *Segment Editor* for the purpose of the Congestion display on the map. This feature does not place calls, volume or occupancy data directly to the controller or its database. This is purely a sourcing mechanism for the purposes of the Congestion layer on the GIS Map.

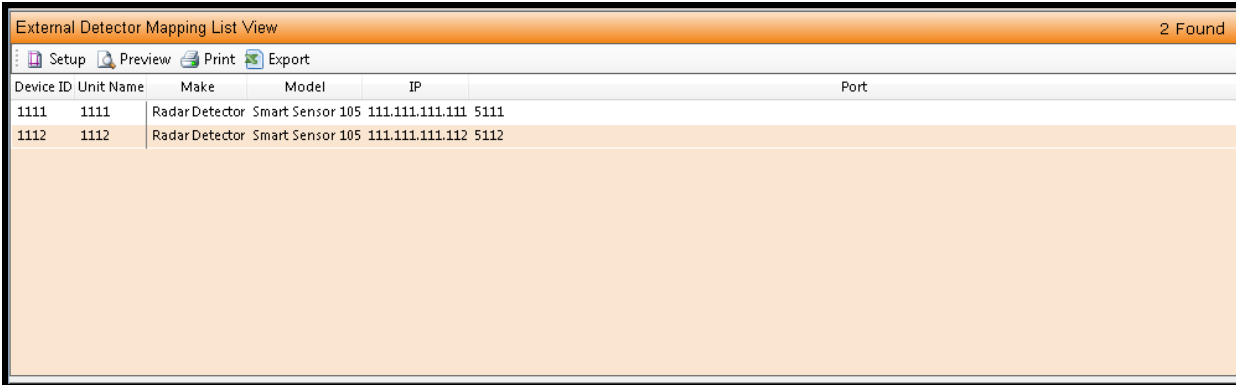
The *Segment Editor* (only with GIS Mapping) is the tool that defines how **ATMS** collects and displays the incoming Volume, Occupancy and Speed data and displays it to the *GIS Map* as a Congestion Segment. This editor also provides the necessary GIS editing tools to create and modify a GIS-based Congestion Layer.

## 6.6.1 List External Detector Mapping



Before *External Detectors* can be assigned to controllers through the *Edit* tool, it has to be selected from the *List* view. To view the list of *External Detectors*, navigate to *Congestion...List External Detector Mapping*. All defined detectors will appear on the list as shown below.

Highlight the targeted detector from the list.



External Detector Mapping List View 2 Found

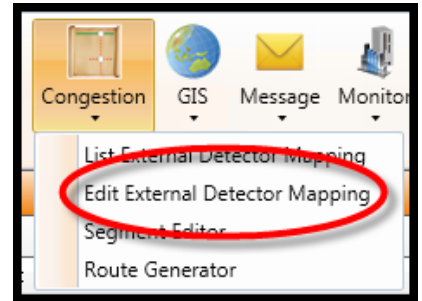
Setup Preview Print Export

Device ID	Unit Name	Make	Model	IP	Port
1111	1111	Radar Detector	Smart Sensor 105	111.111.111.111	5111
1112	1112	Radar Detector	Smart Sensor 105	111.111.111.112	5112

## 6.6.2 Edit External Detector Mapping

The *Edit External Detector Mapping* function sets the intersection and detector channels that an *External Detector* will provide the volume and/or occupancy data to.

Once the *External Detector* has been selected from the *List* function, navigate to *Edit External Detector Mapping*. The main window will provide “Detector Mapping” boxes for “Controller 1” and “Controller 2”.

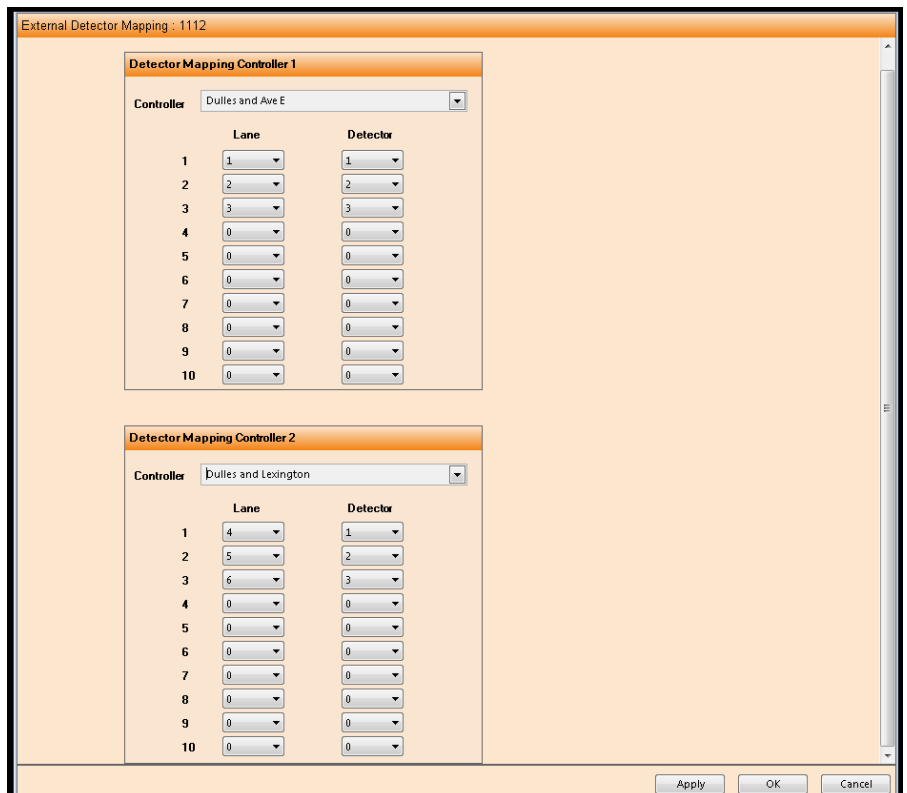


From the drop-down selection box(es) for each, select the controller that will get its Congestion data from the selected *External Detector*. Give each *Lane* an individual lane assignment to match the lane programming in the *External Detector*. The *Lane* value is the count source from the *External Detector*. Since **Wavetronix** Smart Sensor HD can measure two directions at the same time, two intersections can be set with dedicated lanes for one direction (lanes 1-4), and different lanes for the other direction (lanes 5-8).

In most cases the *Lane* assignment values for a detector will be different for each direction (controller). It will be rare that a detector will be programmed for two directions. Therefore, if a *Lane* number is assigned to one controller, it usually should not be used for the other controller.

**The *Detector* value should be the assigned detector channel that is used for that approach of that controller on the *Congestion Level* setup screen.** This screen can be found in the *Segment Editor...Congestion Tab* or on the *Home Module...Actions...Definitions...Congestion Level*.

The *Detector* values can be the same values for *Controller 1* and *Controller 2*, since they are for different controllers and might use similarly numbered inputs for the approaches.

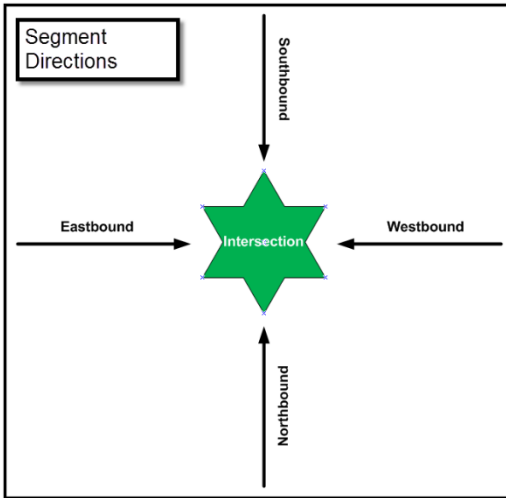
The screenshot shows a window titled 'External Detector Mapping : 1112'. It contains two sections: 'Detector Mapping Controller 1' and 'Detector Mapping Controller 2'. Each section has a 'Controller' dropdown menu and a table with 'Lane' and 'Detector' columns. Controller 1 is set to 'Dulles and Ave E' and Controller 2 is set to 'Dulles and Lexington'.

Detector Mapping Controller 1		
	Lane	Detector
1	1	1
2	2	2
3	3	3
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

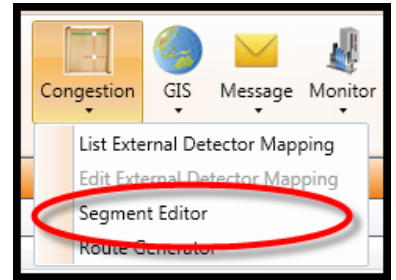
  

Detector Mapping Controller 2		
	Lane	Detector
1	4	1
2	5	2
3	6	3
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

### 6.6.3 Segment Editor (GIS Mapping only)



The *Segment Editor* provides the ability to assign approach segments for Congestion reporting. The *Segment Editor* tool performs this by drawing parallel lines to the GIS centerlines displayed in the Editor.

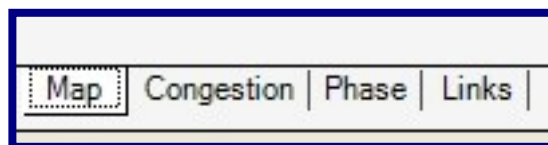


To create Congestion segments in **ATMS**, select *Definitions...Segment Editor...Controllers*. The *Overview* pane will display a two-part window with each controller in the upper half and the GIS centerline map in the lower half. If multiple GIS line files are used in your **ATMS** mapping system, such as a fiber backbone layer, make sure that you select the centerline file for congestion drawing. The default color for the centerline layer is a blue line format.

Each controller on the list displays eight boxes, one for each direction of the eight-point compass. If a box is checked, then a segment has already been assigned for that direction of the intersection.

The same compass assignments must be assigned to the Segment as defined in the Congestion, Turning Phase Movements, and Link Speed programming screen for the controller. Without this proper consistency, the detector counts will not be properly routed to the Segments.

In the Legacy view, when a targeted controller is selected, **ATMS** will zoom the *Segment Editor* GIS map to the intersection, and four tabs will appear on the bottom of the *Overview* Pane: Map, Congestion, Phase and Links, as shown below. Each tab enables the user to define the related or edit the parameters for the selected controller. Selecting these tabs shortcut to the same programming screens as the *Congestion*, *Turning Phase Movements*, and *Link Speed Definitions* as found in the *Home* module under *Actions...Configuration* that were discussed in Chapter 5.



## Map Tab - Legacy View Only








Selecting the Map option takes the user to the *Controller Segment Editor*. The Overview Pane will be divided into two halves. The upper half will contain the list of defined intersections. The lower half will provide the system map display. By selecting an intersection from the list in the upper half, the user will display that intersection's location on the system map in the lower half of the Overview Pane, as shown in the figure below.


## Map Navigation Toolbar

The *Controller Segment Editor* control is performed by selecting a toolbar function from the upper left of the GIS map:

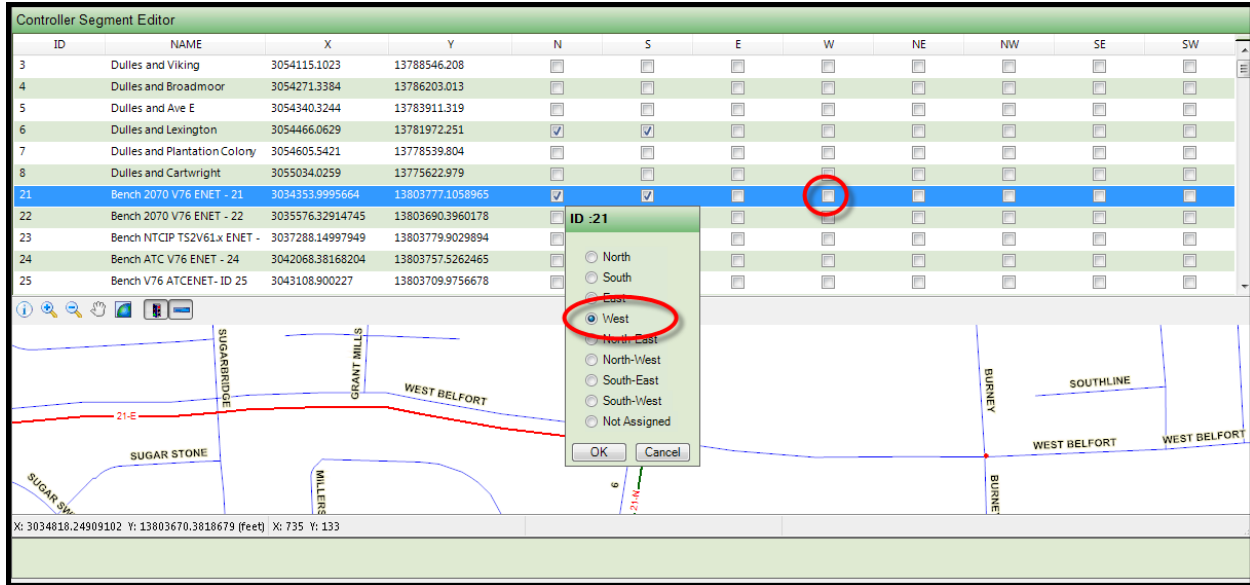


To navigate the *GIS Location Editor* map, select one of the following icons:

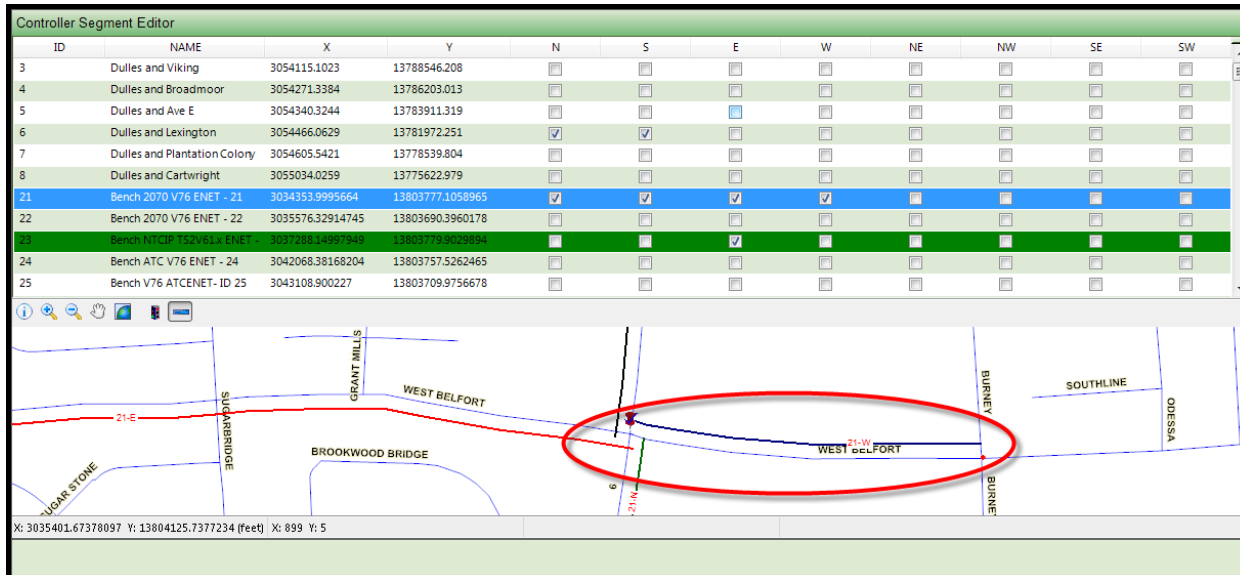
-  **Information** – Selecting this function will provide real-time information of the device using a “Hover Balloon”, by placing the mouse over the desired map object.
-  **Zoom-In** – Selecting this function will allow the user to click on a point on the map and wrap around a desired area to zoom.
-  **Zoom-Out** – After selecting this, clicking once on the map will zoom out 1 measure of extent.
-  **Pan** – This enables the user to “grab” the map and slide it in any direction.
-  **Full Extent** – By clicking this icon, the GIS map will zoom out to the fullest extent.
-  **Edit Controller** – After clicking this icon, the user can “rubber-band” around another intersection on the map for Segment Editing instead of navigating to the next intersection from the list. After selecting an intersection with this process the “push-pin” will appear at the newly-selected intersection, and the list will automatically navigate to and highlight the selected intersection from the map.
-  **Add Shape** – Provides congestion line drawing to be assigned for each approach.

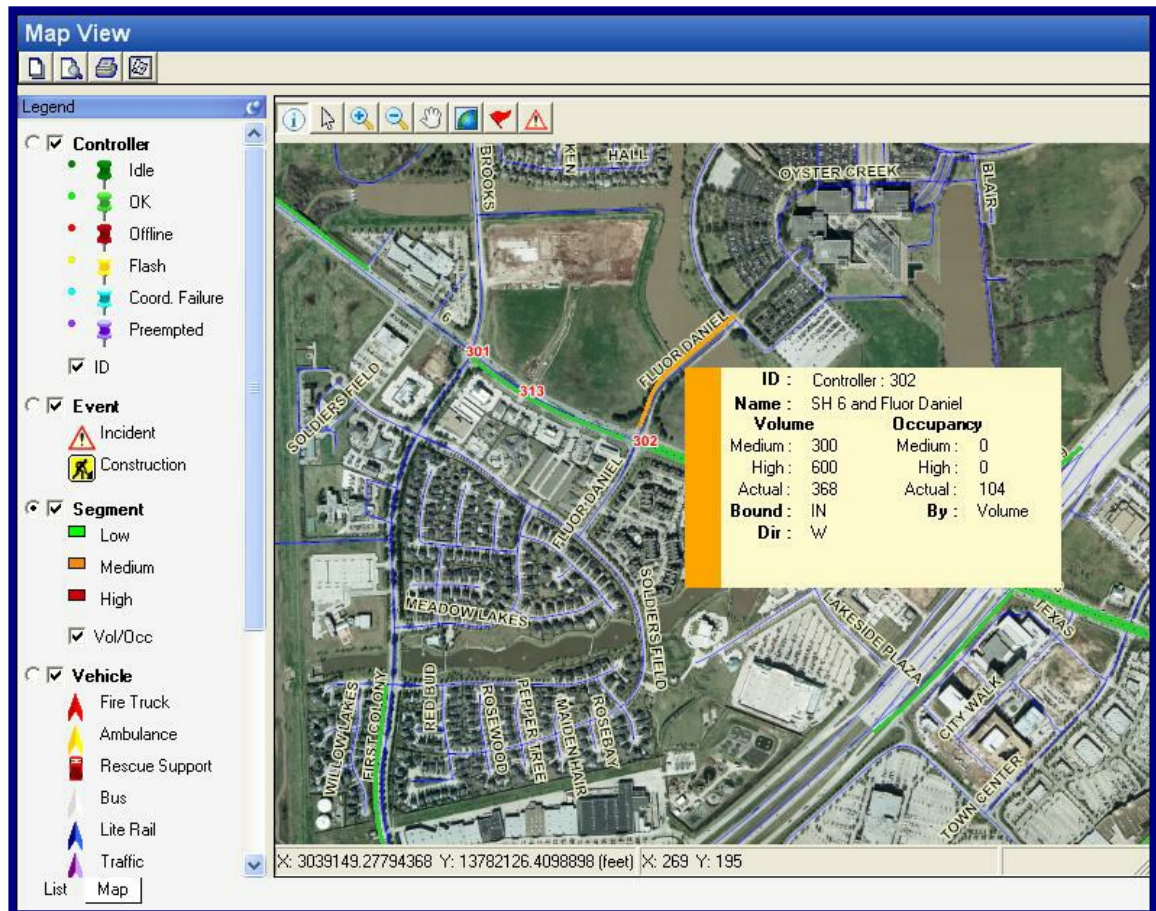
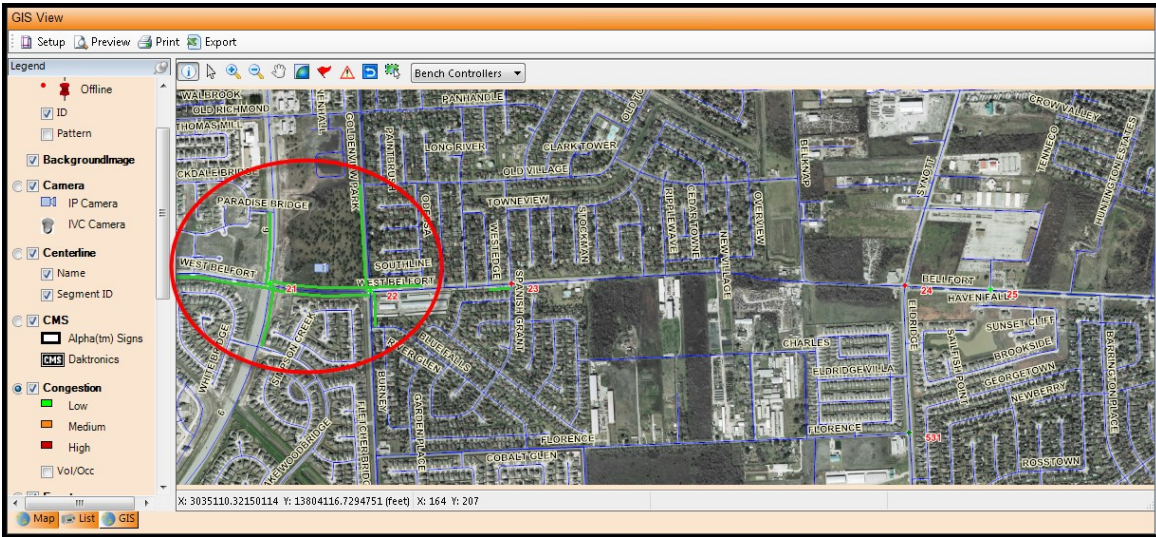
To create a congestion line segment, select the “Add Shape” icon .

Next, place your mouse on the approach line segment for the intersection and “left-click”. A box will appear to select the corresponding compass direction for the approach segment. A choice of eight compass directions will be available. Select the direction and click “OK”. A colored line segment will be drawn parallel to the centerline segment and the corresponding compass box will be checked in the list. The length of this line segment is determined by the termination points of the GIS file. An approach can have any number of congestion segments drawn for each approach. This allows each approach to be drawn completely between controllers even though there are segment breaks in the lines.



Proper segment and detector assignments will result in the following Congestion Level reporting on the GIS map (Segment or Congestion Level layer):





The same compass assignments must be assigned to the Congestion line as defined in the Congestion, Turning Phase Movements, and Link Speed programming screen for the controller. Without this proper consistency, the detector Volume counts and/or Occupancy data will not be properly routed to the Congestion lines.



## Congestion Tab - Legacy View Only

<div style="border: 1px solid blue; padding: 5px;"> <p><b>North Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div> <div style="border: 1px solid blue; padding: 5px;"> <p><b>South Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div> <div style="border: 1px solid blue; padding: 5px;"> <p><b>East Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div> <div style="border: 1px solid blue; padding: 5px;"> <p><b>West Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div>	<div style="border: 1px solid blue; padding: 5px;"> <p><b>North-East Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div> <div style="border: 1px solid blue; padding: 5px;"> <p><b>North-West Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div> <div style="border: 1px solid blue; padding: 5px;"> <p><b>South-East Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div> <div style="border: 1px solid blue; padding: 5px;"> <p><b>South-West Bound</b></p> <p><input type="radio"/> Occupancy <input checked="" type="radio"/> Volume</p> <p>Medium <input type="text" value="0"/> <input type="text" value="0"/></p> <p>High <input type="text" value="0"/> <input type="text" value="0"/></p> <p>Congestion Level Detectors</p> <p>0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾ 0 ▾</p> </div>
---	---

Select the Congestion tab at the bottom of the Overview Pane.

This selection will enable the user to define and edit an intersection’s congestion level definitions for the purposes of proper display on the “*Congestion Level*” layer of the GIS map. This section allows **ATMS** to take inbound traffic counts from each controller and classify the value against the *Congestion Level* thresholds for **LOW (Displayed in GREEN)**, **MEDIUM (Displayed in YELLOW)**, and **HIGH (Displayed in RED)** for that collection period.

Two congestion levels can be assigned to each intersection approach (Medium and High). Incoming values that are below the minimum value for “Medium” will be classified by **ATMS** within the “Low” category. The user may specify either *Volume* or *Occupancy* to measure congestion by clicking the corresponding circle.

Assign the *Congestion Level Detectors* that you want to be assigned as collection detectors for each approach. Make sure all left, right, and thru lanes are collecting. A maximum of six detectors may be specified for each intersection approach.

Click “Apply” or “OK” to save.

## Phase Tab - Legacy View Only

This tab selection will enable the user to define and edit an intersection’s Turning/Phase Movement definitions for the purposes of proper report generation. The *Turn/Phase/Directions* section allows **ATMS** to take incoming controller count and preemption information and associate it with the correct phases and directions during report generation.

First, select the appropriate compass direction for the intersection as shown in the above figure. In the first row of each direction, enter the associated phases for the “Left”, “Through”, and “Right” Lanes. Next enter the associated detector numbers for each phase.

Note: this does not assign the detector channel to the associated phase in the controller. This function is only used as a database filter for proper report generation and Synchro utilities. However, the controller database has to have the matching detector channels checked as counting detectors for the counts to be sent to **ATMS**.

The third row is for assigning the detector type to each assigned detector channel.

The fourth row, “Share” is for turning movements that do not have dedicated detection for the turning lanes. In this case, enter the estimated percentage or detector activations from the Far Left or Far Right lane is to be subtracted from the Through-Movement counts. Next, check the box titled “Subtract Left from Thru” or “Subtract Right from Thru”. Enter the corresponding Through-Movement detector number(s) in the “Detectors” boxes for the Left or Right lane. This will classify the assigned percentage of counts for that detector to the turning movement. **ATMS** will calculate turning and through counts based on this percentage when generating reports.

Lastly, if you are operating an Overlap(s) at the intersection, enter the “Overlap” number to the associated phase.

Click “Apply” or “OK” to save.

## Links Tab - Legacy View Only

This tab will enable the user to define and edit an intersection's approach speed and distancing definitions for the purposes of proper Time-Space Diagram generation. The *Intersection Link Speed* section allows **ATMS** to take controller active pattern and offset information and associate it with the current cycle timer by providing the necessary approach information for the intersection. This information includes *Intersection* at the other end of the approach leg, approach *Speed*, and *Distance* between intersections.

First, determine the compassing directions for the intersection, N-S-E-W or NE-NW-SE-SW. Select the drop-down for the first box labeled "Controller". The selected controller should be the intersection at the other end of the designated approach. In the example below, the defined controller for the Southbound approach is the intersection to the south, or the next intersection as you continue through the southbound approach (Greenback Lane & Binet). For example, assign the intersections to the North, South, East, and West.

Assign an associated Street name if desired. This entry is optional.

The Speed entry can be the posted speed for the approach or the speed used for coordination modeling. The latter will show better accuracy of your displayed "green band" in the *Time-Space Diagram*. Entering the speed information for both the inbound and outbound legs of the intersection is required for the *Time-Space Diagram* to work properly.

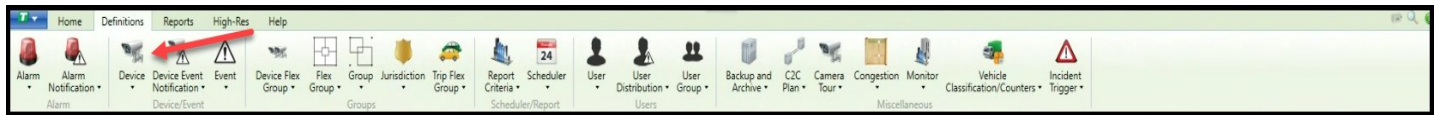
Lastly, enter the distance (in feet) between the primary intersection and the downstream intersection.

Click "Apply" or "OK" to save.

Approach	Controller	Street	Speed	Distance
North Bound	Naztec ITS Controller		35	500
North-East Bound			0	0
South Bound	Greenback Lane & Binet/Br		35	500
North-West Bound			0	0
East Bound	Hood Road and Central Blv		43	1500
South-East Bound			0	0
West Bound	Donald Ross Rd and Prosp		43	2500
South-West Bound			0	0

The assigned controller for an approach should be the intersection that is or "Downstream" from the approach.

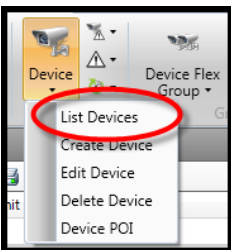
## 6.7 Devices



**ATMS** provides the ability to communicate and control additional system *Devices* through the main control interface. You may add various hardware devices, such as cameras, network switches, CMS signs, sensors, etc. to your **ATMS** Central System. After they are created, they can be placed on the *GIS map* for direct control. Assigning them to the *GIS map* is discussed in the next section, *Device and Event Locations*.

This *Device* section of the *Definitions* module allows the user to *Create*, *Edit*, or *Delete Devices* prior to assigning them to the *GIS map*.

### 6.7.1 List Devices

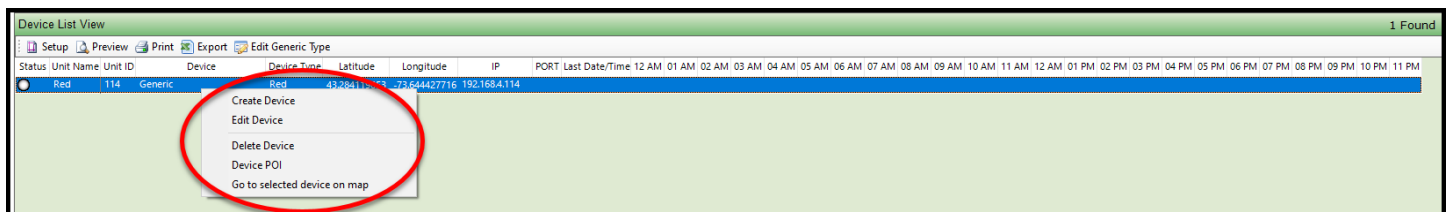


To display the existing *Devices*, select *Definitions...Devices...List Devices*. **ATMS** will display all of the available *Devices* in the main screen. When one of these is selected from the list, the options to *Edit* or *Delete* become available for selection.

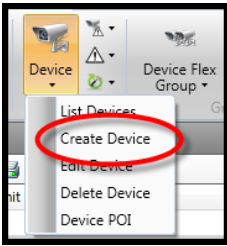
Starting with ATMS 2.9, the Device List will display communication status of each device, the device name, unit ID, the device type, latitude / longitude of the device, the IP address and port number, the last date/time of when the device was communicating successfully and the number of successful pings vs number of communications attempts per hour. The list can be sorted per each column.

Status	Unit Name	Device	Device type	Latitude	Longitude	Last Date/Time	12 AM	01 AM	02 AM	03 AM	04 AM	05 AM	06 AM	07 AM	08 AM	09 AM	10 AM	11 AM	12 AM	01 PM	02 PM	03 PM	04 PM	05 PM	06 PM	07 PM	08 PM	09 PM	10 PM	11 PM		
●	Alpha(tm) Signs	CMS	Alpha(tm) Signs	29.8170549711331	-95.4445112618655	09/06/2018 03:03:12														1/1	3/3	1/1										
●	IP Cam	Camera	IP Camera	29.8173896683736	-95.4445891695298	09/06/2018 03:03:12														1/1	3/3	1/1										
●	FXM 1100/2000	Alpha UPS	FXM 1100/2000	29.7822159791939	-95.4163913934105	09/06/2018 03:03:12														1/1	3/3	1/1										
○	ID 3561 Fxm 2000	Alpha UPS	FXM 1100/2000	29.5920159290211	-95.2239792472912																											
○	EDI CMUlip-212	CMU	EDI CMUlip-212	29.7778560876833	-95.3929847276782																											
○	FXM 1100/2000	Alpha UPS	FXM 1100/2000	29.777758770486	-95.3930133317198																											
○	FXM 1100/2000	Alpha UPS	FXM 1100/2000	29.7779524384353	-95.4677491321359	09/06/2018 03:03:12														1/1	2/2	1/1										
●	GreenTest	Generic	WaterMarker	29.7793629960256	-95.4697852508879	09/06/2018 03:03:12														1/1	3/3	1/1										
○	OrangeTest	Generic	Orange	29.7794764883013	-95.4681974518611																											
○	Yellow	Generic	Yellow	29.778990920936	-95.4742871281285																											
○	FXM 1100/2000	Alpha UPS	FXM 1100/2000	29.7791360110882	-95.4656569734183																											
○	IVC Camera	Camera	IVC Camera	29.7776930233819	-95.4691314512886																											
○	Camera2	Camera	IP Camera	0	0																											
○	Test2.8	Switch	Cisco	0	0																											
○	Srujana Camera	Camera	Axis	29.774069129541	-95.422072482224																											
○	Srujana BBS Web	Tesco UPS	BBS	29.7740322394973	-95.420272818209																											
○	Srujana BBS Web 2	Tesco UPS	BBS	29.7758523680698	-95.4213037380024	09/06/2018 03:03:40														0/1	0/1	0/1										
○	CCTV	Camera	IVC Camera	0	0	09/06/2018 03:03:12														1/1	3/3	1/1										
○	ChronomaxTelfire	Generic	Yellow	0	0																											
○	VideoCamTelfire	Generic	Orange	0	0	09/06/2018 03:03:12														1/1	3/3	1/1										
○	RedLightJumppTelfire	Generic	Red1	0	0	09/06/2018 03:03:12														1/1	3/3	1/1										
○	Green2	Generic	WaterMarker	29.7728294505614	-95.424032610389																											
○	Schuler St	Generic	Orange	29.7725397087574	-95.4219235820895																											
○	Knot St	Generic	Red1	29.7725660489558	-95.4211497659509																											
○	Birdsall St	Generic	Yellow	29.7725594639068	-95.420269739754																											

In addition, the user can right click on a device to edit, delete or Go to the device on the Map view.

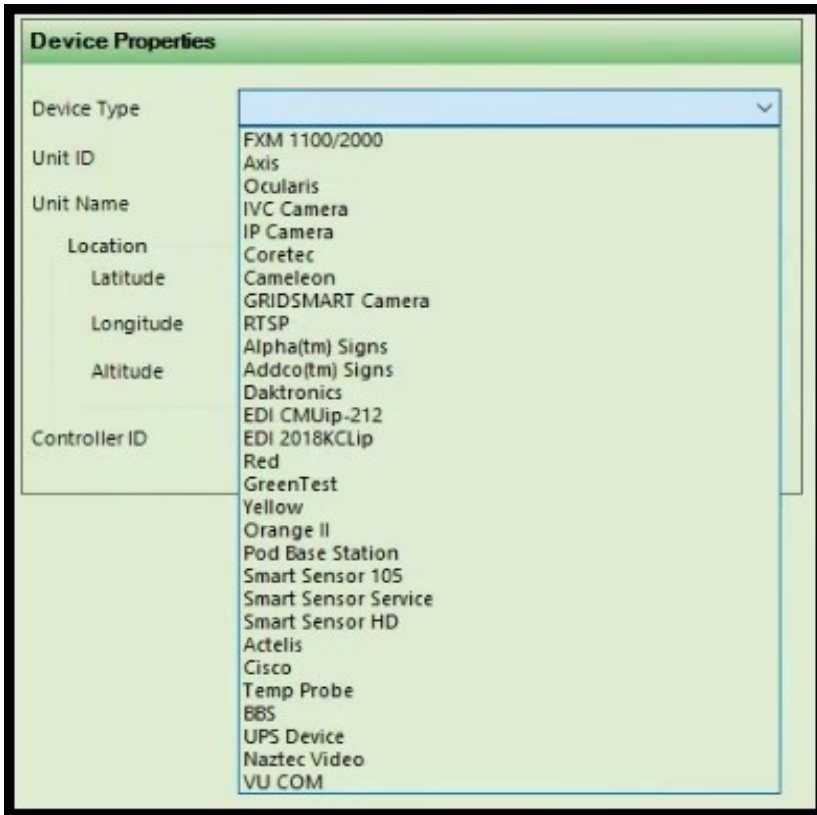


## 6.7.2 Create Device



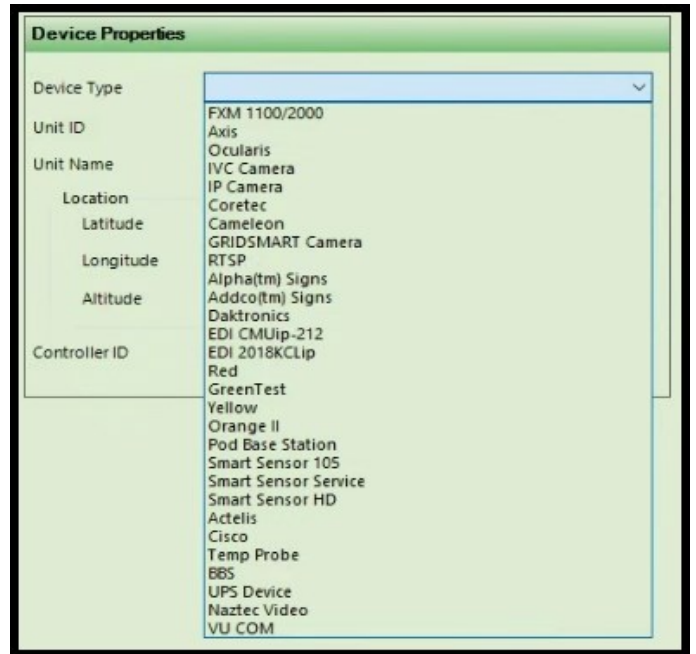
To create a *Device*, navigate to *Definitions...Devices...Create Device* from the *Action* pane. A basic setup screen like the ones shown below will appear in the main view pane.

The first box is to select a *Device Type*. A drop down will list the available *Device Types* in the system. These types are pre-defined during your **ATMS** installation. The standard default *Device Type* list will include:



- Battery Backup Units: Multilink, Alpha FXM 1100 or Tesco UPS (Requires BBS module activation)
- Actellis Switches
- IP Temperature Sensor
- GRIDSMART Detection Camera
- Cubic | Trafficware and Cubic | Trafficware “VU COM” Video Detection Cameras
- IV&C, Axis, RTSP or Ocularis Cameras (Requires CCTV module activation)
- Cameleon or Cortec Camera Control (Requires module activation)
- Alpha, Addco or Daktronics brand CMS signs (Requires CMS module activation)
- Wavetronix Smart Sensor 105 and HD (Requires module activation) Only works on version prior to 2.10
- Wavetronix Smart Sensor Service interface Only works on version prior to 2.10
- EDI CMUip212 or 2018KCLip Monitor interface
- Cisco Switches
- IP Camera or Generic IP device (Browser Required)
- Cubic | Trafficware Pod Base Station (Browser Required)

Depending on how the specific *Device* software operates, additional *Devices* can be added to the list. Consult your Cubic | Trafficware representative to add or modify the *Device Type* list. Each *Device Type* requires a specific *Unit ID*. The Controller ID number can be reused for a *Device Unit ID* number to denote the same intersection number. Next, assign the desired *Unit Name* to the device. This box supports a full ASCII format. The following available boxes will depend on the selected *Device Type* and the requirements to operate it.



The screenshot shows a 'Device Properties' dialog box with a list of device types and their corresponding unit IDs. The 'Device Type' is currently set to 'FXM 1100/2000'. The list includes:

Device Type	Unit ID
FXM 1100/2000	Axis
	Ocularis
	IVC Camera
	IP Camera
	Coretec
	Cameleon
	GRIDSMART Camera
	RTSP
	Alpha(tm) Signs
	Addco(tm) Signs
	Daktronics
	EDI CMUip-212
	EDI 2018KClip
	Red
	GreenTest
	Yellow
	Orange II
	Pod Base Station
	Smart Sensor 105
	Smart Sensor Service
	Smart Sensor HD
	Actelis
	Cisco
	Temp Probe
	BBS
	UPS Device
	Naztec Video
	VU COM

Devices that are available with the optional Web.Now module will have a selection box labeled “**Enable Web.Now**”. By checking this box, the device will be available to display on the Web.Now interface.

## Create CMS Signs

**Note: The CMS interface is an add-on module of ATMS.**

Select the CMS type in the *Device Type* box. **ATMS** interfaces to three brands of signs, **Alpha**, **Addco**, and **Daktronics**. The **Alpha** and **Addco** sign protocols are serial based and the setup screen is shown below. The **Daktronics** signs utilize IP communications over a network and the setup screen will offer an *IP* box instead one for a *DROP*. In the figure below, you will see a box for a *DROP* assignment. Serial-based Changeable Message Signs only need to send via a serial *DROP* in the **ATMS** Communications Server. This box routes the CMS sign to the corresponding *DROP* to the sign. The “server.ini” file will determine how a serial *DROP* communicates. An *IP*-based sign does not communicate by using a *DROP* on the Communications Server, but sends a direct TCP/IP stack over the network.

Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen.

The screenshot shows a 'New Device' dialog box with a 'Device Properties' section. The 'Device Type' is set to 'CMS - Alpha(tm) Signs'. The 'Unit ID' is '5' and 'Enable Web.Now' is unchecked. The 'Unit Name' is 'City Hall Main Parking'. The 'Location' section includes 'Latitude' (29.7727150279713), 'Longitude' (-95.4393508973694), and 'Altitude' (0). A 'DROP' field is empty. The dialog has 'Apply', 'OK', and 'Cancel' buttons at the bottom.

Device Properties	
Device Type	CMS - Alpha(tm) Signs
Unit ID	5
Unit Name	City Hall Main Parking
Location	
Latitude	29.7727150279713
Longitude	-95.4393508973694
Altitude	0
DROP	

## Create CISCO Switch

In the next figure, you will see an additional box for the URL of the **Cisco** switch. Typically, all that is needed for this value is the IP address. If entering only the IP address will not launch the *Device*, then enter the full URL (<http://192.168.50.51>).

Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen.

The screenshot shows a web-based configuration interface titled "New Device". The main content area is a "Device Properties" form with the following fields and controls:

- Device Type:** A dropdown menu currently set to "Cisco".
- Unit ID:** An empty text input field.
- Unit Name:** An empty text input field.
- Enable Web.Now:** An unchecked checkbox.
- Location:** A section containing:
  - Latitude:** A text input field containing "39.4659540280307".
  - Longitude:** A text input field containing "-87.4146827352933".
  - Altitude:** A text input field containing "0".
  - A magnifying glass icon to the right of the longitude field.
- Controller ID:** A dropdown menu.
- IP:** An empty text input field.



## Create “VU COM” Video Detector

**NOTE: The Camera interface is an add-on module of ATMS.**

Cubic | Trafficware has partnered with Traficon Video Detection Systems. Because of this, **ATMS** users will receive integration and features with Traficon that will be unique. As discussed earlier in this book, Cubic | Trafficware Video Detection Feeds utilizing the Cubic | Trafficware “VU COM” Ethernet communications card can be automatically initiated through the Hover Balloon. Instead of supplying only the camera identification with latitude and longitude coordinates as with other cameras, the video hover will provide a real-time, on-demand video stream within the Hover Balloon.

To create a Cubic | Trafficware video detection camera, select “VU COM” for the *Device Type*.

Assign the VU COM camera ID number under the *Unit ID*.

Assign a name for the intersection camera(s) under *Unit Name*. This name will be applicable to all cameras at this intersection location, as all cameras feed video through one module.

In the *ServerIP* box assign the IP address of the **ATMS** server.

In the *IP* box assign the IP address of the Cubic | Trafficware VU COM communications module.

In the *Cameras* box assign the number of cameras at the intersection.

Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen.

The screenshot shows a 'New Device' configuration window. The 'Device Properties' section is expanded, showing the following fields:

- Device Type:** Video Detector - VU COM (dropdown menu)
- Unit ID:** 255 (text input)
- Unit Name:** City Hall main Street Traficon Det Cameras (text input)
- Location:**
  - Latitude:** 29.7727150279713 (text input)
  - Longitude:** -95.4393508973694 (text input)
  - Altitude:** 0 (text input)
- SERVERIP:** 192.168.111.1 (text input)
- IP:** 192.168.111.105 (text input)
- CAMERAS:** 2 (text input)

At the bottom right of the window, there are three buttons: 'Apply', 'OK', and 'Cancel'.

## Create “CUBIC | TRAFFICWARE” Video Detector

**Note:** This interface is an add-on module of **ATMS**.

Cubic | Trafficware has created its own Video Detection device that can communicate with up to four IP cameras. Because of this, **ATMS** users will receive integration and features with this detector. Any Cubic | Trafficware Video Detection information and video feeds, utilizing the Cubic | Trafficware Video Camera Ethernet communications card can be automatically initiated through the Hover Balloon. Instead of supplying only the camera identification with latitude and longitude coordinates as with other cameras, the video hover will provide a real-time, on-demand video stream within the Hover Balloon.

To create a “Cubic | Trafficware” video detection Device select “VIDEO DETECTOR - CUBIC | TRAFFICWARE VIDEO” for the *Device Type*.

Assign a name for the intersection camera(s) under *Unit Name*. This name will be applicable to all cameras at this intersection location, as all cameras feed video through one module.

Assign the Controller ID that the “Cubic | Trafficware” Video Card is connected to via *CTRL\_ID*.

In the IP1 Box assign the IP address for the first camera connected to the “Cubic | Trafficware” Video Card.

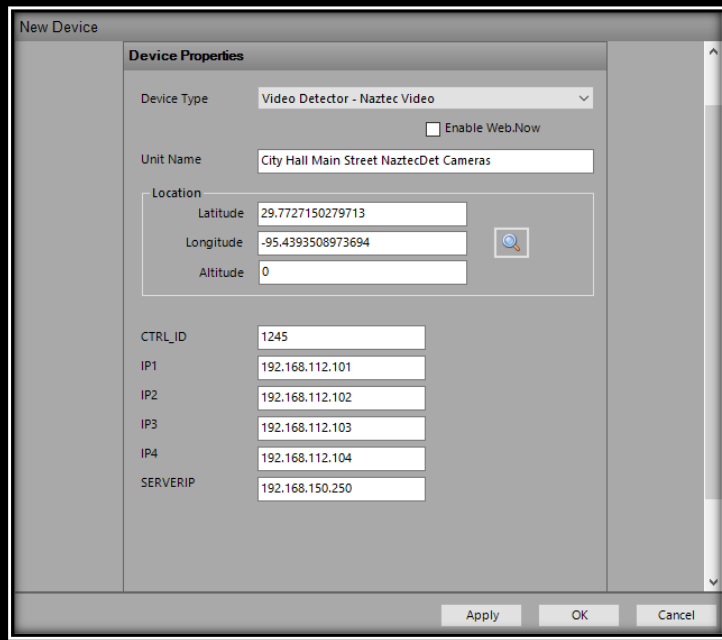
In the IP2 Box assign the IP address for the second camera connected to the “Cubic | Trafficware” Video Card (or “0” if the camera is not used).

In the IP3 Box assign the IP address for the third camera connected to the “Cubic | Trafficware” Video Card (or “0” if the camera is not used).

In the IP4 Box assign the IP address for the fourth camera connected to the “Cubic | Trafficware” Video Card (or “0” if the camera is not used).

In the *ServerIP* box, assign the IP address of the **ATMS** server.

Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen



The screenshot shows a 'New Device' configuration window with the following fields and values:

Field	Value
Device Type	Video Detector - Naztec Video
Unit Name	City Hall Main Street NaztecDet Cameras
Location	
Latitude	29.7727150279713
Longitude	-95.4393508973694
Altitude	0
CTRL_ID	1245
IP1	192.168.112.101
IP2	192.168.112.102
IP3	192.168.112.103
IP4	192.168.112.104
SERVERIP	192.168.150.250

Buttons at the bottom: Apply, OK, Cancel.

## Accessing the Cubic | Trafficware Video Detector via the GIS Map

As shown below, the “Cubic | Trafficware” Video detector device can be placed on the GIS Map by accessing *Definitions->Device and Event Locations->Locations* and selecting the Cubic | Trafficware Video detector that you just created.

**Location Editor : Message Sign**

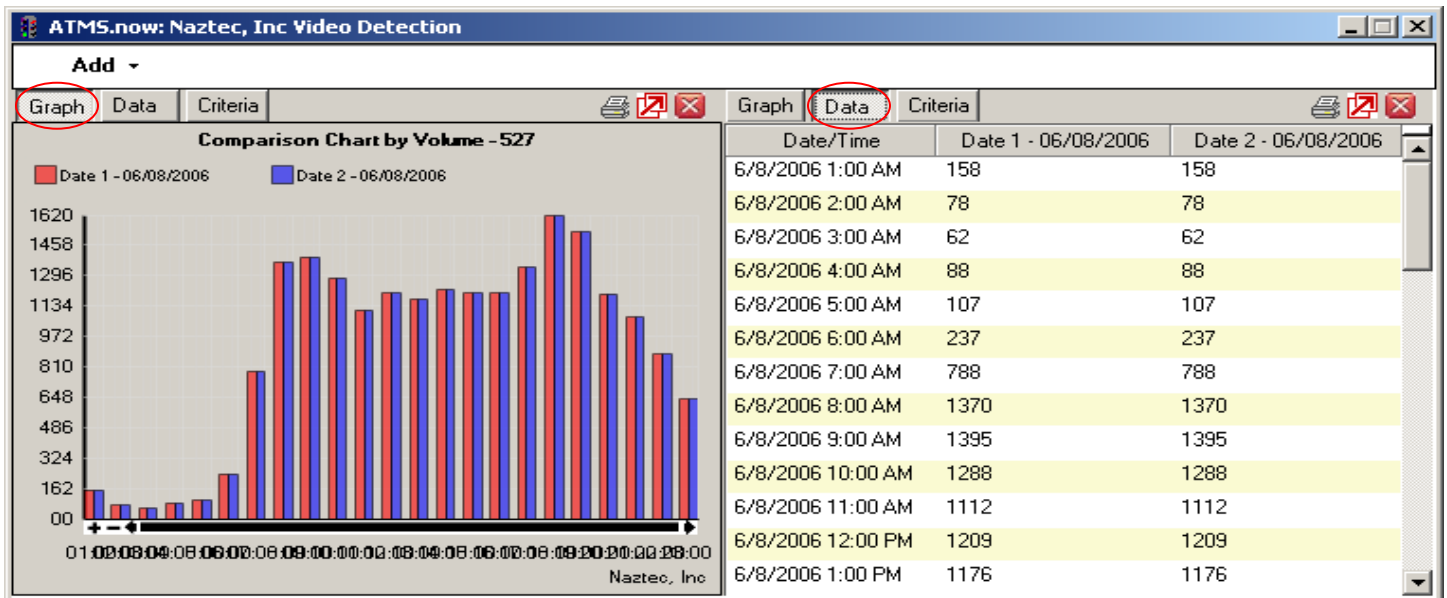
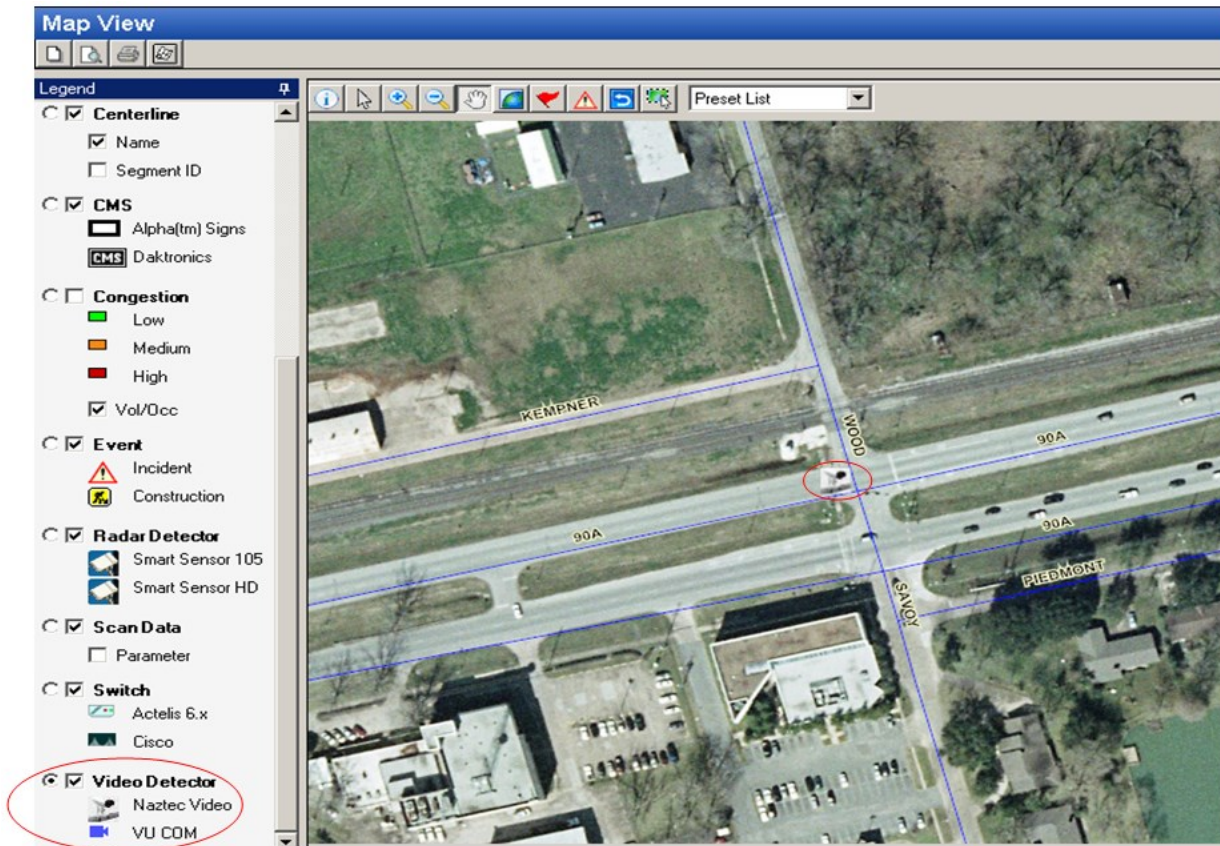
ID	Name	Type	X_COORD	Y_COORD
11	CMS 1	CMS - Daktronics	3037354.26157394	13788482.5655243
12	CMS 2	CMS - Daktronics		
14	Temp Probe	Temp Probe - Ethernet	3037357.1764224	13788253.9694735
15	DAKTRONICS	CMS - Daktronics	3037354.26157394	13788334.3612466
16	Wavetronix Test	Radar Detector - Smart Sensor	3037294.25247992	13788387.0965111
17	Wavetronix HD Test	Radar Detector - Smart Sensor	3037474.27976199	13788358.0011928
18	Naztec Video	Video Detector - Naztec Video	3039102.34616198	13788822.7999922



**Location Editor : Message Sign**

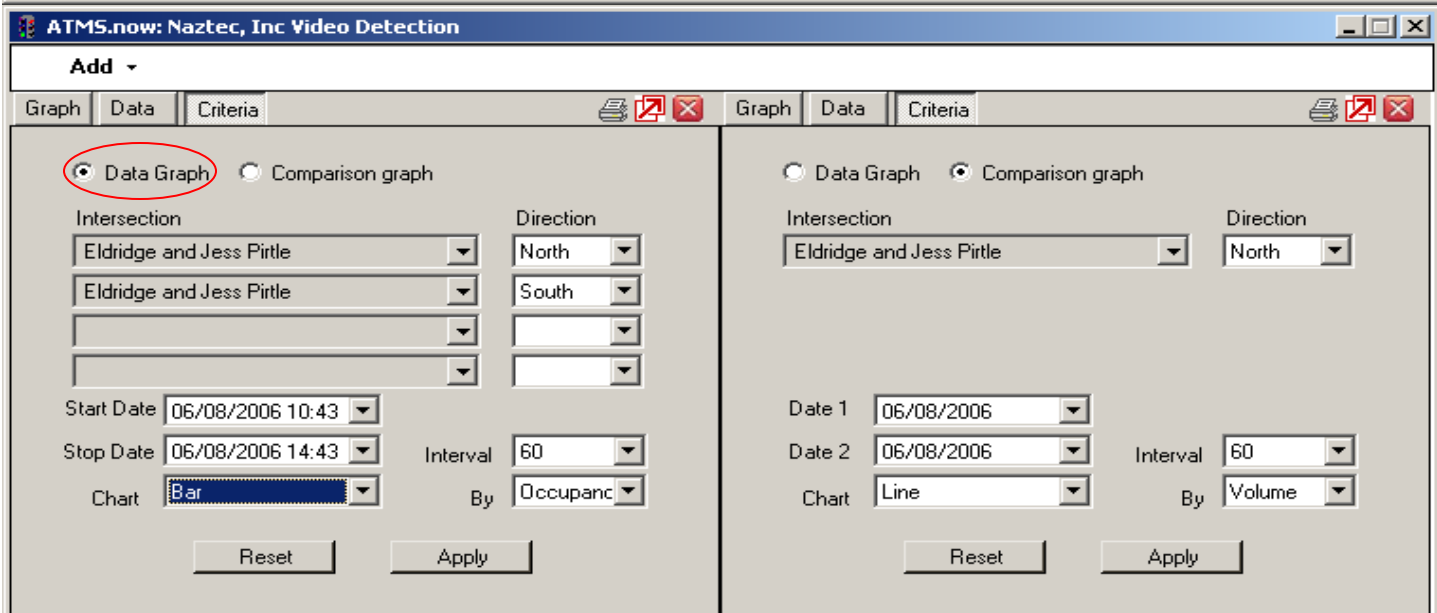
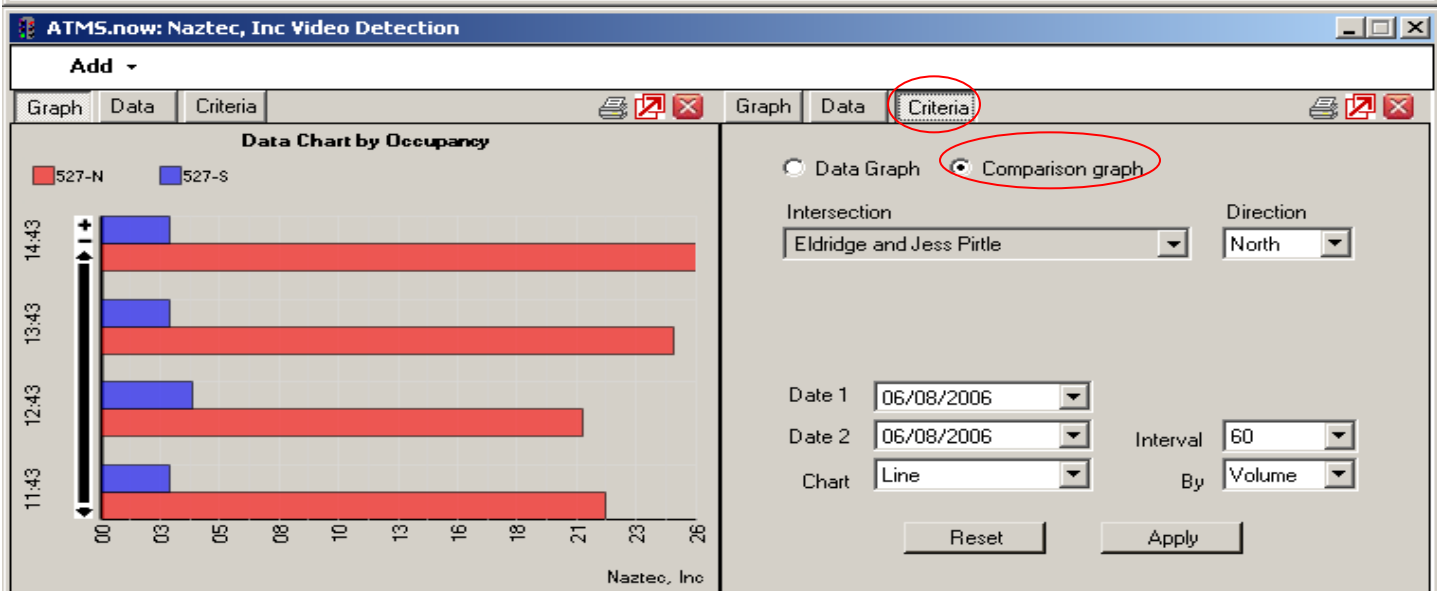
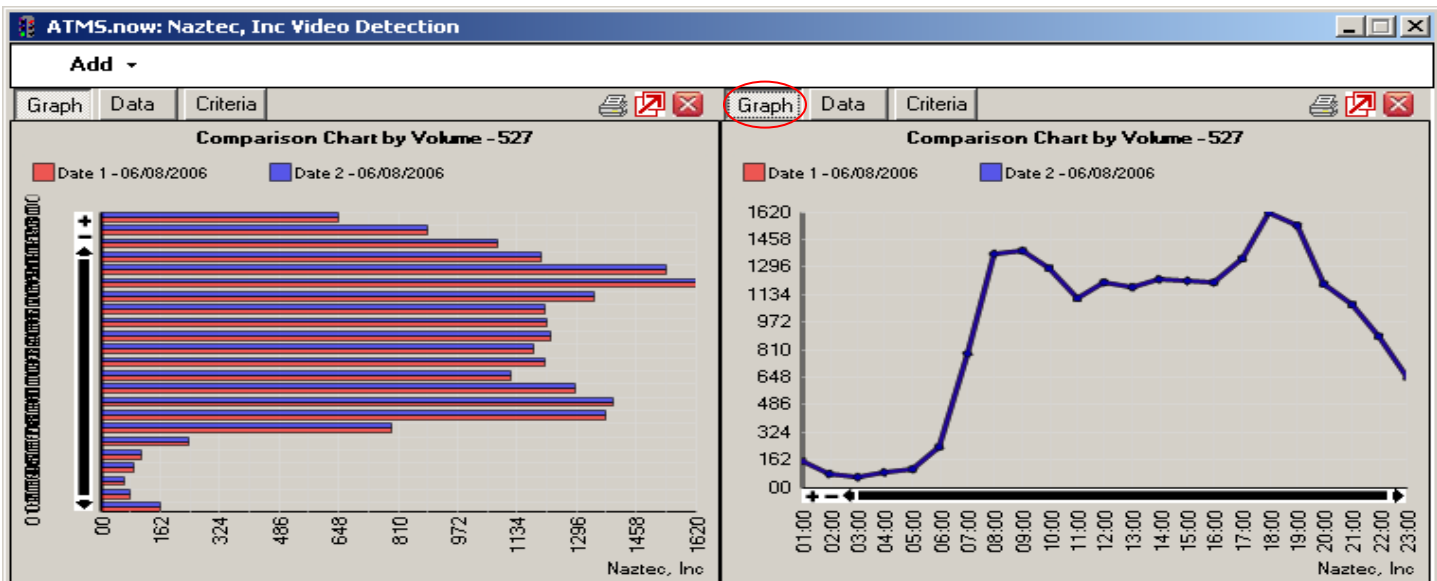
ID	Name	Type	X_COORD	Y_COORD
11	CMS 1	CMS - Daktronics	3037354.26157394	13788482.5655243
12	CMS 2	CMS - Daktronics		
14	Temp Probe	Temp Probe - Ethernet	3037357.1764224	13788253.9694735
15	DAKTRONICS	CMS - Daktronics	3037354.26157394	13788334.3612466
16	Wavetronix Test	Radar Detector - Smart Sensor	3037294.25247992	13788387.0965111
17	Wavetronix HD Test	Radar Detector - Smart Sensor	3037474.27976199	13788358.0011928
18	Naztec Video	Video Detector - Naztec Video	3039102.34616198	13788822.7999922

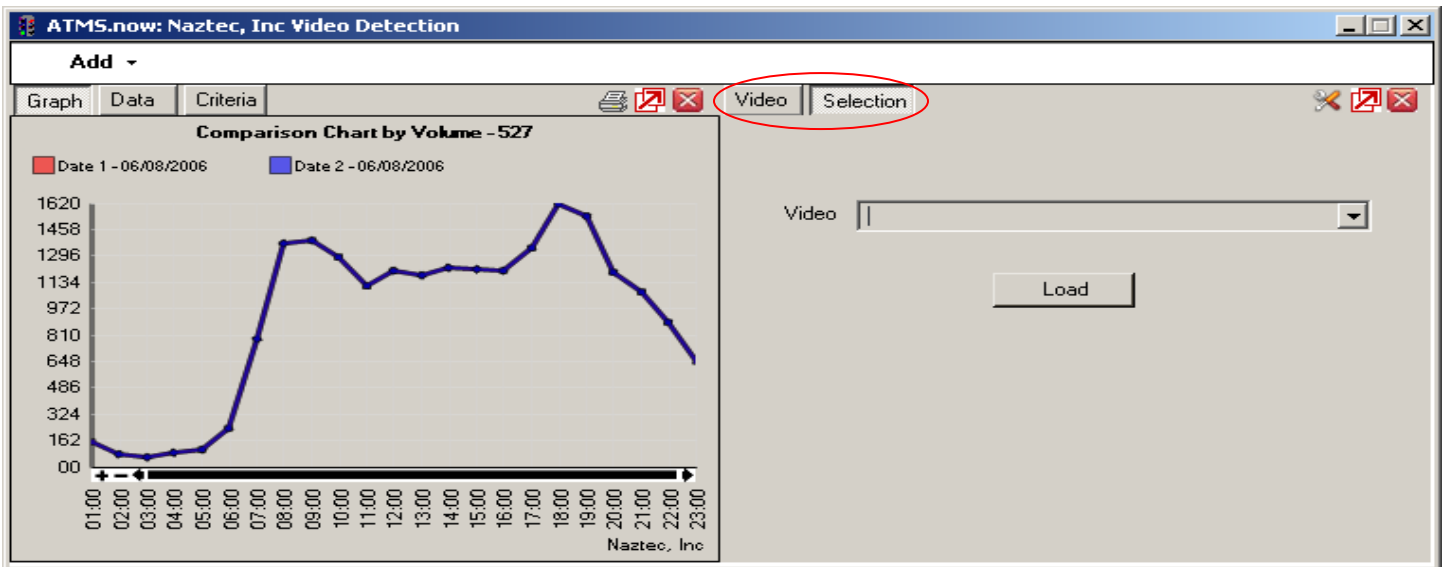
The GIS map displays a network of streets including Wood, Kempner, 90A, and Piedmont. A camera icon is positioned at the intersection of Wood and 90A, corresponding to the location defined in the table above.

Once the detectors are placed on the GIS map, you can select the “Cubic | Trafficware” video detector to be displayed on the map. In addition, you can turn on the radio button to gather video detection information in real-time, as shown below.

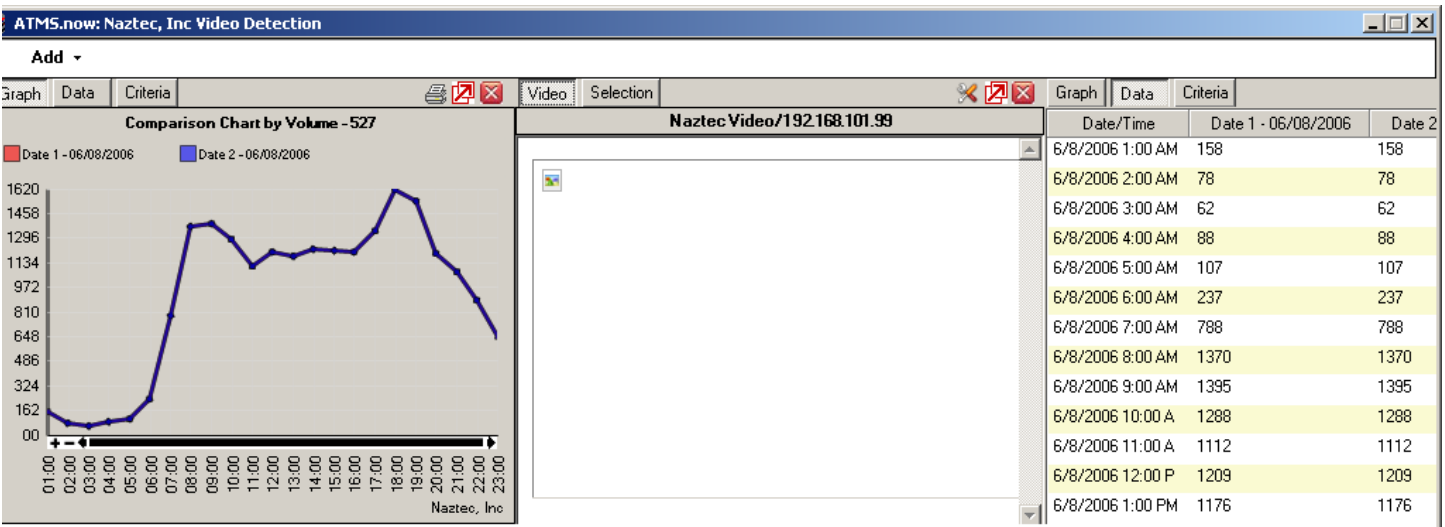


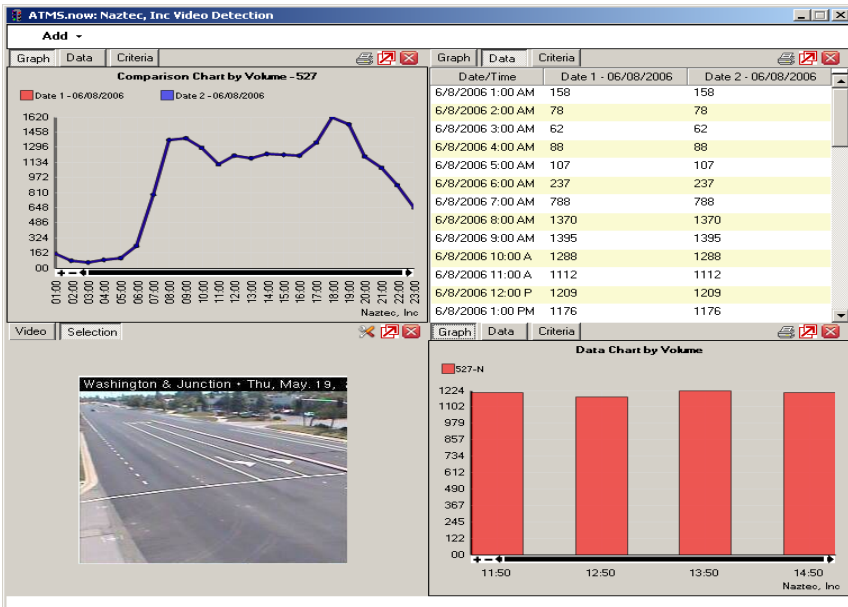
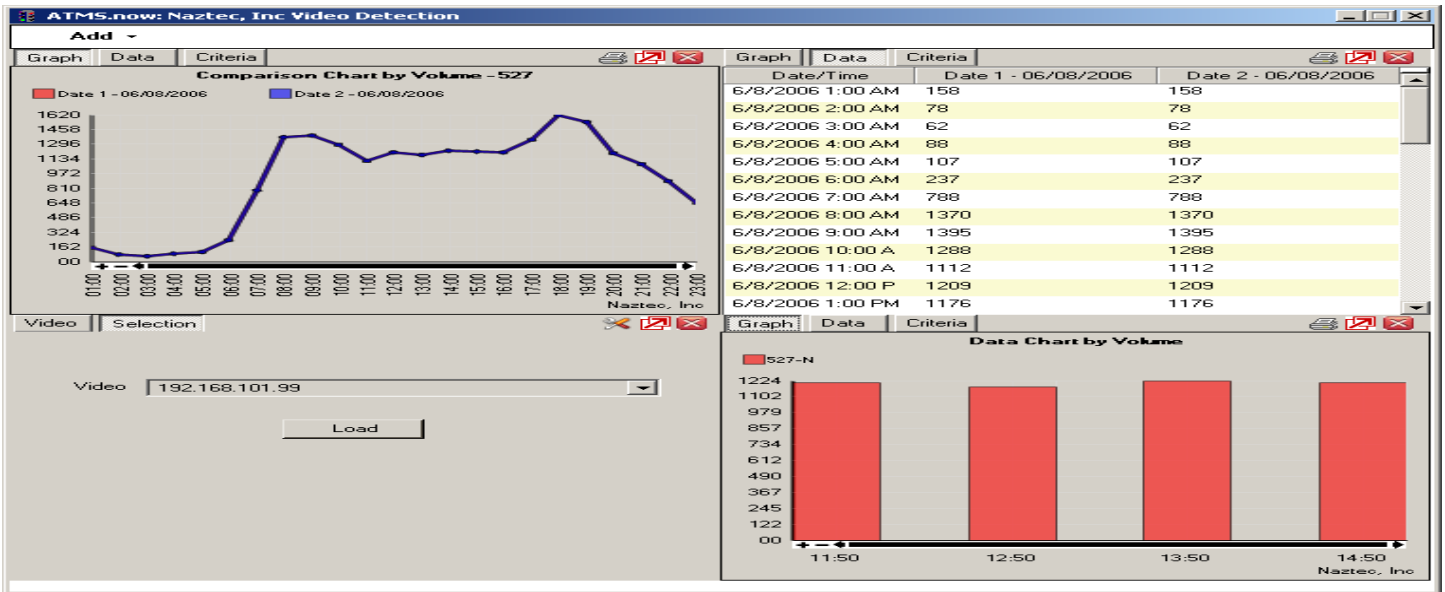
The figure above shows two windows created by the user - one which shows the graphical video detector data and the other the tabular detector data. You can add windows via the menu selection “Add”. Once a window is added you can save it to its own window by selecting the Create Window icon . You can close any window by selecting the Close Window icon .





Server	Name	Chan...	IP Address
localhost	Naztec Video	1	192.168.101.99





## Create Cameras

**Note:** This interface is an add-on module of **ATMS**.

**ATMS** provided interfaces to Cameras using several methods:

- Standard IP or URL-based launching
- Interface through Camera Server programs such as IV&C or Cameleon
- Interface through Video Encoders

## IP Camera or IP Device

Defining a standard IP-based Camera will only require the IP address or URL to be entered. Name and Unit ID are optional but should be included. Select the “*Camera – IP Camera*” for the *Device Type*. Enter the *Name* and IP address or URL to launch the camera.

**NOTE:** This selection can also be used for any accessible IP device that will launch its own browser.

The screenshot displays the 'New Device' configuration window. The 'Device Properties' section is highlighted and contains the following fields:

- Device Type:** A dropdown menu set to 'IP Camera'.
- Unit ID:** A text box containing '331'.
- Unit Name:** A text box containing 'Traffic Surveillance'.
- Location:** A sub-section containing:
  - Latitude:** A text box containing '39.4659540280307'.
  - Longitude:** A text box containing '-87.4146827352933'.
  - Altitude:** A text box containing '0'.
- Controller ID:** A dropdown menu.
- IP:** A text box containing '192.125.123.255'.

There is also an unchecked checkbox labeled 'Enable Web.Now' next to the Unit ID field and a magnifying glass icon next to the Location fields.



## IVC Camera

When defining a camera that is operating and controlled through the “Relay Server” software by IV&C (discussed in sections 5.4 and 5.5), select “*Camera – IVC Camera*” for the *Device Type*. Additional boxes for the *PORT* and *FEED* will appear. The *PORT* number needs to match the video broadcast port# as assigned for that camera in the IV&C Relay Server Software. The *FEED* number is the video feed# as assigned for that video feed in the IV&C Relay Server Software.

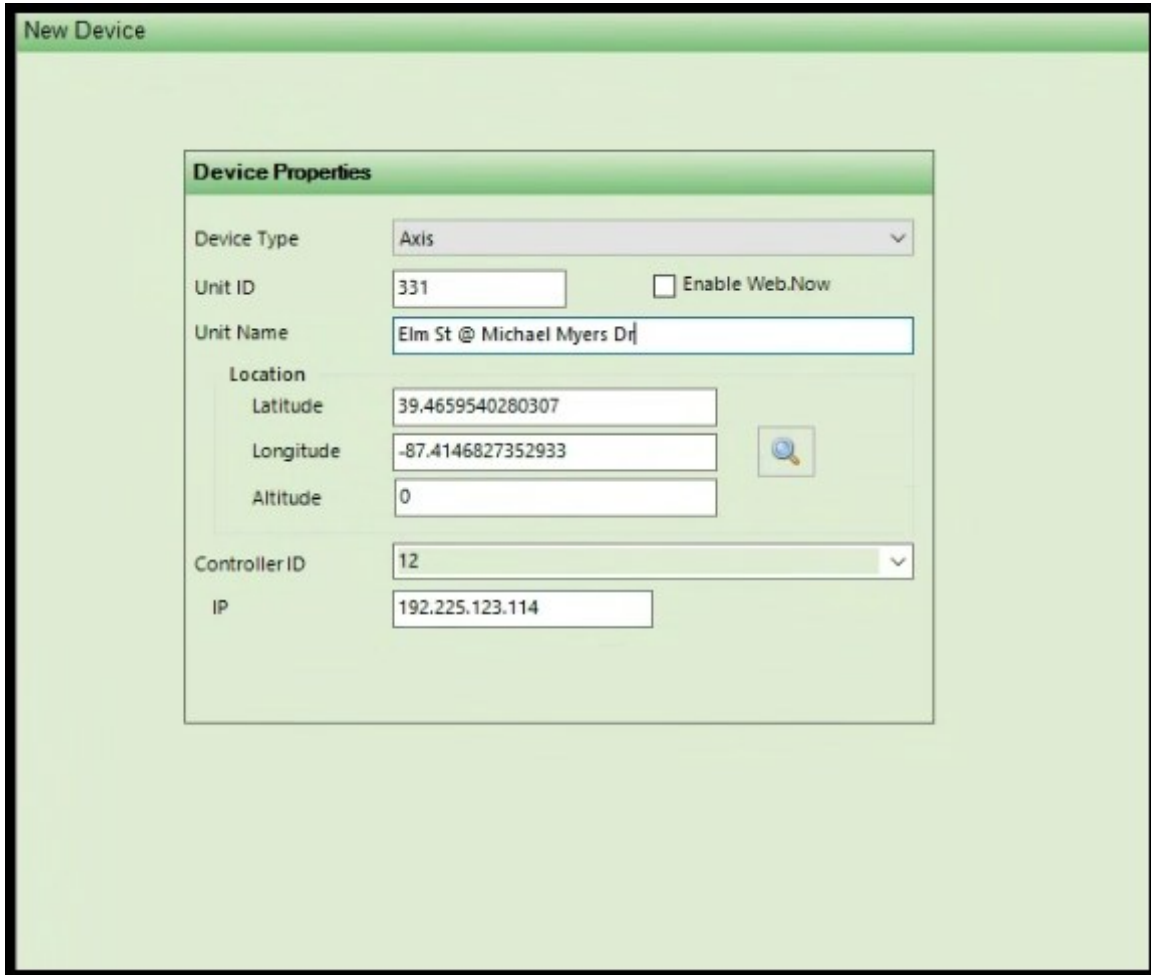
Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen.

The screenshot shows a 'New Device' configuration window with a 'Device Properties' section. The fields are as follows:

Field	Value
Device Type	IVC Camera
Unit ID	331
Unit Name	City Hall Main Street
Location	
Latitude	39.4659540280307
Longitude	-87.4146827352933
Altitude	0
Controller ID	
IP	192.245.223.236
PORT	5200
FEED	2
RELAY_IP	192.112.221.233
RELAY_PORT	5199
RELAY_FEED	1

## Axis Camera

Defining a Axis camera is similar to defining a standard IP-based Camera. It only requires the IP address or URL.. Select the “*Camera – Axis*” for the *Device Type*. Enter the *Name* and IP address or URL to launch the camera.



The screenshot shows a 'New Device' configuration window with a 'Device Properties' section. The fields are as follows:

Field	Value
Device Type	Axis
Unit ID	331
Unit Name	Elm St @ Michael Myers Dr
Location	
Latitude	39.4659540280307
Longitude	-87.4146827352933
Altitude	0
Controller ID	12
IP	192.225.123.114

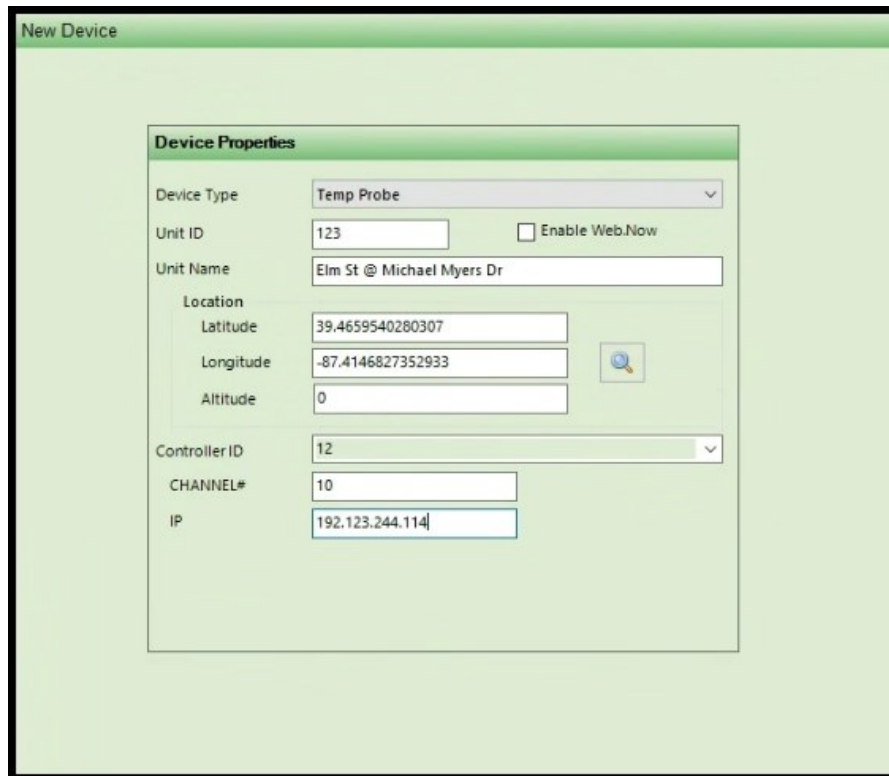
## Create Temperature Probe

**ATMS** provides interface to Cubic | Trafficware brand IP temperature sensors. Each sensor has dual thermocouple sensors and can provide two temperature reading. A common use for this is to have one sensor provide cabinet temperature while the other is buried in the road surface.

Assign a *Unit ID* and *Unit Name* for the Temp Probe.

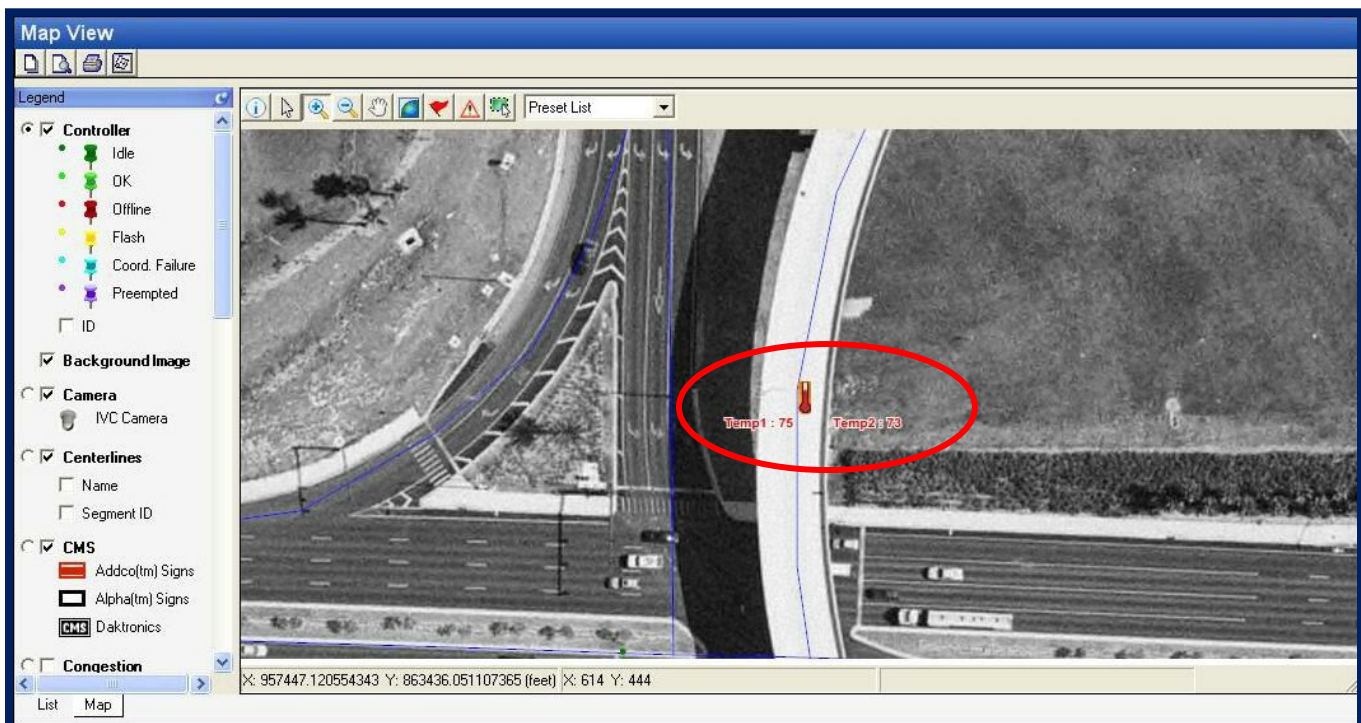
The *CHANNEL#* value sets the number of probes that are to be collected and displayed from the unit.

The *IP* value is the address of the *Temperature Sensor* module.



For **ATMS** to collect information from the Temperature Sensor units, all units have to be programmed for periodic data collection under “IP Temp Check” in the *Scheduler*. This function will collect the data from each sensor unit and its probes and make it available for reports and for the device’s “hover”.

Shown below is a sample of the Temperature Probe “hover” on the GIS map:

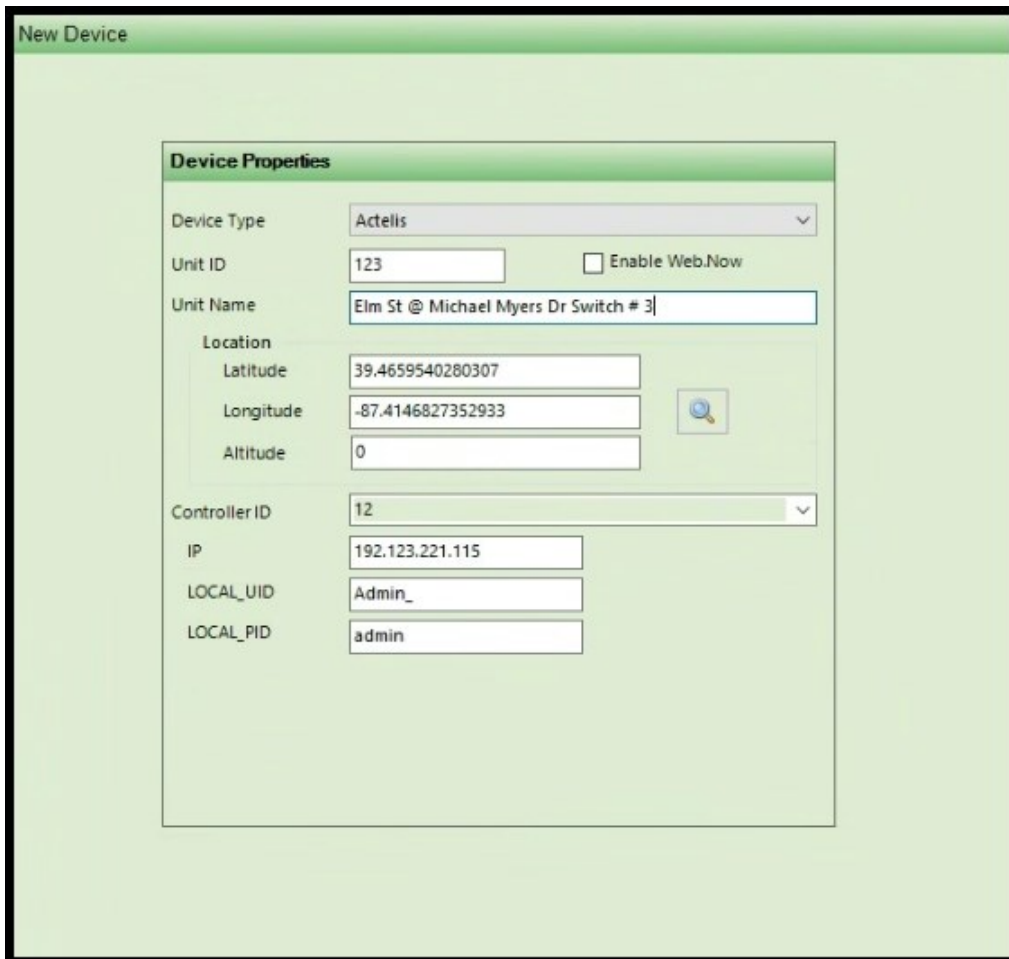


## Create ACTELIS Switch

**ATMS** provides a direct “point & click” interface with **Actelis** “MetaASSIST” control software. This is performed at the *GIS map* interface and provides specific selection and login to the selected switch icon on the *GIS map*.

After selecting an **Actelis** switch in the *Device Type* box, additional boxes for the unit IP#, User ID (LOCAL\_UID) and Password (LOCAL\_PID) will appear. The *IP* box will launch “MetaASSIST” to the specific IP address of the selected switch.

The *LOCAL\_UID* and *LOCAL\_PID* are optional boxes. If they are left blank, an administrator assigned User/Password combination will be required to log in. If you choose to utilize a standard login for all **Actelis** switches, you can fill in a User/Password value in the *LOCAL\_UID* and *LOCAL\_PID* boxes. **Actelis** default is User ID = “admin” and Password = “admin”.



The screenshot shows a web form titled "New Device" with a "Device Properties" section. The form contains the following fields and values:

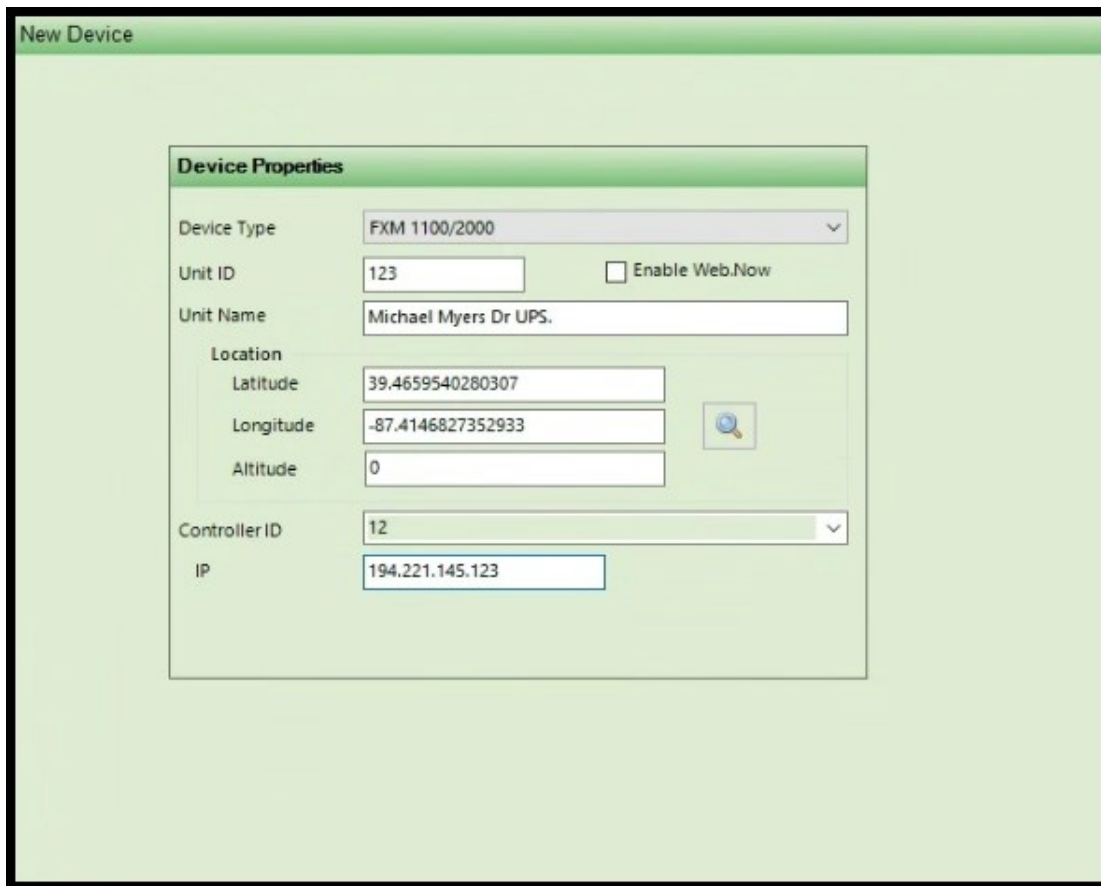
Field	Value
Device Type	Actelis
Unit ID	123
Unit Name	Elm St @ Michael Myers Dr Switch # 3
Location	
Latitude	39.4659540280307
Longitude	-87.4146827352933
Altitude	0
Controller ID	12
IP	192.123.221.115
LOCAL_UID	Admin_
LOCAL_PID	admin

## Create Alpha FXM1100 Battery Backup Device

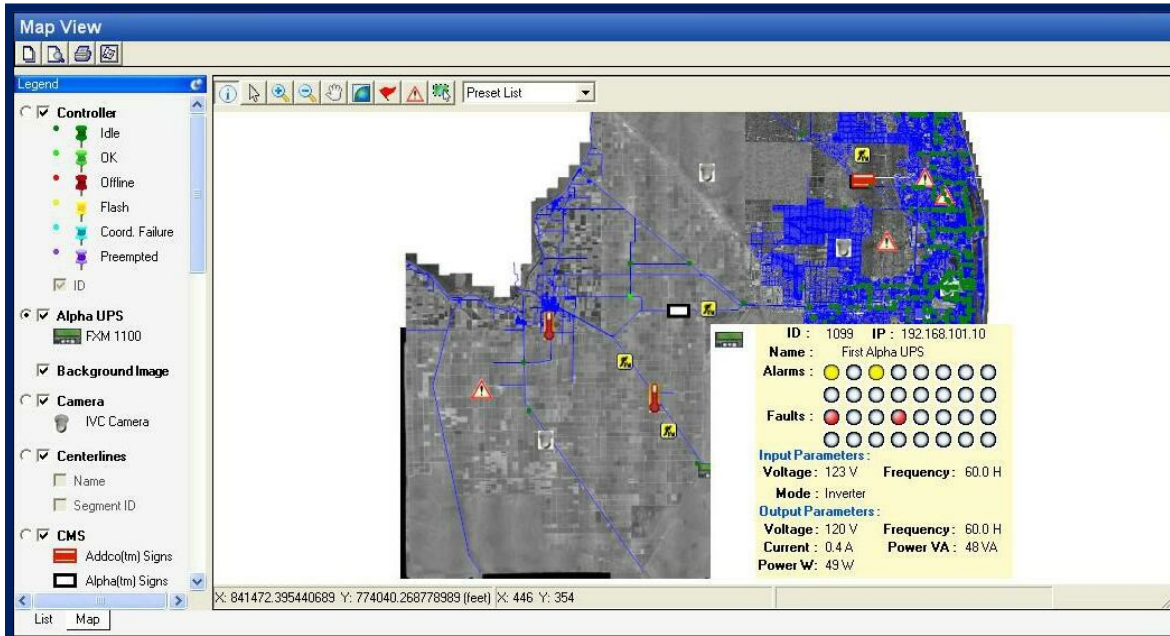
This interface is an add-on module of **ATMS**.

**ATMS** provides a direct “point & click” interface with **Alpha** model “FXM1100” battery backup units that are equipped with the SNMP interface option. This **Alpha** integration provides *GIS map* interface for real-time “hover” status and point-click selection to login to the selected icon on the *GIS map*.

Defining an **Alpha** device will only require the IP address or URL, identical to the Cisco Switch setup. Select the “Alpha – FXM” for the *Device Type*. Enter the *Name* and IP address or URL for the unit.



Shown below is a sample of the **Alpha** interface on the GIS map:



For the Alpha interface to work properly, all monitored Alpha units have to be programmed for continuous polling under “Alpha Status” in the Scheduler. This can be done as individual Devices or by Device Flex Group. Programming the Scheduler is discussed later in this Chapter.

## Create Wavetronix Smart Sensor 105 or Smart Sensor HD

The **Wavetronix** Smart Sensor 105 or Smart Sensor HD interface is an add-on module of **ATMS**.

**ATMS** provides a direct “point & click” interface with **Wavetronix** model “Smart Sensor HD” radar counting units that are equipped with the SNMP interface option. This **Wavetronix** integration provides *GIS map* interface for real-time “hover” status providing Volume, Occupancy and Speed information to each corresponding icon on the *GIS map*. In **ATMS**, the **Wavetronix** units are also referred to as *External Detectors*. This terminology is used for the standard report in the *Reports Module* and for utilizing these units for *Congestion Level* on the GIS Map. To use these detectors to report congestion, navigate to the *Congestion* section of the *Definitions Module*.

Defining a **Wavetronix** device will only require the IP address or URL, similar to the Alpha BBS setup. Select the “*Wavetronix – Smart Sensor HD*” for the *Device Type*. Enter the *Name* for the unit.

The *ID* needs to match the ID# that is programmed in the Smart Sensor unit.

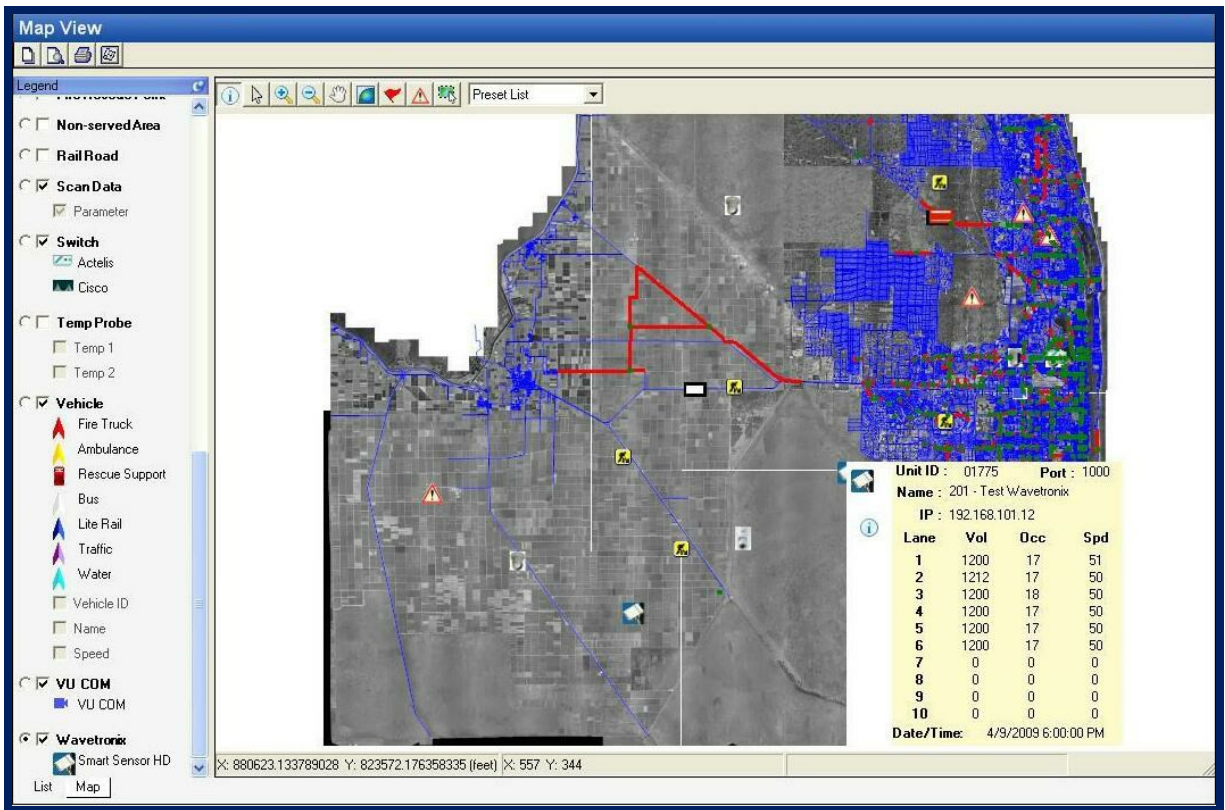
Enter the *IP* address for the unit. Each **Wavetronix** device will have a distinct IP address.

The *PORT* value should be set to the default “10001” value.

The screenshot shows a web-based configuration form for a new device. The form is titled "New Device" and contains a "Device Properties" section. The "Device Type" is set to "Smart Sensor HD". The "Unit ID" is 123, and there is an unchecked checkbox for "Enable Web.Now". The "Unit Name" is "Wavetronics Smart Sensor HD". The "Location" section includes "Latitude" (39.4659540280307), "Longitude" (-87.4146827352933), and "Altitude" (0). The "Controller ID" is 12. The "ID" is 12, "IP" is 192.221.233.244, and "PORT" is 5100.

For **ATMS** to collect information from the **Wavetronix** units, all units have to be programmed for periodic data collection under “Smart Sensor HD” in the *Scheduler*. This function will collect the SQL data from each count station and make it available for reports and for the device’s “hover”.

Shown below is a sample of the **Wavetronix** “hover” on the GIS map:



Only works on version prior to 2.10

## GRIDSMART Device

GRIDSMART cameras can be created and added to the Map display for real-time viewing of video data. Simply edit the Device properties as shown below from the List view or via the Map view device interface.

Device Details : GRIDSMART Camera

**Device Properties**

Device Type: Camera - GRIDSMART Camera

Unit ID: 209  Enable Web.Now

Unit Name: GRIDSMART Camera

Location

Latitude: 37.6937923648327

Longitude: -97.2771740658607

Altitude: 0

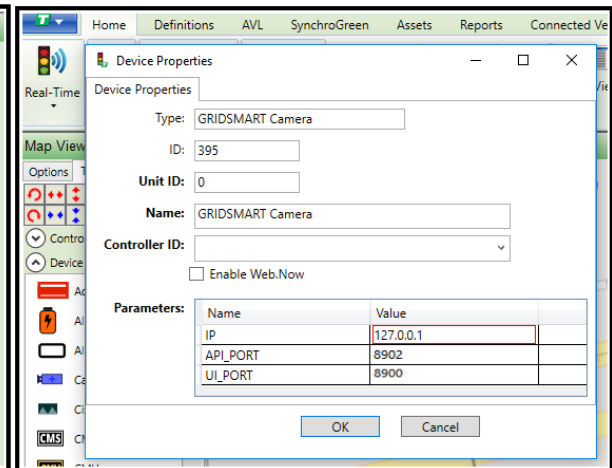
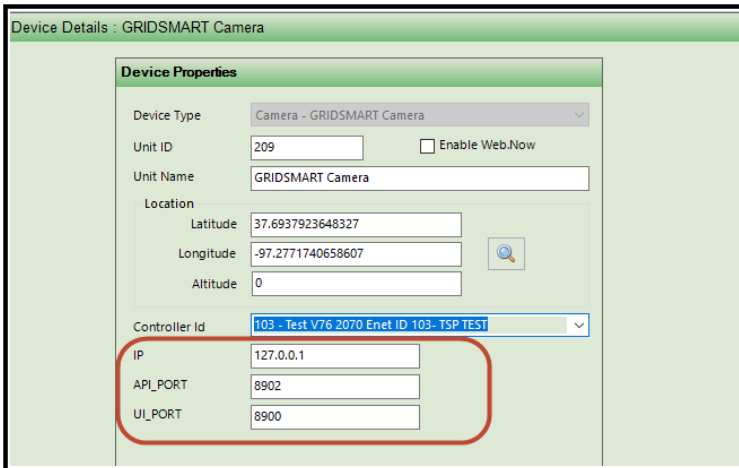
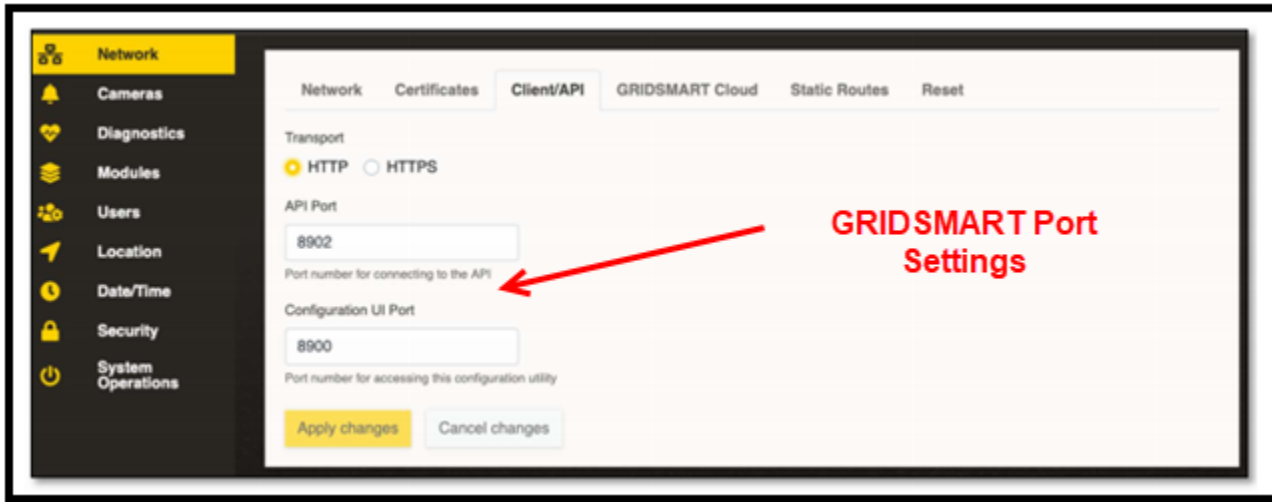
Controller Id: 103 - Test V76 2070 Enet ID 103- TSP TEST

IP: 127.0.0.1

API\_PORT: 8902

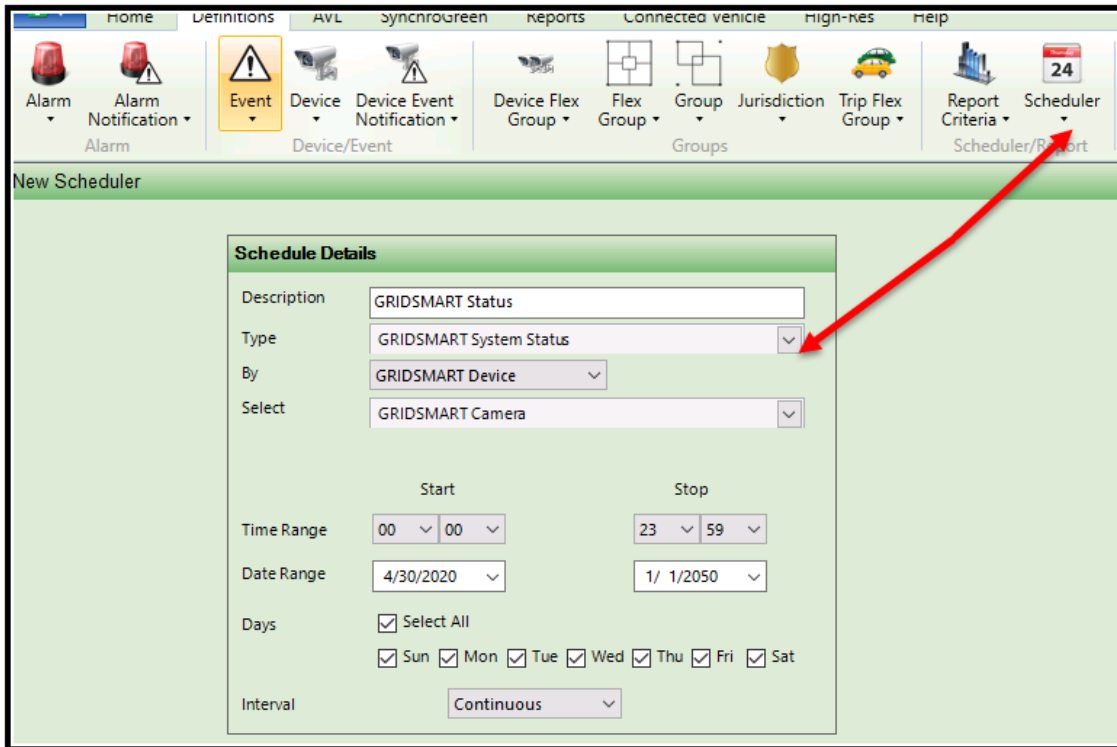
UI\_PORT: 8900

As of ATMS 2.10.1 an option was added when creating the GRIDSMART Camera. The user needs to specify two port numbers, one for API to receive data from the GRIDSMART camera for the integration and the other for accessing the UI of the Device Manager in a web browser.









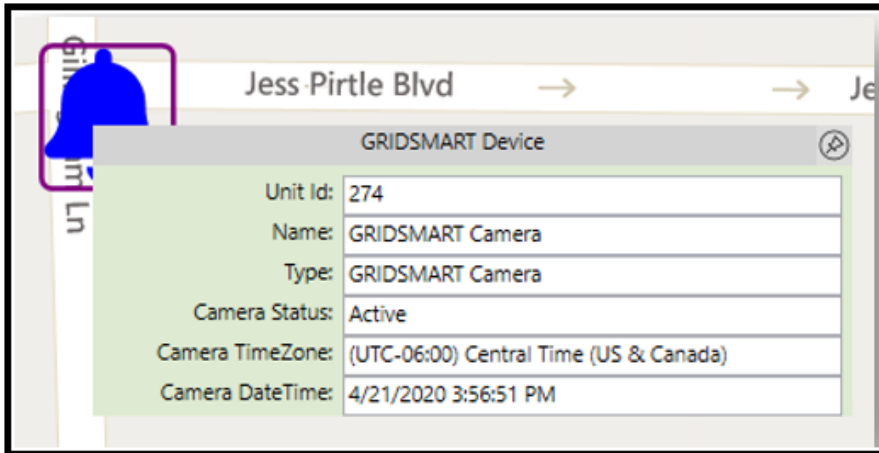
Once the camera is connected, the user can get GRIDSMART camera system status via setting up the scheduler.



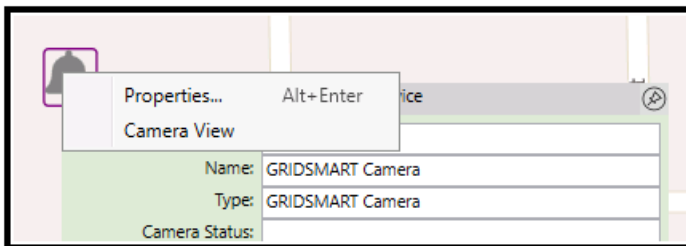
A Fisheye camera Icon will be displayed on the Map view. It will display various colors based on the status,

	Active
	Unknown
	Missing
	Not configured

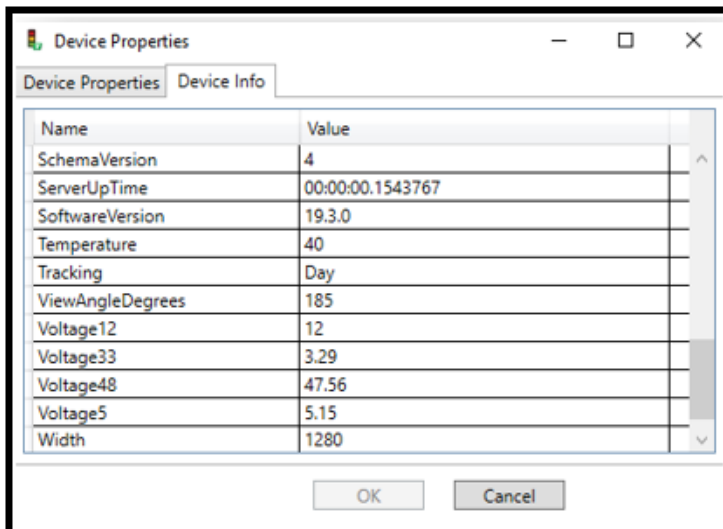
Hovering over it will display real time information as shown below



Right clicking on the Icon will bring up a drop-down list.



Selecting Properties will display Real-Time status info and selecting Camera View will bring up live video from the camera.



As of ATMS 2.10.1, support has been added to access the Device Manager as well as HTTPS support when communicating to the GRIDS MART video processor.

ATMS 2.14 introduced the support of the GRIDS MART camera Approach View processing and related tilt and zoom options.

# Pod Base Station

Cubic | Trafficware has developed a magnetometer detection product called the POD. The interface to these detectors is via a cabinet device called the POD Base Station. The user can create a device called the POD via the List view Device definition or the Map view.

### Device Properties

Device Type: POD - Pod Base Station

Unit ID: 1111  Enable Web.Now

Unit Name: Pod Base Station

Location

Latitude: 37.6936522868256

Longitude: -97.2782523138847

Altitude: 0

IP: 127.0.0.1

### Map View

Options
Toolbox
Visibility

- Core Tec
- GRIDSMArt Camera
- IP Camera
- IVC Camera
- Modem
- MultiLink EP1100
- MultiLink EP2200
- Ocularis Camera
- Pod Basestation
- Radar Detector
- Tesco UPS



Once the Pod Base Station is placed on the Map the User can double-click on the icon and bring up the Pod Connect interface as shown below:

CUBIC | Trafficware
POD Connect (v5.1.2)

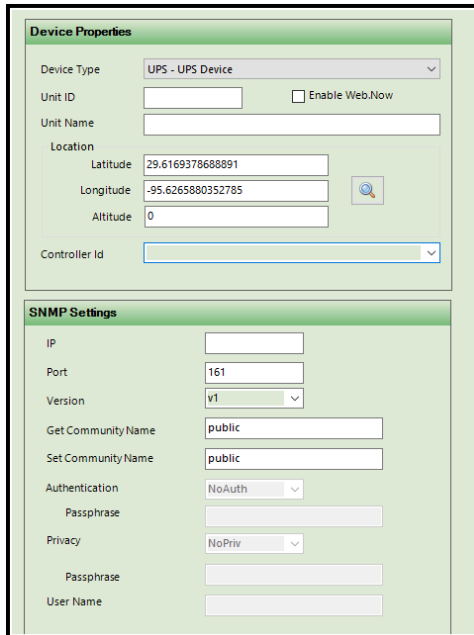
- UNASSIGNED
- Unassigned
- WB
- wbpod1 (10007C08)
- wbpod4 (10007C0C)
- wbpod2 (10007C0D)
- wbpod3 (10007C04)
- hSBL
- hblpod1 (10007C03)
- hblpod2 (10007C09)
- hblpod7 (10007C0A)
- hblpod1 (10007C78)
- SB
- sblpod1 (10007C15)
- sblpod2 (10007C10)
- sblpod3 (10007C54)
- sblpod1 (10007CA1)
- EB
- ebpod1 (10007D14)

Unit ID	Access Point	RSSI	Color	Alarm	Radio	Status
wbpod2	11	2.00%	Normal	Off	Normal	4/16/2025, 9:05:26 AM
wbpod2	9	0.00%	Normal	Off	NoComm	4/16/2025, 9:05:24 AM
wbpod1	9	12.00%	Normal	Off	Normal	4/16/2025, 9:05:24 AM
wbpod2	11	1.00%	Normal	Off	Normal	4/16/2025, 9:05:23 AM
wbpod1	11	0.00%	Normal	On	Normal	4/16/2025, 9:05:24 AM
wbpod2	11	2.00%	Normal	Off	Normal	4/16/2025, 9:05:24 AM
wbpod1	9	16.00%	Normal	Off	Normal	4/16/2025, 9:04:53 AM
wbpod1	9	15.00%	Normal	Off	RedPin	4/16/2025, 9:04:53 AM
wbpod3	11	5.00%	Normal	Off	Normal	4/16/2025, 9:05:24 AM
wbpod2	12	1.00%	Normal	On	Normal	4/16/2025, 9:05:24 AM

## UPS Devices

Cubic | Trafficware has added a generic UPS device as of ATMS 2.10.1 in addition to the Alpha UPS Module.

This device type supports any device using the standard NTCIP UPS.MIB (RFC 1628). Both SNMP v1 and SNMP v2 are supported. The Multilink EP2200 is such a device. It also supports the proprietary EP650-EP1100 MIB for the Multilink EP1100 devices. The Bing map will have a new icon for the ups devices as shown on the right.



The screenshot shows a configuration window with two main sections: "Device Properties" and "SNMP Settings".

**Device Properties:**

- Device Type: UPS - UPS Device (dropdown)
- Unit ID: [text input]  Enable Web.Nov
- Unit Name: [text input]
- Location:
  - Latitude: 29.6169378688891
  - Longitude: -95.6265880352785
  - Altitude: 0
- Controller Id: [dropdown]

**SNMP Settings:**

- IP: [text input]
- Port: 161
- Version: v1 (dropdown)
- Get Community Name: public
- Set Community Name: public
- Authentication: NoAuth (dropdown)
- Passphrase: [text input]
- Privacy: NoPriv (dropdown)
- Passphrase: [text input]
- User Name: [text input]

The user can choose the UPS – UPS device type and enter the SNMP information as shown below.

Assign a name for the intersection camera(s) under *Unit Name*. This name will be applicable to all cameras at this intersection location, as all cameras feed video through one module.

Assign the UPS device a Unit ID

Assign the Controller that the UPS is connected to via Controller ID

In the IP1 Box assign the IP address UPS Unit

In the Port box, assign the comm port used by the UPS.

Set the Community name which is used by the com to logint the device.

Set the Authentication, User Name, Passphrase (Password) and Privacy setting as per the UPS manufacturer's settings.

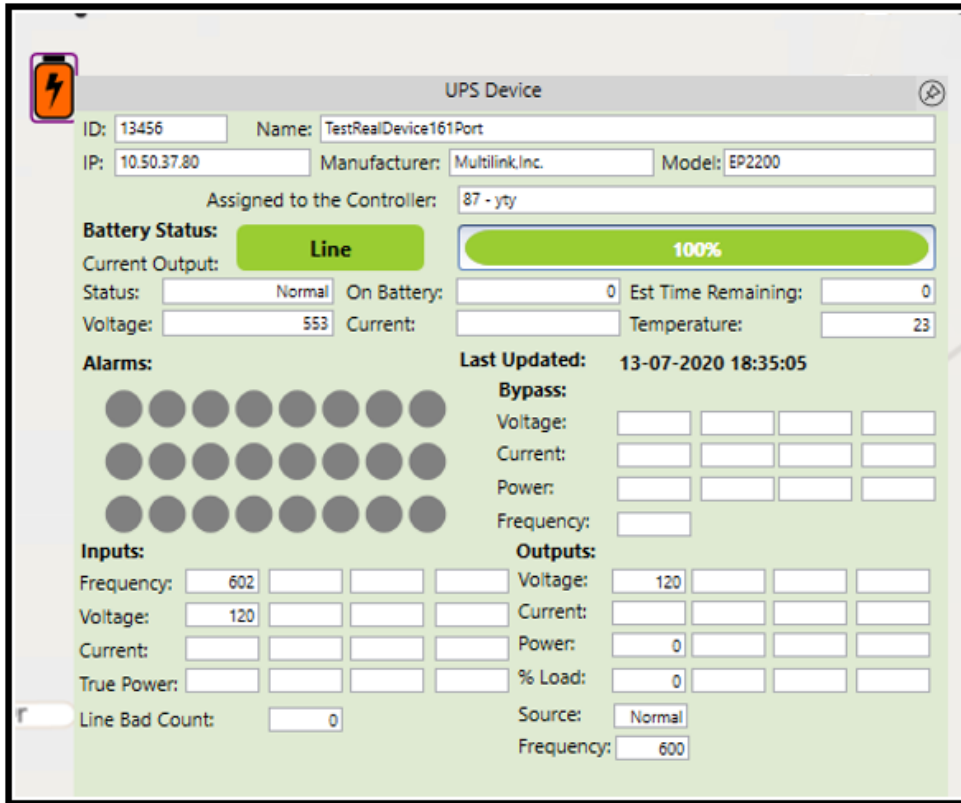
Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen

In addition, a new schedule has been introduced to poll the UPS device using the UPS MIB's: **SNMP UPS Device Status**.

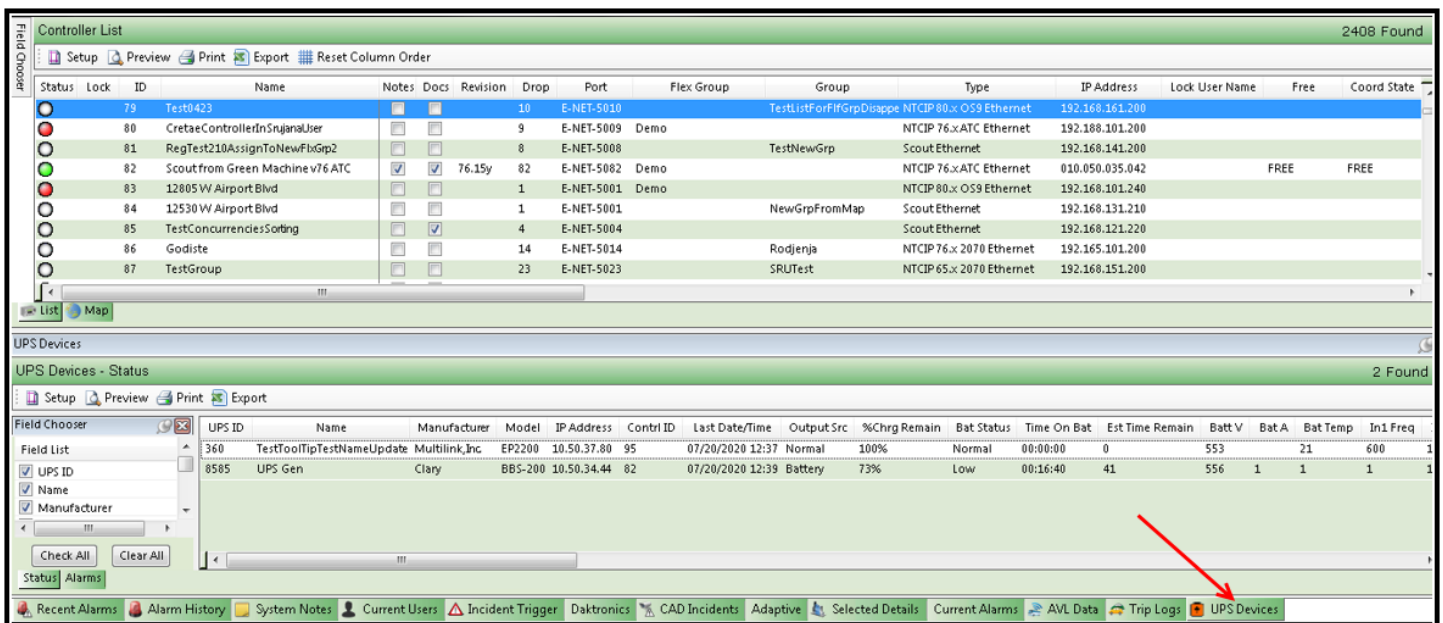
This device has incorporated objects from following UPS.MIB subcategories:

- upsIdent – Manufacturer and Model information
- upsBattery – Multiple objects to indicate battery status
- upsInput – Input power properties
- upsOutput – Output power properties
- upsBypass – Bypass properties
- upsAlarms – Alarms logged by UPS device

Once the device is communication the user can go the Bing Map view to access it. A new Bing Map tooltip has been created for these generic UPS Devices as shown below.



Additionally, under the Details pane, a new UPS devices tab has been added to get additional information from this device. This includes UPS Status and Alarms.



To assist the agency, the UPS MIB alarms have been added to the Active Alarm Selection Definition so that the icons on the List View or Map view can change colors to notify the user if UPS issues.

Active	Alarm#	Description	Color	Priority	Flash
<input type="checkbox"/>	1	Power Up Alarm	Yellow	128	<input type="checkbox"/>
<input checked="" type="checkbox"/>	2	Stop Timing	Magenta	1	<input checked="" type="checkbox"/>
<input type="checkbox"/>	3	Cabinet Door Activation	Yellow	128	<input type="checkbox"/>
<input checked="" type="checkbox"/>	4	Coordinator Failure	Cyan	5	<input type="checkbox"/>
<input type="checkbox"/>	5	External Alarm # 1	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	6	External Alarm # 2	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	7	External Alarm # 3	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	8	External Alarm # 4	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	9	Closed Loop Disabled	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	10	External Alarm # 5	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	11	External Alarm # 6	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	12	Manual Control Enable	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	13	Coordination Free Switch Input	Yellow	128	<input type="checkbox"/>
<input checked="" type="checkbox"/>	14	Local Flash Input	Yellow	1	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	15	CMU or MMU Flash Input	Yellow	1	<input checked="" type="checkbox"/>
<input type="checkbox"/>	16	CMU or MMU Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	17	Cycle Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	18	Cycle Failure	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	19	Coordination Fault	Yellow	128	<input type="checkbox"/>

Active	Alarm#	Description	Color	Priority	Flash
<input type="checkbox"/>	UPS 1	Battery Bad	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 2	On Battery	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 3	Low Battery	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 4	Depleted Battery	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 5	Temp out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 6	Input out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 7	Output out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 8	Output Overload	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 9	On Bypass	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 10	Bypass out of tolerance	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 11	Output OFF as requested	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 12	UPS Device is OFF	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 13	Charger Failed	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 14	Output is OFF	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 15	UPS System OFF	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 16	Fan Failure	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 17	Fuse Failure	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 18	General Fault	Yellow	128	<input type="checkbox"/>
<input type="checkbox"/>	UPS 19	Diagnostics Test Failed	Yellow	128	<input type="checkbox"/>

Finally, the UPS MIB alarms have been also added to the Alarms Dashboard.

**Trafficware Dashboard**

Date range: 6/13/2020 - 6/16/2020, Time range: 00 - 24, Days: Every day, Intersections: All, Flex groups: All, Alarm types: All, Values: Count

**Top 5 Intersections Affected by Alarms**

Intersections	Count
82	1
27	2
44	3

**Top 5 Most Frequent Alarm Types**

**Daily Alarm Activations**

Jun-13, Jun-15, Jun-16

**Signal Timing Alarms**: No data found

**Preemptions**: No data found

**Comms, Controllers and Cabinets**

Power Up: 0, 2

**Detection Alarms**: No data found

**Congestion Incidents**: No data found

**Other Alarms**

Alarm	Count
A01 - Overload	1
Red Clearance Ex...	1
UPS01 - Battery ...	1
UPS02 - On Batta...	2
UPS03 - Low Batt...	1
UPS24 - Test in ...	1

**UPS Alarms with Count** →

**Total Alarms**: 10

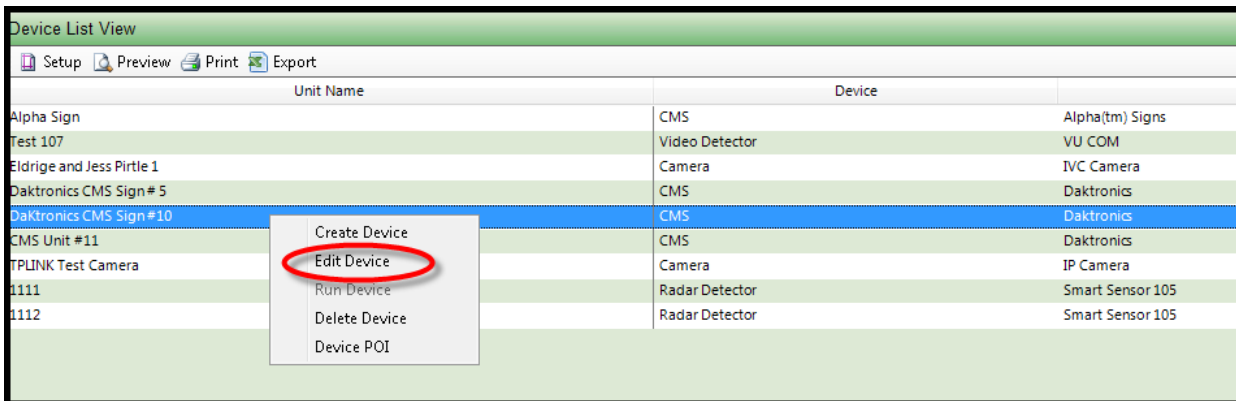
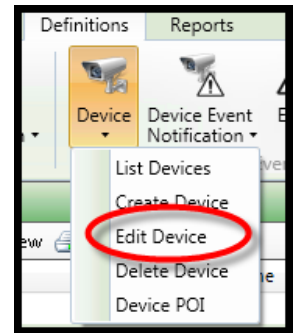
Map: Memorial Park, Cottage, 2500 feet, 500 ft

### 6.7.3 Edit Devices

To edit the defined *Devices*, navigate to *Definitions...Devices...List Devices* from the *Actions* Pane. **ATMS** will display the existing *Devices* in the system.

Select the desired *Device* from the list, the option to *Edit Device* becomes available as shown in the figure below. The same window as the *Create Device* will appear for editing the parameters.

Enter your changes. Click “Apply” or “OK” to save.

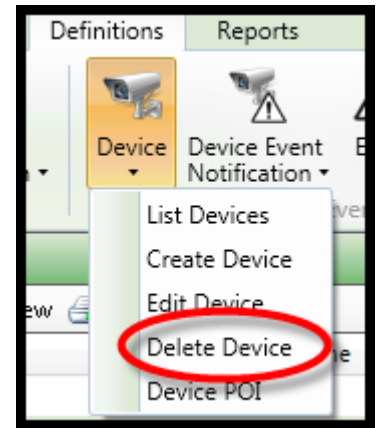
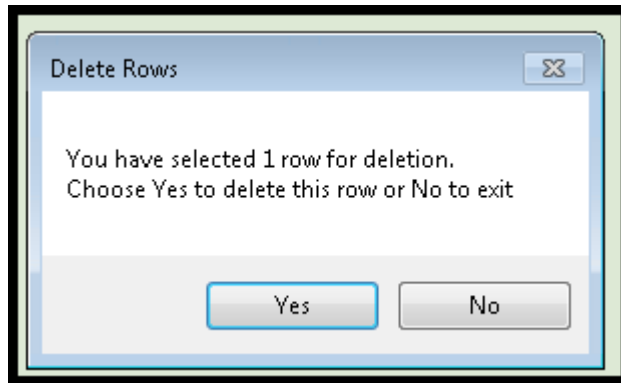


Unit Name	Device	
Alpha Sign	CMS	Alpha(tm) Signs
Test 107	Video Detector	VU COM
Eldrige and Jess Pirtle 1	Camera	IVC Camera
Daktronics CMS Sign# 5	CMS	Daktronics
DaKtronics CMS Sign #10	CMS	Daktronics
CMS Unit #11	CMS	Daktronics
TPLINK Test Camera	Camera	IP Camera
1111	Radar Detector	Smart Sensor 105
1112	Radar Detector	Smart Sensor 105

As shown above, please note that after selecting a device, right-clicking will also allow the user to access the Device selection menu.

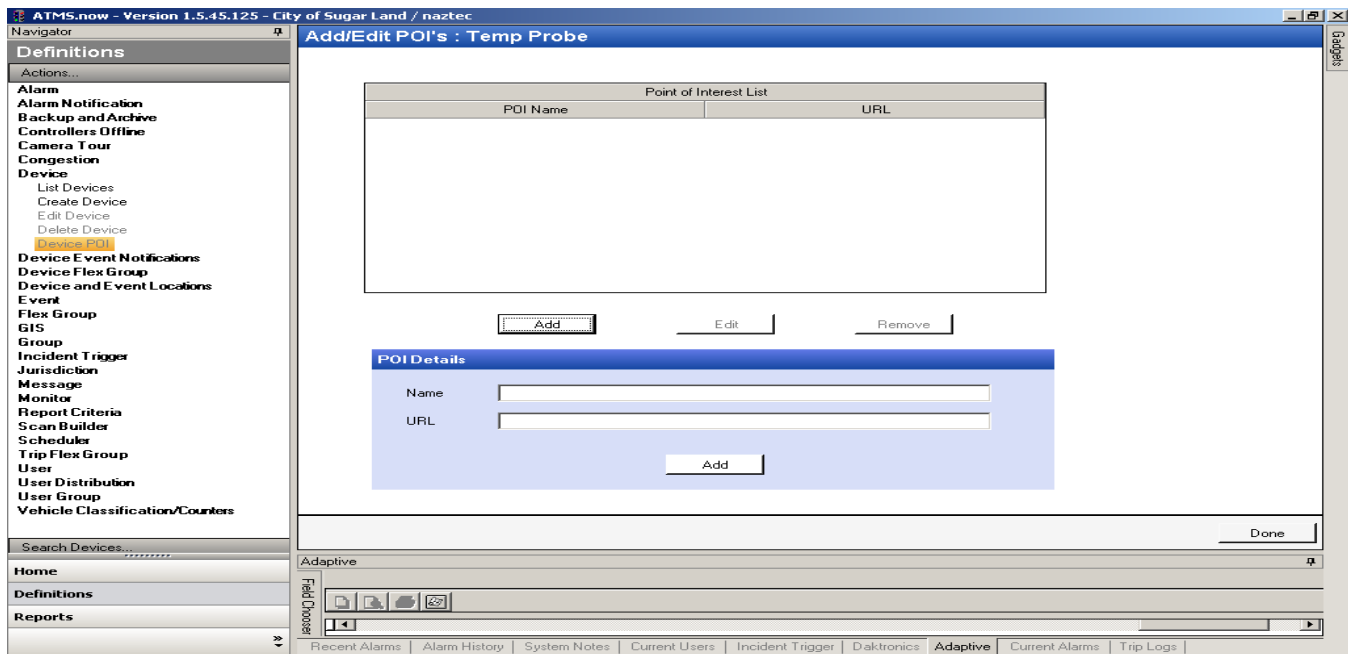
## 6.7.4 Delete Devices

To delete a *Device*, navigate to *Definitions...Devices...List Devices* from the *Actions* Pane. **ATMS** will display the existing *Devices*. Select the desired device from the list, the option to *Delete Device* becomes available as shown in the figure below. Select *Delete Device*, a “pop-up” will appear to allow the user to confirm the *Delete* function.



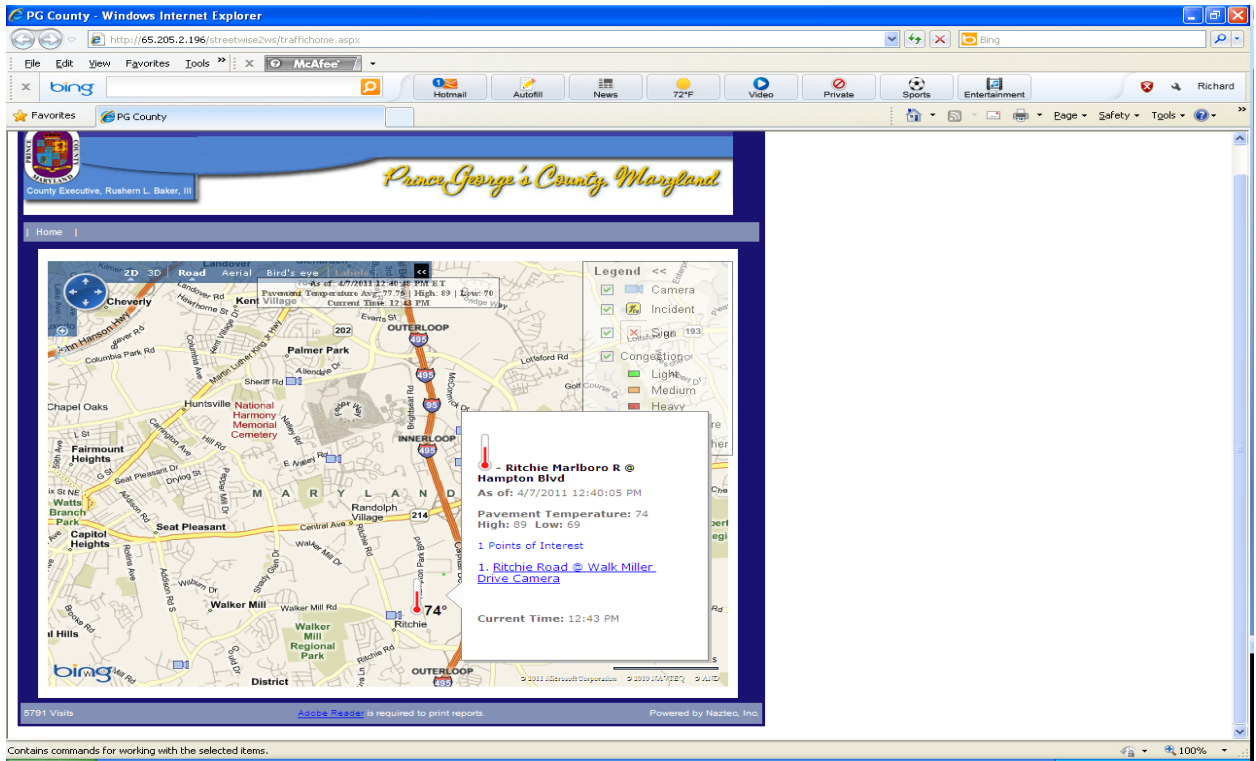
## 6.7.5 Device POI (Point of Interest)

This is an application originally built for Prince Georges County Maryland for use with their temperature probes. The county requested that they wanted to associate some point on interest with their web temp probe devices when *they hover over the device*.



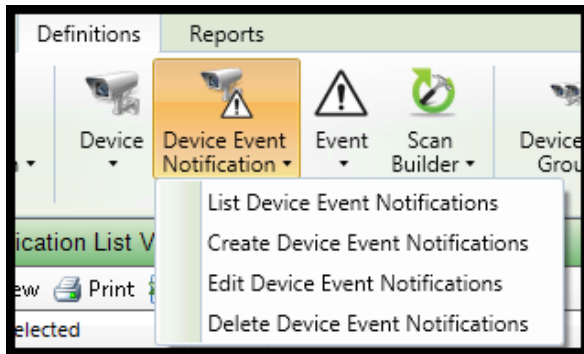
This is a specific legacy feature with GIS Mapping. The screen below is a view that Prince Georges County has when browsing the POI.





In order to have a temp probe device on the GIS legend make sure you have it enabled in User permissions and preferences and also create and add the device on the GIS.

## 6.8 Device Event Notification



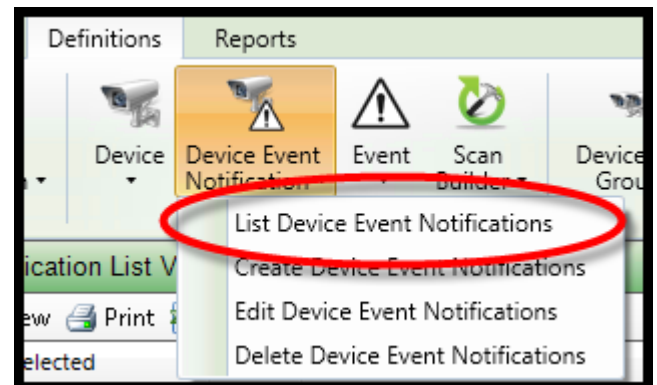
The *Device Event Notification* sets the process for monitoring and notification when changes in status occur on monitored devices. Only **Daktronics** CMS signs (CMS module) is integrated to this feature at this time.

*Devices* can be monitored on a single unit bases or by *Device Flex Group*. If *Device Flex Groups* are used for this feature they have to be defined before this feature is programmed.

*Device Event Notifications* are performed through the use of *User Distribution* lists and are very flexible for customized use.

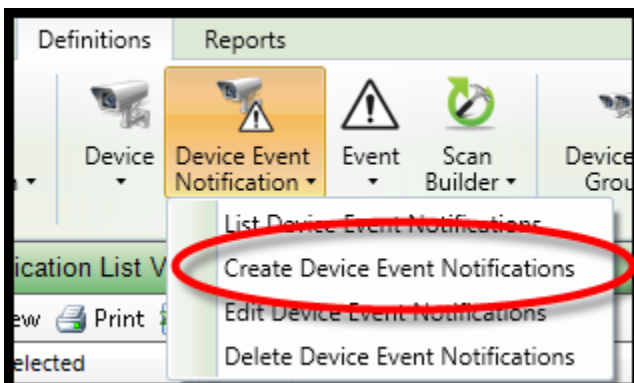
### 6.8.1 List Device Event Notification

To display the existing *Device Event Notifications*, navigate to *Definitions...Device Event Notifications...List Device Event Notifications*. **ATMS** will display the entire list in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.



By	Selected	Device	Type
Device	Daktronics CMS Sign# 5	CMS	Daktronics

### 6.8.2 Create Device Event Notification



To create a new *Device Event Notification*, navigate to *Definitions...Device Event Notification...Create Device Event Notification* from the *Action* pane. A basic setup screen like the one shown below will appear in the main view pane.

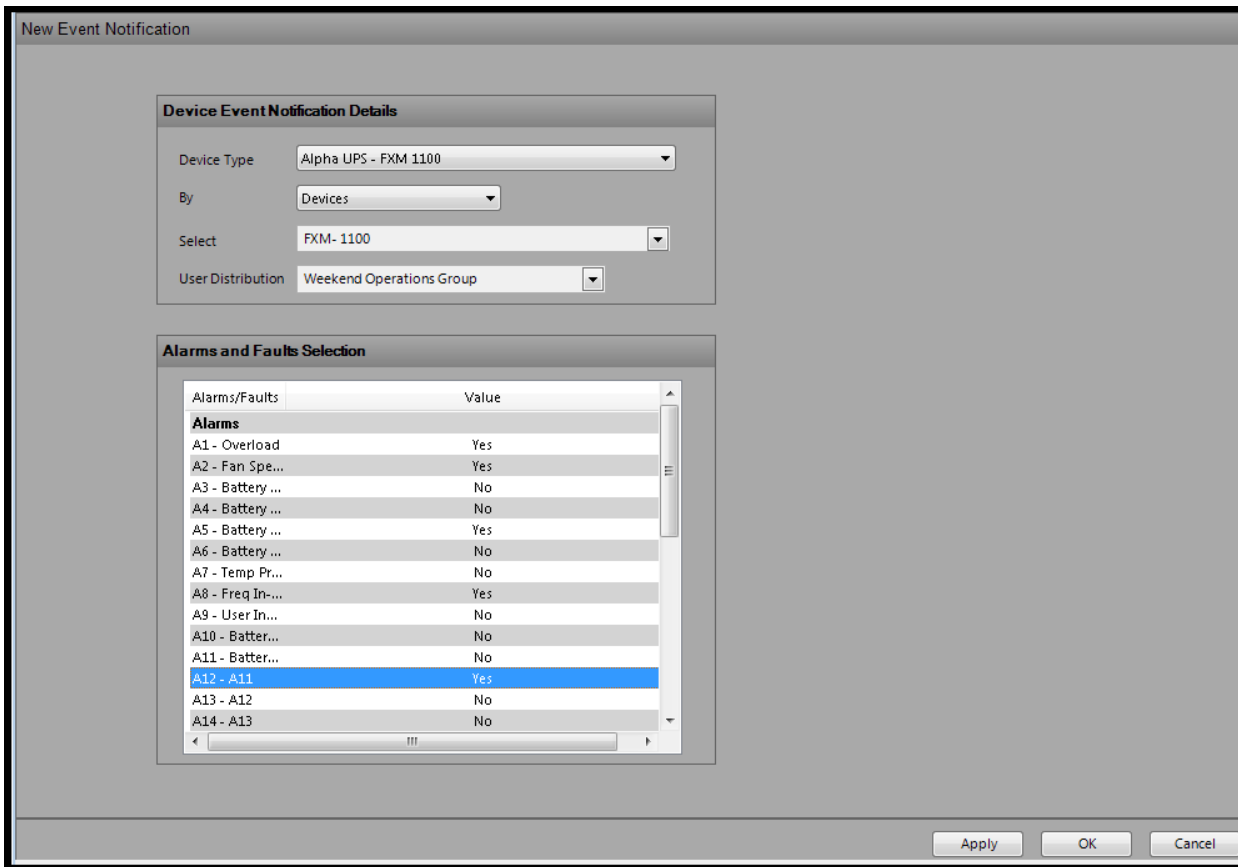
Select the *Device Type* (Device category) to be monitored for notification. All monitored *Devices* must be defined before they can be used.

Notifications can be monitored by *Device* or *Device Flex Group*.

Select the *Device* or the *Device Flex Group* name to be monitored. This selection is determined from the “*By*” selection above it.

Select the *User Distribution* group to be notified when the *Device Event* occurs.

Click “Apply” or “OK” to save.

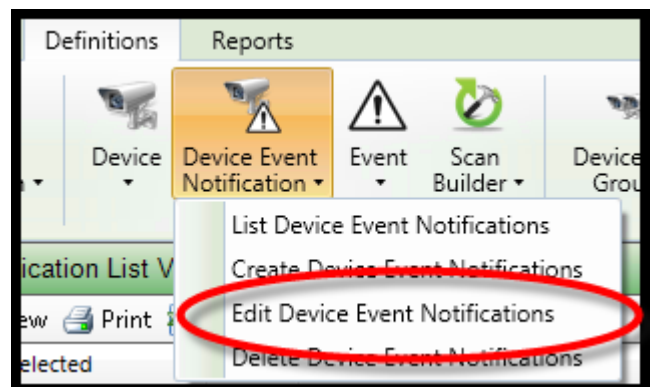


### 6.8.3 Edit Device Event Notification

To edit a defined *Device Event Notification*, navigate to *Definitions...Device Event Notifications...List Device Event Notifications* from the *Actions* Pane. **ATMS** will display the existing list in the system. Select the desired *Device Event Notification* from the list. The option to *Edit* becomes available as shown in the figure to the right.

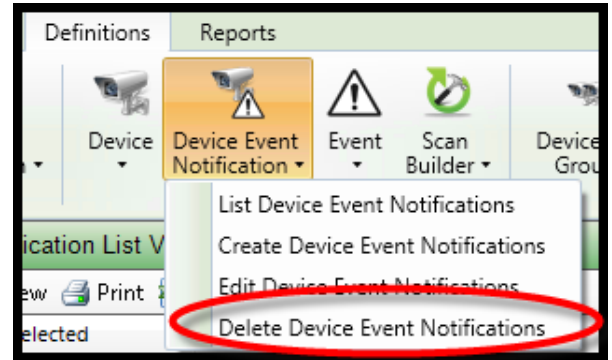
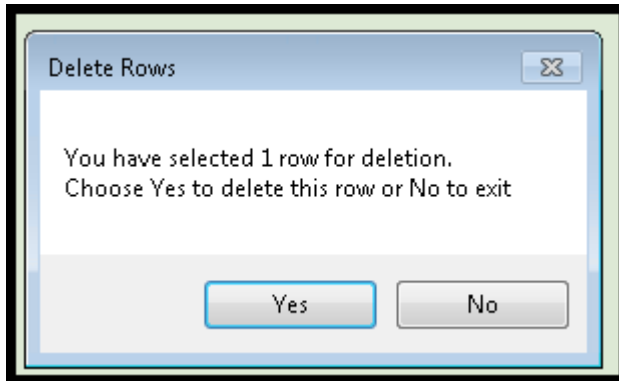
The setup screen will appear in the main window, populated with the existing settings. Make the desired changes.

Click “Apply” or “OK” to save.

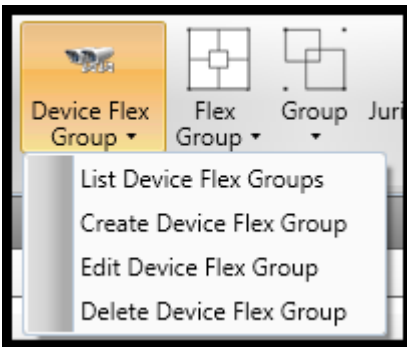


## 6.8.4 Delete Device Event Notification

To delete a *Device Event Notification*, navigate to *Definitions...Device Event Notification...List Device Event Notifications* from the *Actions* Pane. **ATMS** will display the existing list of notifications. Select the desired one from the list. The option to *Delete Device Event Notification* becomes available. Select the *Delete* option. A “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.9 Device Flex Group



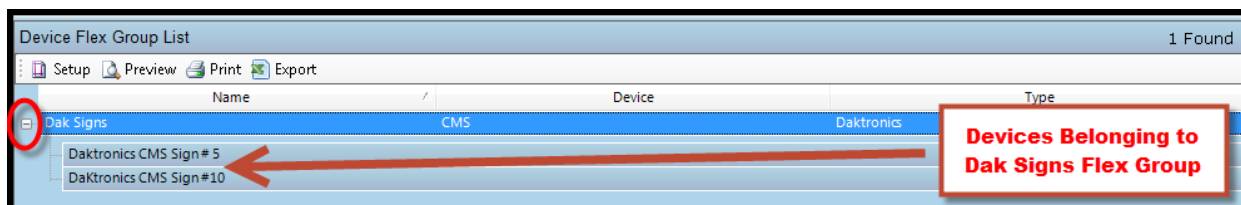
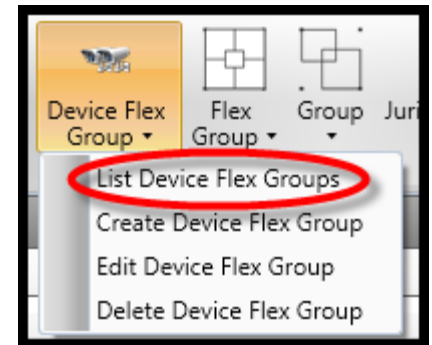
*Device Flex Groups* are available to expand navigation, selection and *Scheduler* operation to *Devices*. A controller cannot be a member of a *Device Flex Group*. Applications such as “Full Status” for **CMS** and **UPS** devices can be performed by *Device Flex Group*.

*Device Flex Groups* are defined by equipment type, so only matching *Device Types* can be assigned to a corresponding *Device Flex Group*.

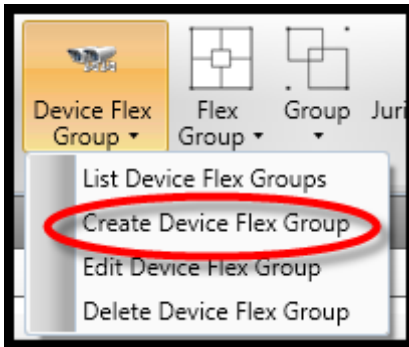
### 6.9.1 List Device Flex Group

To display the existing *Device Flex Groups*, select *Definitions...Device Flex Group...List Device Flex Groups*. **ATMS** will display all of the available *Device Flex Groups* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.

You can select the “+” symbol or “double-click” the *Device Flex Group* name to expand the list. The controllers displayed below the *Device Flex Group* are the currently assigned controllers. To collapse the list, select “-” or “double-click” the *Device Flex Group* name.



## 6.9.2 Create Device Flex Group



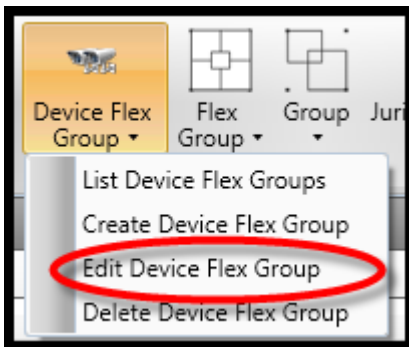
To create a new *Device Flex Group*, navigate to *Definitions...Device Flex Group...Create Device Flex Group* from the *Action* pane. A basic setup screen like the one shown below will appear in the main view pane.

Assign a *Name* for the *Device Flex Group*. This name will usually be a common to region name or equipment type.

Select the *Device Type* for the *Device Flex Group*. The selected *Device Type* will set the *Devices* that can be associated with the group. Only *Devices* of that *Device Type* can be assigned to that *Device Flex Group*. Click “Apply” or “OK” to save.



## 6.9.3 Edit Device Flex Group

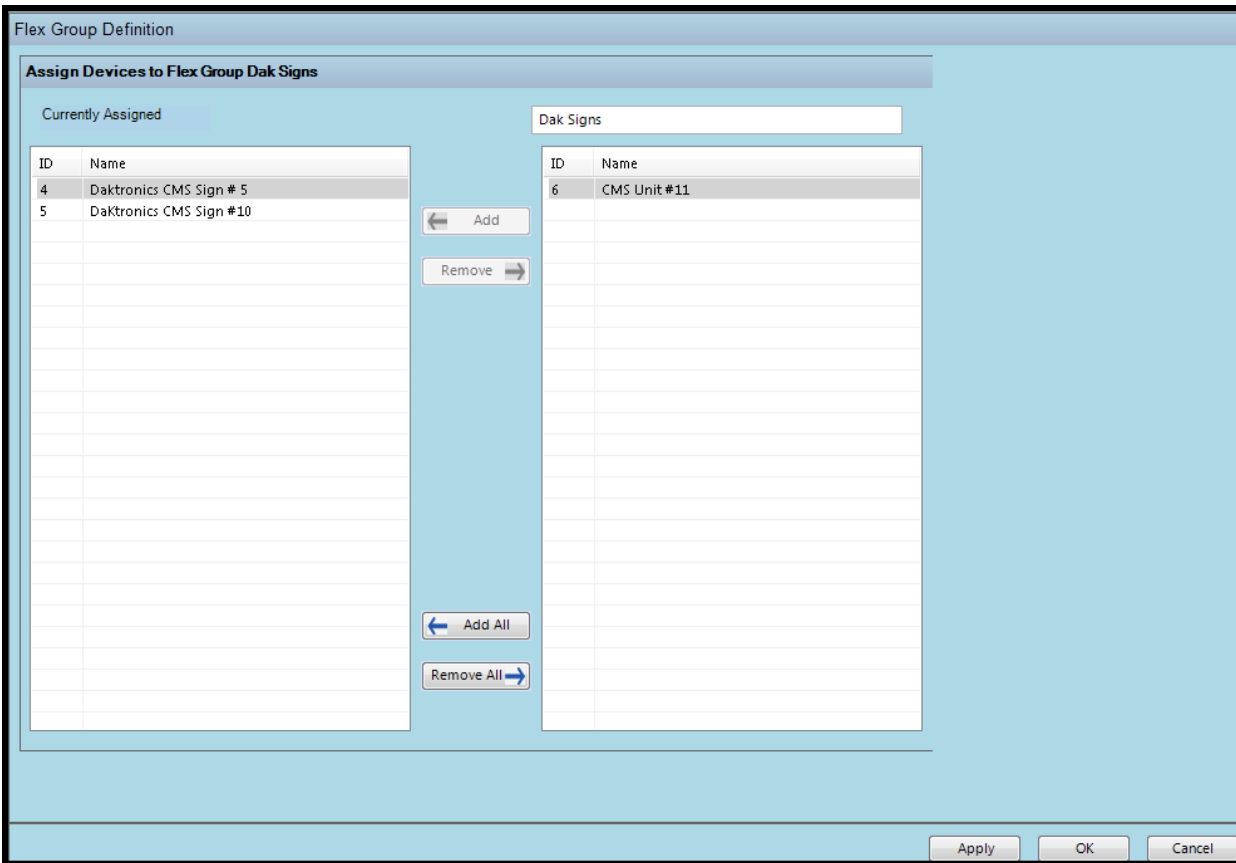


To edit a defined *Device Flex Group*, navigate to *Definitions...Device Flex Group...List Device Flex Groups* from the *Actions* Pane. **ATMS** will display the existing *Flex Groups* in the system. Select the desired *Device Flex Group* from the list. The option to *Edit Device Flex Group* becomes available as shown in the figure to the right. Highlight the desired *Device Flex Group*, then select *Edit Device Flex Group*.

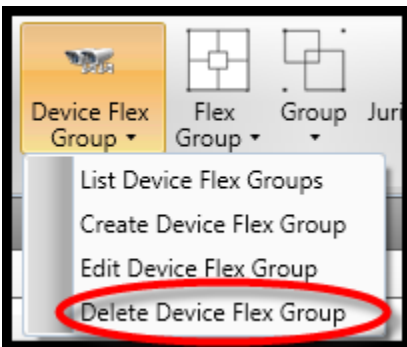
The list of intersections not belonging to the *Device Flex Group* will appear on the box to the right. To add intersection(s), highlight the targeted intersection(s), then select the “Add” button, or “Add All” to place all of the controllers into the list. For the selection of multiple controllers at one time, hold the “Shift” key as you select each controller.

To remove controllers from the assigned list, highlight the controller(s) on the *Device Flex Group* list on the left. Select the “Remove” button. Selecting “Remove All” will remove all of the controllers from the list.

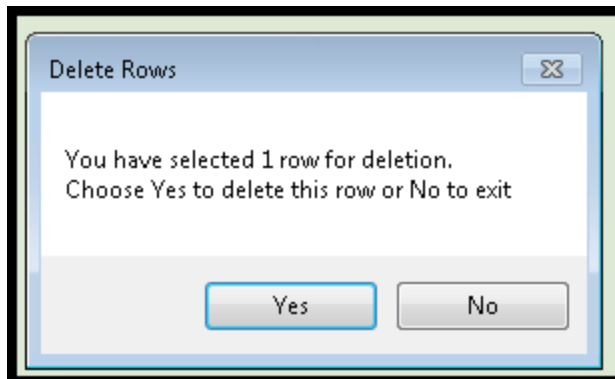
Click “Apply” or “OK” to save.



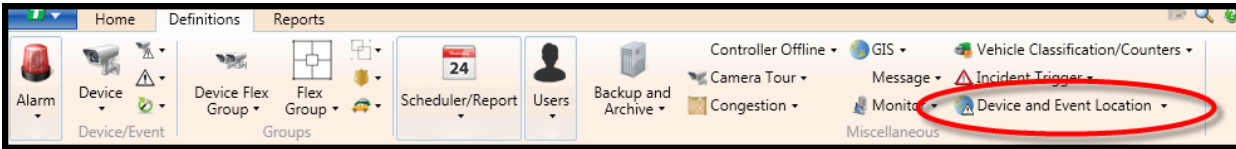
#### 6.9.4 Delete Device Flex Group



To delete a *Device Flex Group*, navigate to *Definitions...Device Flex Group...List Device Flex Groups* from the *Actions* Pane. **ATMS** will display the existing *Device Flex Groups*. Select the desired *Device Flex Group* from the list, the option to *Delete Device Flex Group* becomes available as shown in the figure below. Highlight the target *Device Flex Group* and select *Delete Device Flex Group*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



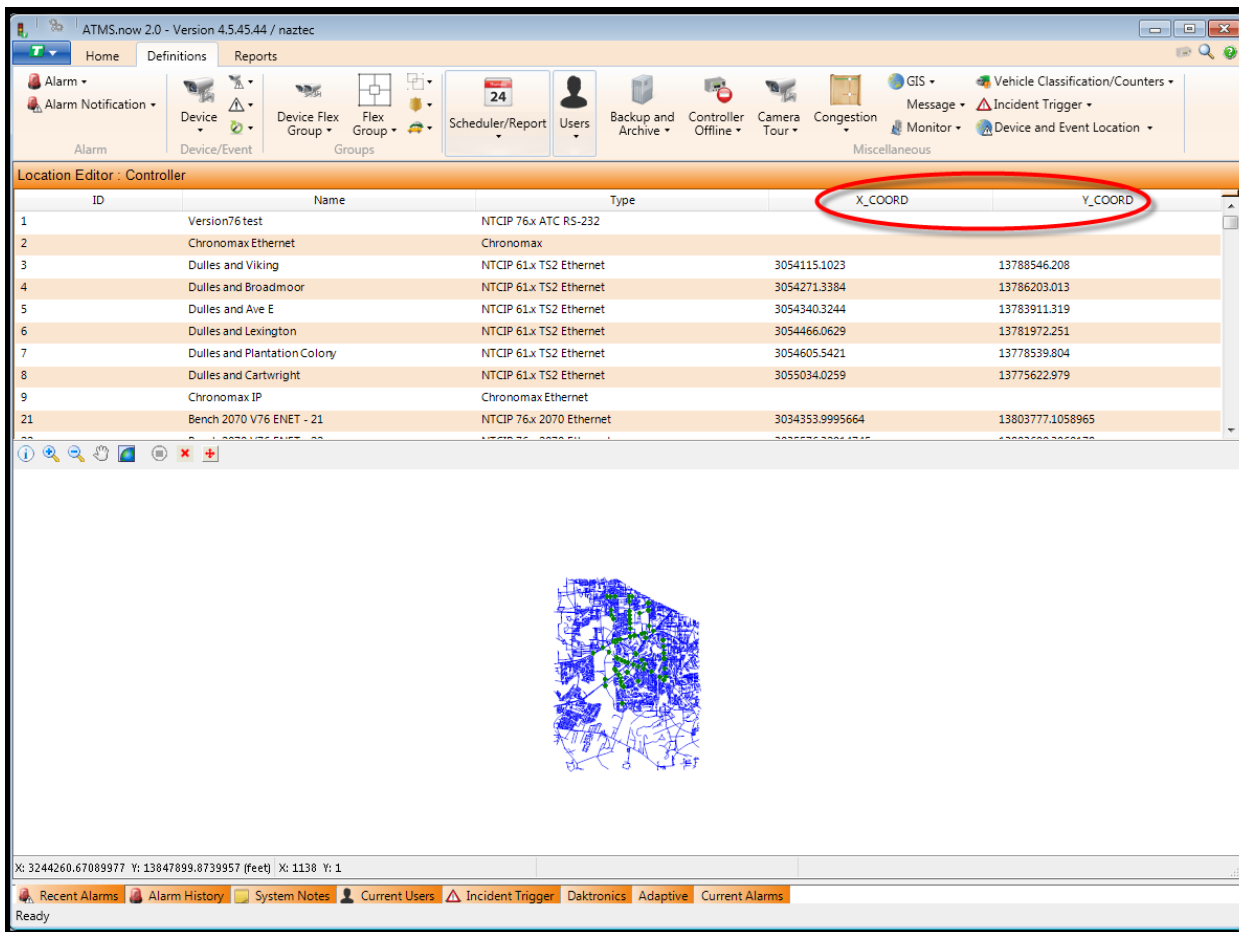
## 6.10 Device and Event Locations



**ATMS** provides the user a GIS shape file editing utility for the purposes of adding or moving system devices (Controllers and Devices) and Events on the *GIS map*. This is performed by enabling the user to define a geo-reference value of Latitude and Longitude for any *System Device* or *Event* in the **ATMS** database.

The initial presentation of the GIS layer map in the main window will appear for the “Controller” layer, as shown in the figure below. The view will display a list of all Controllers on along with their coordinates if assigned, and a *GIS Location Editor* screen on the bottom.

If you do not see values in the *X-Coord* and *Y-Coord* columns of the *Device List* on the upper half of the screen, then the device has not been assigned a GIS map location.





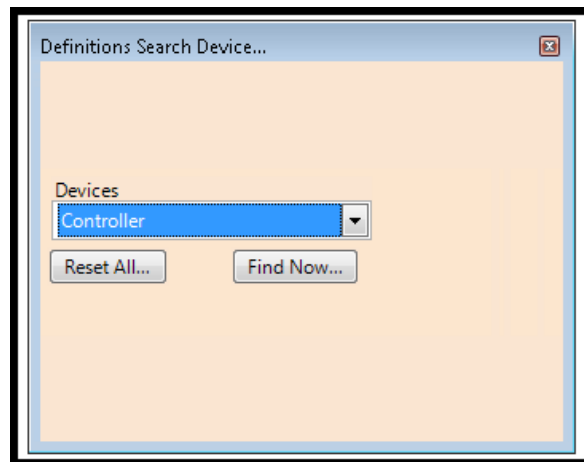
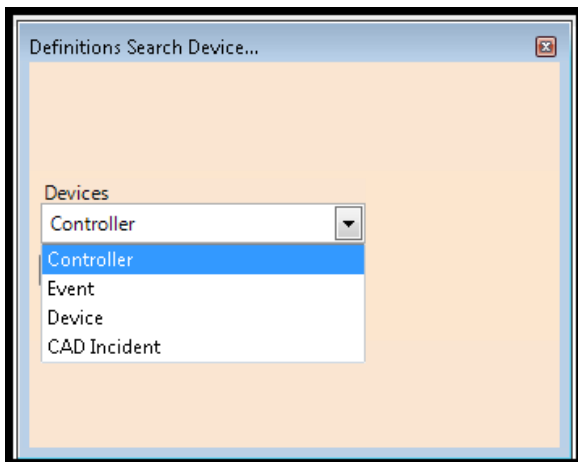
## Location Editor Search Engine

The screenshot shows the ATMS.now 2.0 software interface. The main window is titled "Location Editor - Controller" and contains a table of device locations. A search dialog box titled "Definitions Search Device..." is open on the left, showing a list of device types. A magnifying glass icon in the top right toolbar is highlighted with a red arrow.

ID	Name	Type	X_COORD	Y_COORD
1	Version76 test	NTCIP 76x ATC RS-232		
2	Chronomax Ethernet	Chronomax		
3	Dulles and Viking	NTCIP 61x TS2 Ethernet	3054115.1023	13788546.208
4	Dulles and Broadmoor	NTCIP 61x TS2 Ethernet	3054271.3384	13786203.013
5	Dulles and Ave E	NTCIP 61x TS2 Ethernet	3054340.3244	13783911.319
6	Dulles and Lexington	NTCIP 61x TS2 Ethernet	3054466.0629	13781972.251
7	Dulles and Plantation Colony	NTCIP 61x TS2 Ethernet	3054605.5421	13778539.804
8	Dulles and Cartwright	NTCIP 61x TS2 Ethernet	3055034.0259	13775622.979
9	Chronomax IP	Chronomax Ethernet		
21	Bench 2070 V76 ENET - 21	NTCIP 76x 2070 Ethernet	3034353.9995664	13803777.1058965

The lookup list and corresponding *GIS Location Editor* map for that layer is changed by using the *Search Engine* shown here on the left of the screen. By selecting the magnifier icon on the top right of the Overview pane, the search Engine will be displayed. The *Search Engine* allows the user to select the targeted layer for location editing.

To navigate the *Search Engine*, select the Device Type from the *Devices* box. Next, click the “Find Now” button. The list view and the *GIS Location Editor* map will change to reflect the selected type.




Once the targeted layer is displayed, editing can be performed by highlighting a device from the list.


## Map Navigation Toolbar


The *GIS Location Editor* control is performed by selecting a toolbar function from the upper left of the GIS map:





To navigate the *GIS Location Editor* map, select one of the following icons:


 **Information** – Selecting this function will provide real-time information of the device using a “Hover Balloon”, by placing the mouse over the desired map object.


 **Zoom-In** – Selecting this function will allow the user to click on a point on the map and wrap around a desired area to zoom.


 **Zoom-Out** – After selecting this, clicking once on the map will zoom out 1 measure of extent.

 **Pan** – This enables the user to “grab” the map and slide it in any direction.

 **Full Extent** – By selecting this icon, the GIS map will zoom out to the fullest extent.

 **Add Shape** – By selecting this icon, the mouse can place or move an object on the GIS Location Editor map to “Add” or “Edit” the location of a GIS object.

The *GIS Location Editor* map can zoom to the defined location of the object. Any item highlighted can be added to the GIS map or moved on the GIS map by toggling the “Add Shape” icon  , then navigating the *GIS Location Editor* map to the new desired location. Place the cursor at the location. Click to place the *Device*.

 **Delete Shape** – By selecting this option, the targeted controller, camera, etc., will be removed from the GIS map.

The Device will locate only one time for each selection of the “Add Shape” icon.

Location Editor : Controller

ID	Name	Type	X_COORD	Y_COORD
9	Chronomax IP	Chronomax Ethernet		
21	Bench 2070 V76 ENET - 21	NTCIP 76.x 2070 Ethernet	3034353.9995664	13803777.1058965
22	Bench 2070 V76 ENET - 22	NTCIP 76.x 2070 Ethernet	3035576.32914745	13803690.3960178
23	Bench NTCIP TS2V61.x ENET - 23	NTCIP 61.x TS2 Ethernet	3037288.14997949	13803779.9029894
24	Bench ATC V76 ENET - 24	NTCIP 76.x 2070 Ethernet	0	0
25	Bench V76 ATCENET- ID 25	NTCIP 76.x ATC Ethernet	3043108.900227	13803709.9756678
27	TS2 Ethernet	980 TS2 Sec. 61.x Ethernet		
30	ID 30	NTCIP 76.x 2070 Ethernet	3036474.51152586	13803736.6843187
38	Test V76 ATC	NTCIP 76.x ATC Ethernet	3042071.1787749	13803763.1204322
148	Bench 2070	NTCIP 65.x 2070 Ethernet		

**Add Shape for ID 30**

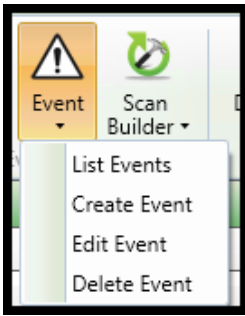
Location Editor : Controller

ID	Name	Type	X_COORD	Y_COORD
1	Version76 test	NTCIP 76.x ATC RS-232		
2	Chronomax Ethernet	Chronomax		
3	Dulles and Viking	NTCIP 61.x TS2 Ethernet	3054115.1023	13788546.208
4	Dulles and Broadmoor	NTCIP 61.x TS2 Ethernet	3054271.3384	13786203.013
5	Dulles and Ave E	NTCIP 61.x TS2 Ethernet	3054340.3244	13783911.319
6	Dulles and Lexington	NTCIP 61.x TS2 Ethernet	3054466.0629	13781972.251
7	Dulles and Plantation Colony	NTCIP 61.x TS2 Ethernet	3054605.5421	13778539.804
8	Dulles and Cartwright	NTCIP 61.x TS2 Ethernet	3055034.0259	13775622.979
9	Chronomax IP	Chronomax Ethernet		
21	Bench 2070 V76 ENET - 21	NTCIP 76.x 2070 Ethernet	3034353.9995664	13803777.1058965

**Delete Shape for ID 5**

X: 3036560.94886736 Y: 13804089.9499752 (feet) X: 199 Y: 30

## 6.11 Events

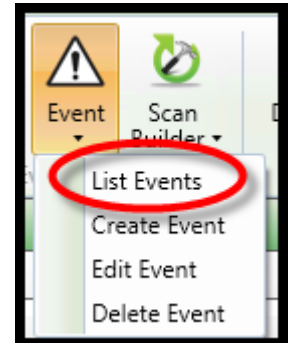
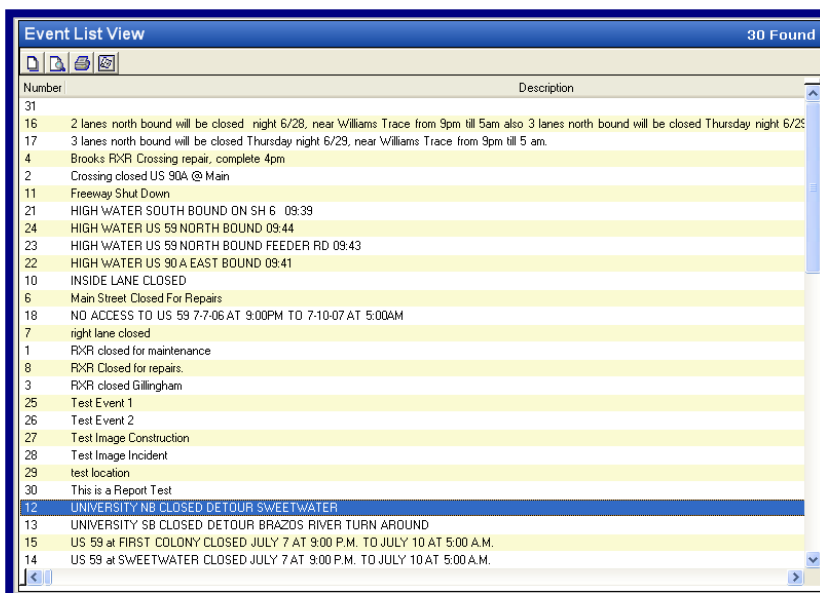


*Events* can be added to the **ATMS** database and to the *GIS* map by using either of two methods. The first method was described in Section 4.3 in the *GIS Map Navigation Toolbar* section under *Events*. This method provided for immediate creation and GIS placement of the event on the map.

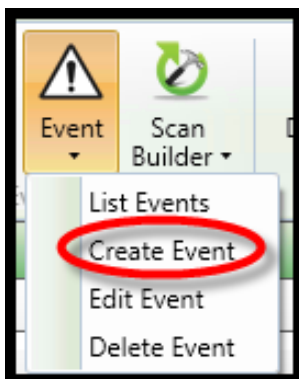
This section, which describes the second method, enables the user to manually *Create*, *Edit* (including activating and de-activating), and *Delete* each *Event*. GIS placement of the event through this method is performed manually as discussed previously.

### 6.11.1 List Events

To display the existing *Events*, select *Definitions...Events...List Events*. **ATMS** will display all of the available *Events* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.



### 6.11.2 Create Event



This section describes how to create an *Event* within the *Definitions* module. This method will only create an *Event*, not place the event on the *GIS* map or to the web site. To place a created *Event* on the *GIS* map, refer to Section 5.7. **ATMS** also provides a tool to *Create Event* and place it on the map in one step. This is discussed in Section 4.1.2, under *Map Navigation Toolbar...Event*.

To create an *Event*, navigate to *Definitions...Event...Create Event* from the *Action* pane. A basic setup screen like the one shown below will appear in the main view pane.

First, check the *Active* box for the *Event* if you desire for it to be immediately active. If you are creating it for an undetermined future date, leave it unchecked. Next, assign a *Description* name for the *Event*.

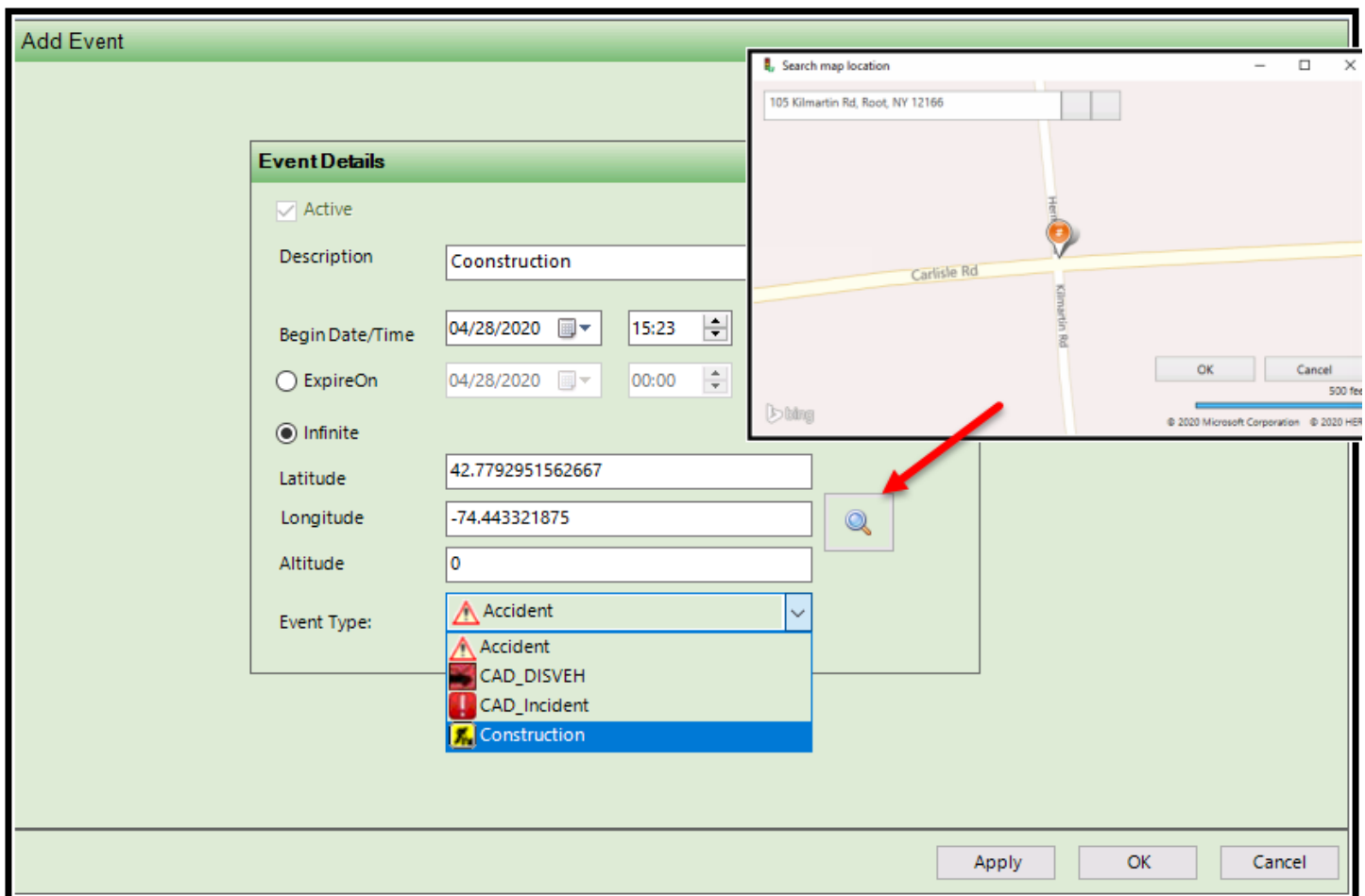
Select the *Begin Date/Time* value to the desired *Event* start time. The initial setup screen will default to the current date and time. If a future date and time is assigned for the *Event*, **ATMS** will not display nor activate the *Event* until the programmed time. If the *Event* is not checked as *Active*, it will not begin at the *Begin Date/Time* as programmed.

Select either “*Expire On*” or “*Infinite*” for the expiration time of the event. By selecting “*Infinite*”, the event will need to be manually de-activated as described in the next section, *Edit Event*. For a specific expiration date, select the desired *Expire On* date parameters.

The Latitude, Longitude and Altitude are used for placement on the Bing Map and can be entered directly by the user or can be calculated by placing them on the map via the *Device and Event Location* selection in the Definitions Module or using the Magnifying icon on this selection.

Select the *Event Type* through the drop-down selection. For additional or custom *Event Types*, contact your Cubic | Trafficware representative.

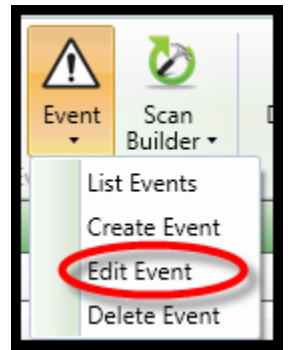
Click “Apply” or “OK” to save.



### 6.11.3 Edit Events

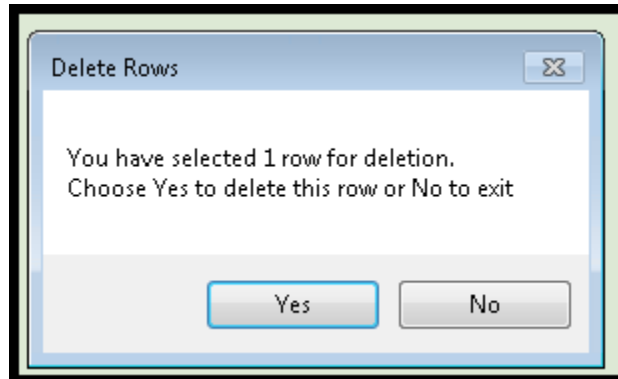
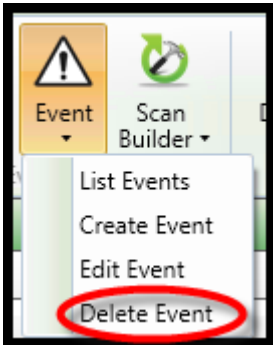
To edit the defined *Events*, navigate to *Definitions...Events...List Events* from the *Actions* Pane. **ATMS** will display the existing *Events* in the system. Select the desired *Event* from the list. Highlight the desired *Event*, then select *Edit Event*.

In addition to editing the *Event* parameters, each *Event* status can be controlled by making it “*Active*” or “*Inactive*” by checking the appropriate box as shown in the figure below. When an *Event* is “*Inactive*”, it will not appear on the *GIS* map. An *Event* can be made “*Active*” again after it has been “*Inactive*”. If it had a geo-referenced map location (X and Y coordinates), it will re-appear on the *GIS* map when it is activated again.

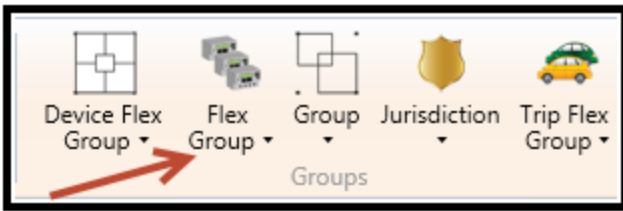


### 6.11.4 Delete Events

To delete an *Event*, navigate to *Definitions...Events...List Events* from the *Actions* Pane. **ATMS** will display the existing *Events*. Select the desired *Event* from the list, the option to *Delete Event* becomes available as shown in the figure below. Highlight the target *Event* and select *Delete Event*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.12 Flex Groups



*Flex Groups* were developed to allow controllers to be identified with multiple groups of intersections, allowing more system flexibility and control. A controller can be a member of any number of *Flex Groups*.

*Flex Groups* can be created to use any number of grouping method the system administrator chooses.

In the early stages of implementing your **ATMS** system, some planning is necessary in order to partition the signal system network into *Groups* and *Flex Groups*. This is for ease of navigation and operation, and to enable **ATMS** to deliver efficient real-time communications. Because each local controller can only belong to a single *Group*, *Flex Groups* were developed to allow controllers to be identified with multiple groups, allowing more system flexibility and control.

Local intersection controllers are typically grouped in the following two ways:

### Selection Grouping

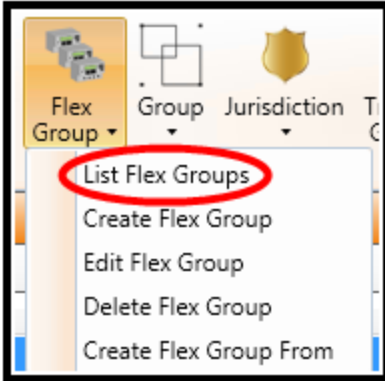
Assigning controllers to groups in this manner allows the user to perform an action on the system by referring to a group of intersections rather than each intersection individually. For example, a *Group* or *Flex Group* can be defined to download the system clock or upload count data with a Selection Group.

### Control Grouping

Grouping in this manner allows intersections to be selected and controlled on the basis of arterial control, regional location, Central or On-Street Master, or common behavior. The picture below shows how a Control Group would be created based on regional location:



## 6.12.1 List Flex Group



To display the existing *Flex Groups*, select *Definitions...Flex Group...List Flex Groups*. **ATMS** will display all of the available *Flex Groups* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.

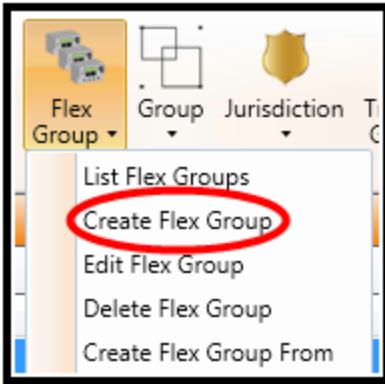
You can select the “+” symbol or “double-click” the *Flex Group* name to expand the list. The controllers displayed below the *Flex Group* are the currently assigned controllers. To collapse the list, select “-“ or “double-click” the *Flex Group* name.

The screenshot shows the 'Flex Group List' window. At the top, there are menu options: Setup, Preview, Print, and Export. Below the menu is a table with a 'Name' column. The table lists several flex groups, each with a '+' or '-' icon to its left. The 'Miami- NW 58th Street' group is expanded, showing a list of controllers. The 'Wichita Flex Group' is also expanded, showing its controllers. Two red boxes highlight the group names: 'Miami NW 58th Street Flex Group' and 'Wichita Flex Group'.

Flex Group List		
Name		
+ 30th street		
+ AI B		
+ Clackamas County OR		
+ Marys FG		
- Miami- NW 58th Street		
4176	Miami-NW 58th street at NW 79th Ave	NTCIP 76.x 2070 Ethernet
4315	Miami-NW 58th street at NW 72nd Ave	NTCIP 76.x 2070 Ethernet
4501	Miami-NW 58th street at SR 826 North	NTCIP 76.x 2070 Ethernet
4502	Miami-NW 58th street at SR 826 South	NTCIP 76.x 2070 Ethernet
4596	Miami-NW 58th street at NW 87th Ave	NTCIP 76.x 2070 Ethernet
5040	Miami-NW 58th street at NW 74th Ave	NTCIP 76.x 2070 Ethernet
5048	Miami-NW 58th Street at NW 84th Ave	NTCIP 76.x 2070 Ethernet
5387	Miami-NW 58th street at NW 82nd Ave	NTCIP 76.x 2070 Ethernet
5669	Miami-NW 58th street at NW 97th Ave	NTCIP 76.x 2070 Ethernet
6095	Miami-NW 58th Street at NW 107th Ave	NTCIP 76.x 2070 Ethernet
6096	Miami-NW 58th street at NW 102nd Ave	NTCIP 76.x 2070 Ethernet
Name		
- Wichita Flex Group		
102	Test V76 2070 Enet Id 102	NTCIP 76.x 2070 Ethernet
103	Test V76 2070 Enet ID 103	NTCIP 76.x 2070 Ethernet



## 6.12.2 Create Flex Group

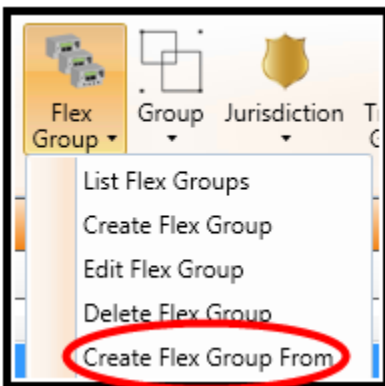


To create a *Flex Group*, navigate to *Definitions...Flex Group...Create Flex Group* from the *Action* pane. A basic setup screen like the one shown below will appear in the main view pane.

First, assign a name for the *Flex Group*. Next, highlight the newly created *Flex Group* and select *Edit Flex Group*.

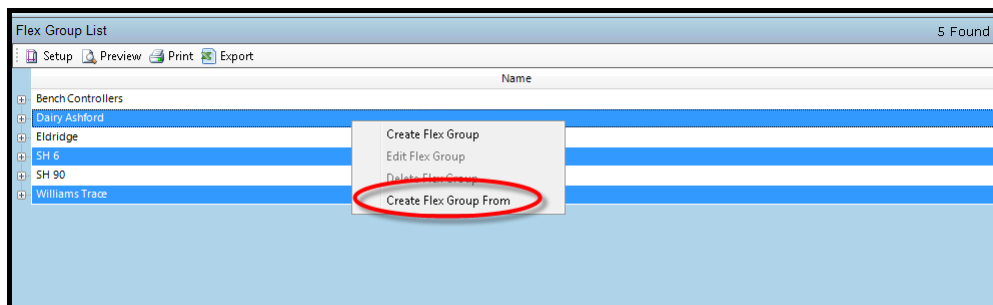


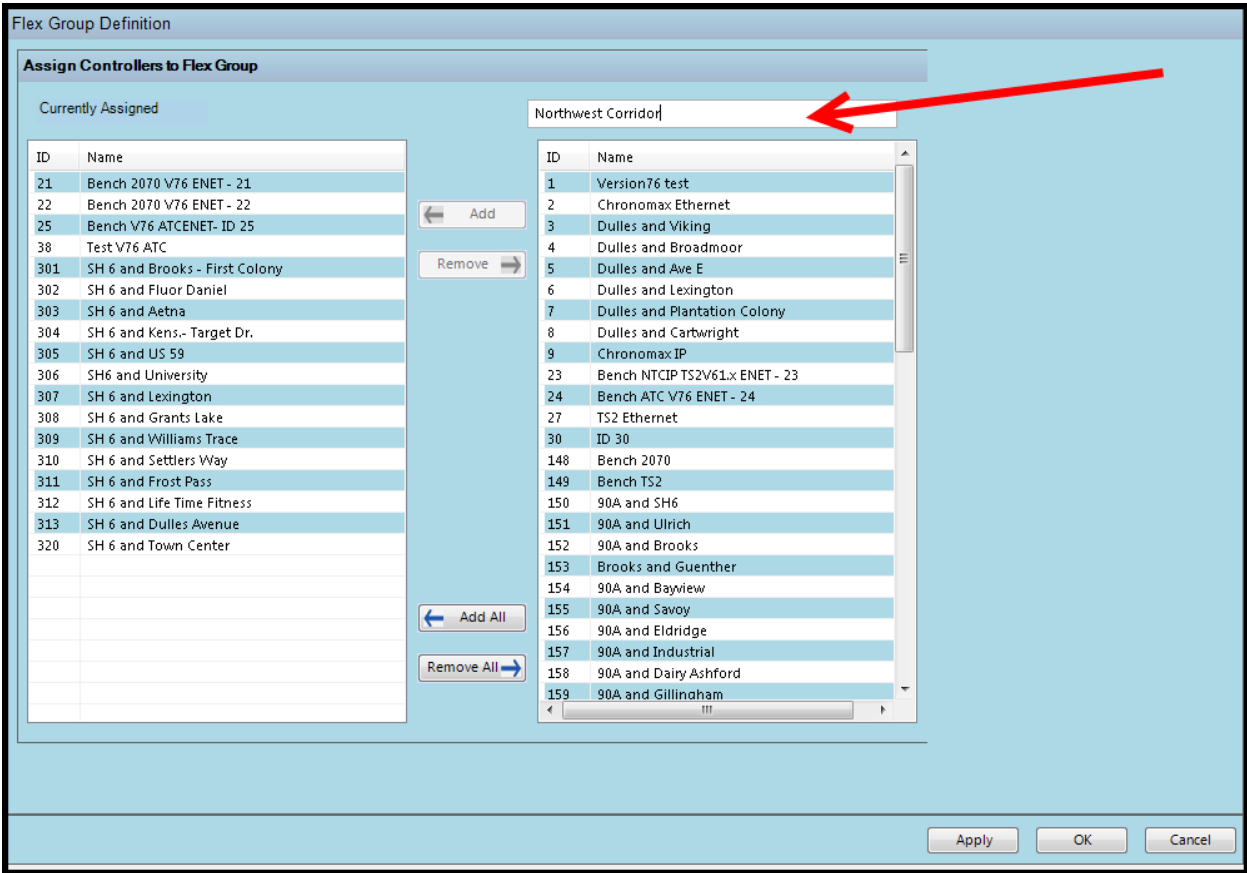
## 6.12.3 Create Flex Group From



You can now create a Flex Group from single or multiple Flex groups by selecting the particular Flex Groups that you want to use and navigating to *Definitions...Flex Group...Create Flex Group From* from the *Action* pane. A basic setup screen like the one shown below will appear in the main view pane.

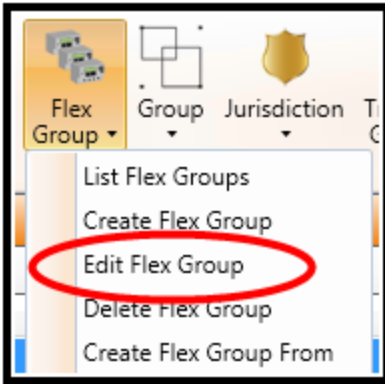
First, select from the list of Flex groups the particular Flex groups that you want to create the new Flex group from. Next select the *Create Flex Group From* action. Then assign a name for the new *Flex Group*. Next, highlight the newly created *Flex Group* and select *Edit Flex Group*.





Make sure you assign a name to this new Flex Group name as shown above.

## 6.12.4 Edit Flex Group

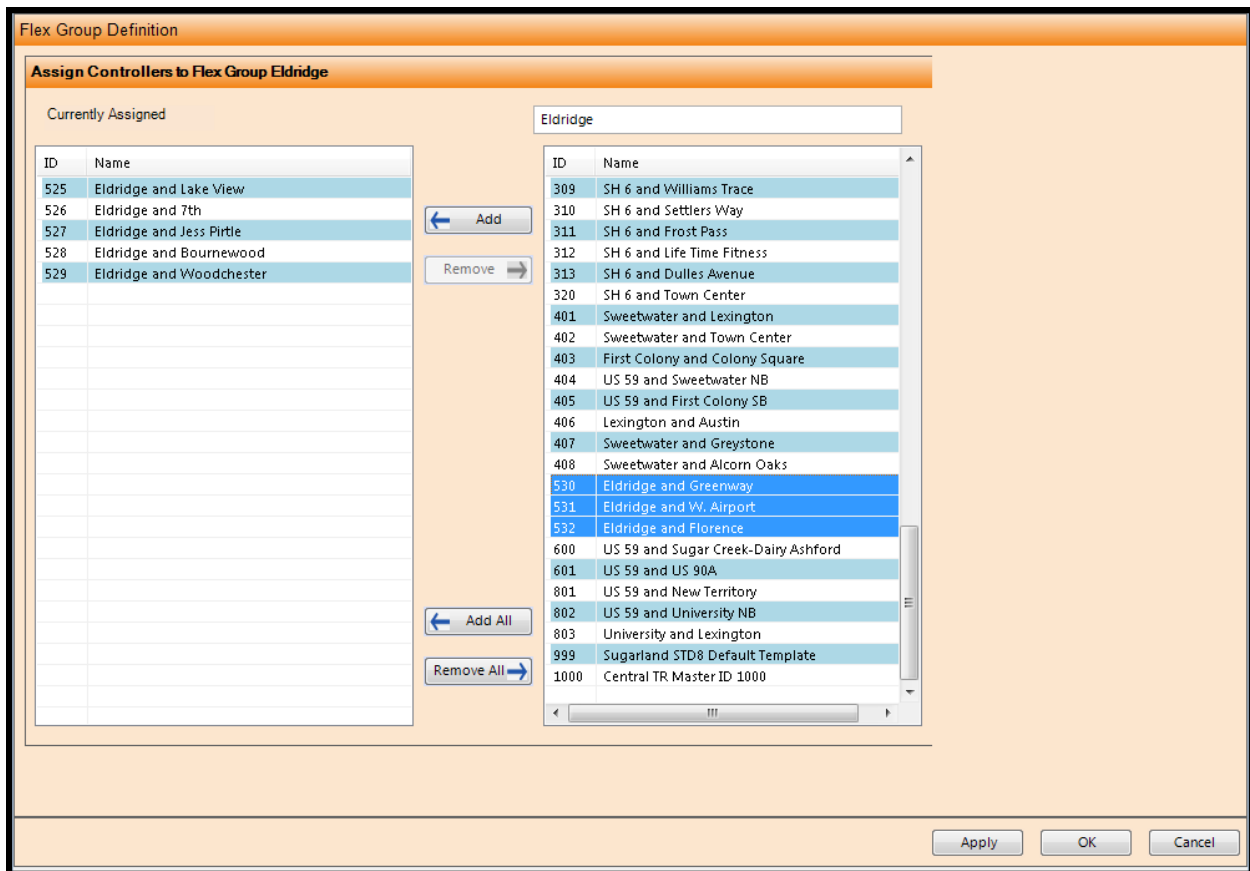


To edit the defined *Flex Groups*, navigate to *Definitions...Flex Group...List Flex Groups* from the *Actions Pane*. **ATMS** will display the existing *Flex Groups* in the system. Select the desired *Flex Group* from the list. The option to *Edit Flex Group* becomes available as shown in the figure below. Highlight the desired *Flex Group*, then select the *Edit* function.

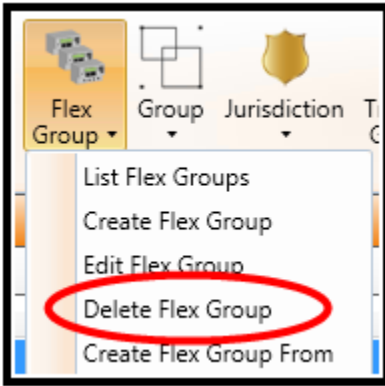
The list of intersections not belonging to the *Flex Group* will appear on the box to the right. To add intersection(s) to the *Flex Group*, highlight the targeted intersection(s), then select the “Add” button, or “Add All” to place all of the entire controllers to the list. For the selection of multiple controllers at one time, use standard windows tools by holding the “Shift” key as you scroll down the list of controllers or by holding the “Ctrl” key and selecting your controllers via left clicking your mouse.

To remove controllers from the assigned list, highlight the controller(s) on the list on the left. Select the “Remove” button. Selecting “Remove All” will remove the entire controller list from the *Flex Group*.

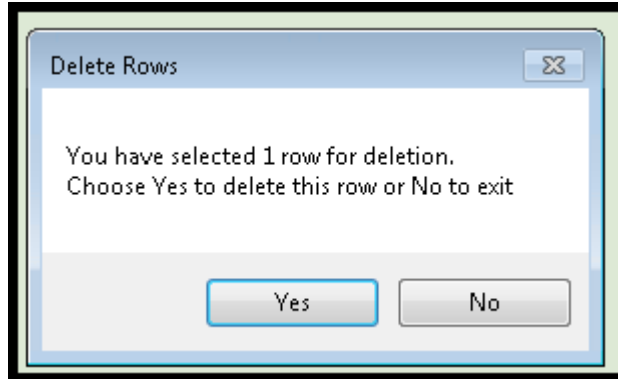
Click “Apply” or “OK” to save.



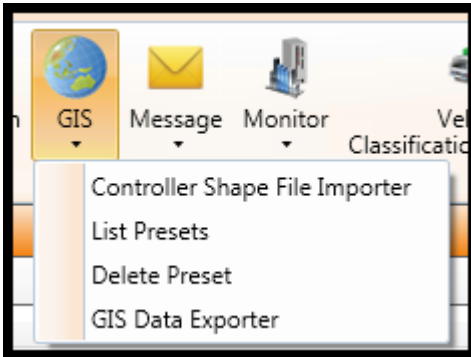
## 6.12.5 Delete Flex Group



To delete a *Flex Group*, navigate to *Definitions...Flex Group...List Flex Groups* from the *Actions Pane*. **ATMS** will display the existing *Flex Groups*. Select the desired *Flex Group* from the list, the option to *Delete Flex Group* becomes available as shown in the figure below. Highlight the target *Flex Group* and select *Delete Flex Group*. A “pop-up” will appear to allow the user to confirm the *Delete* function.

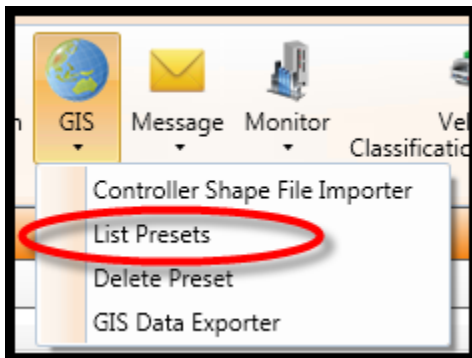


## 6.13 GIS



The *GIS* section of **ATMS** provides a toolset to modify and update core *GIS* files in the system. These functions include deleting *GIS* presets from the *Home* module *GIS Map* view, importing new *GIS* shape files to the system map, and creating a file of *GIS* data that can be exported. Relocating or placing new devices on the *GIS Map* is performed in the *Device and Event Locations* section of the *Definition* module.

### 6.13.1 GIS – List Presets



The *List Presets* option displays the *GIS Presets* that are created on the *Home Page GIS* toolbar. To display the existing *Presets*, select *Definitions...GIS...List Presets*. **ATMS** will display all of the available *Presets* in the main window. When one of these is selected from the list, the option to *Delete Preset* becomes available for selection.

When the list of *Presets* are displayed, it displays four values associated with it, a *Preset ID#*, *Preset Description* (name given to it when created), *User* (creator of preset), and the *Share status* (*Public* setting “Y” = YES or “N” = NO).

When the *Public* value is set to “No”, only the *User* on the list will see that *Preset* option on the *GIS* Toolbar dropdown. When it is set to “Yes”, all users will have access to that *Preset*.

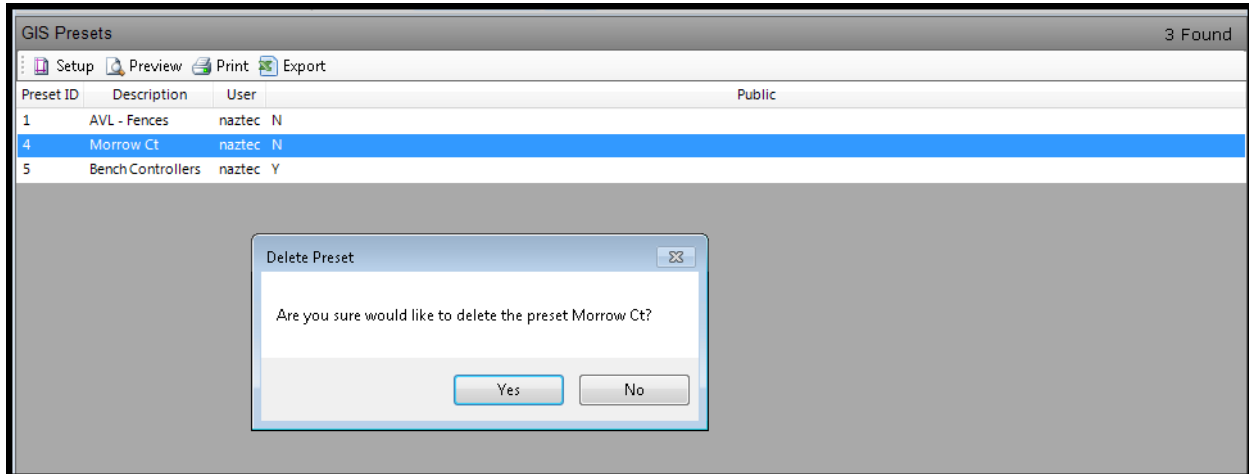
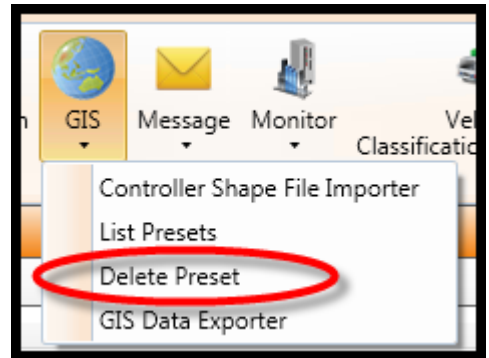
A screenshot of the 'GIS Presets' window in the ATMS software. The window title is 'GIS Presets' and it shows '3 Found'. The window has a menu bar with 'Setup', 'Preview', 'Print', and 'Export'. Below the menu bar is a table with the following data:

Preset ID	Description	User	Public
1	AVL - Fences	naztec	N
4	Morrow Ct	naztec	N
5	Bench Controllers	naztec	Y

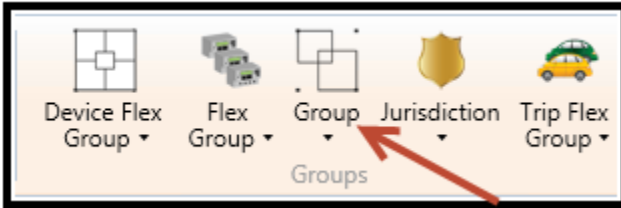
The *Presets* cannot be edited once they are created. If a *Preset* does not have the desired share properties or view, it needs to be deleted and re-created.

## 6.13.2 GIS – Delete Presets

To delete a *Preset*, navigate to *Definitions...GIS...List Presets* from the *Actions* Pane. **ATMS** will display the existing *GIS Presets*. Select the desired *Preset* from the list, the option to *Delete Preset* becomes available as shown in the figure below. Highlight the target *Preset* and select *Delete Preset*. A “pop-up” will appear to allow the user to confirm the *Delete Preset* function.



## 6.14 Groups

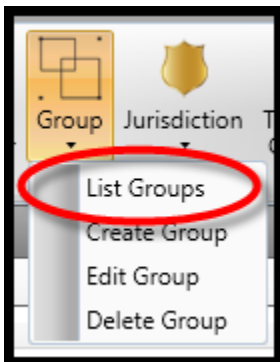


*Groups* are used to define intersections that are associated together and controlled (work) together. A controller can only be assigned to one *Group* in ATMS, so it recommended that your controllers are grouped either as a single, agency-wide *Group*, or as intersections that are physically tied together.

If controllers are required to be members of multiple groupings, use the *Flex Group* method as described above in this section.

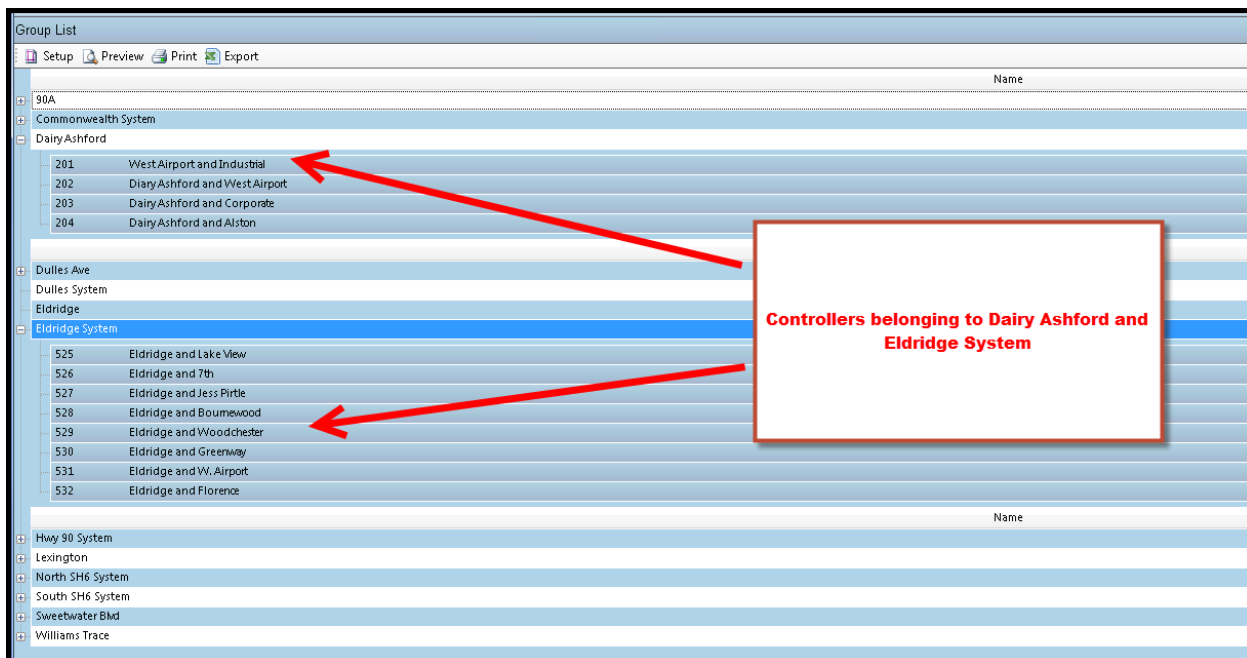
**It is recommended to separate Scout.x controllers from all other versions to ensure efficient Download Real Time, Full Status, and Smart Upload.**

### 6.14.1 List Group

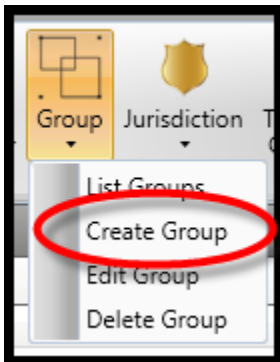


To display the existing *Groups*, select *Definitions...Group...List Groups*. **ATMS** will display all of the available *Groups* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.

You can select the “+” symbol or “double-click” the *Group* name to expand the list. The controllers displayed below the *Group* are the currently assigned controllers. To collapse the list, select “-“ or “double-click” the *Group* name.

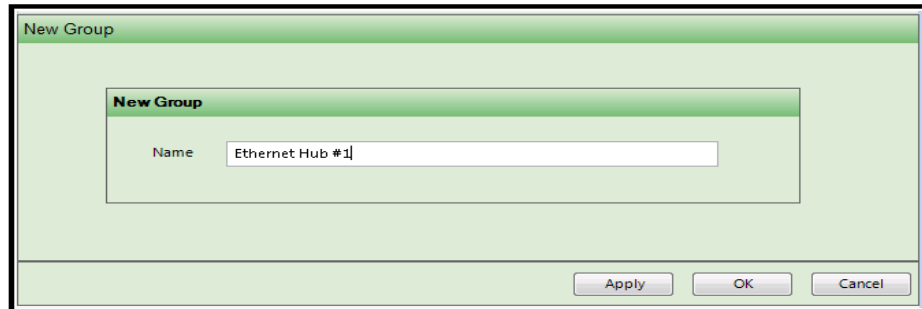


## 6.14.2 Create Group

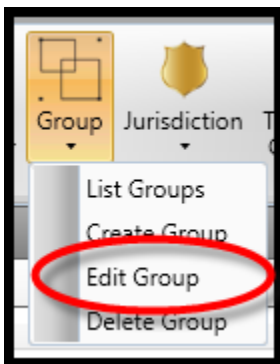


To create a *Group*, navigate to *Definitions... Group... Create Group* from the *Action* pane. A basic setup screen like the one shown below will appear in the main view pane.

First, assign a name for the *Group*. Next, highlight the newly created *Group* and select *Edit Group* as discussed in the section below.



## 6.14.3 Edit Group

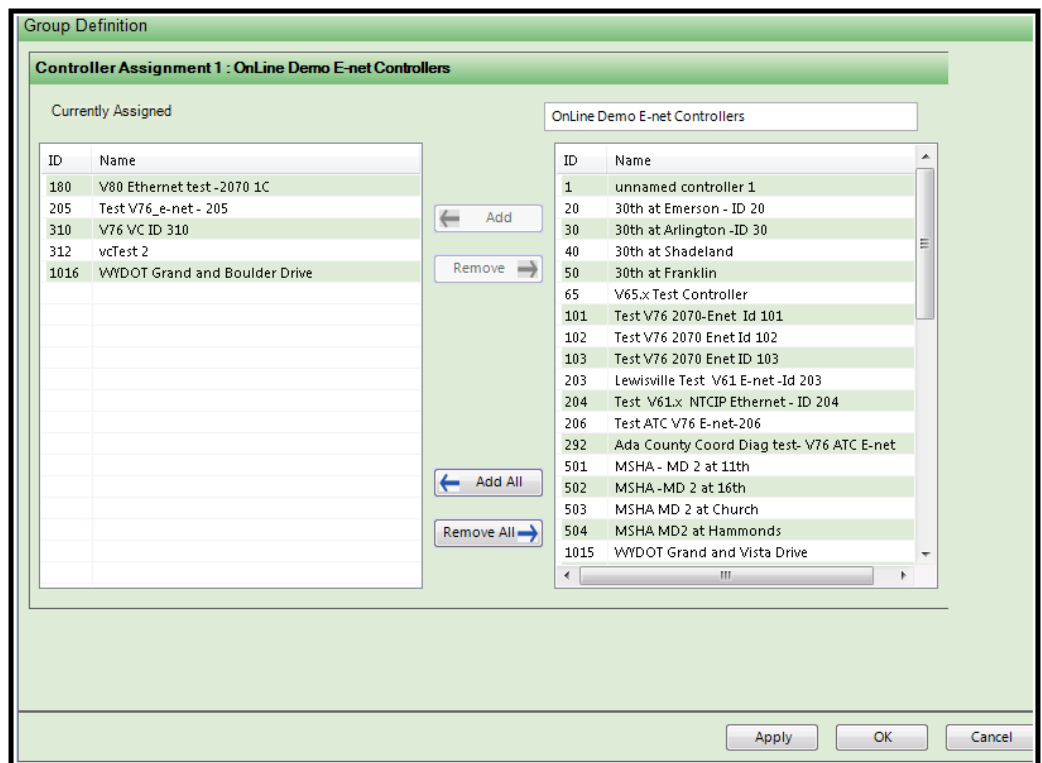


To edit the defined *Groups*, navigate to *Definitions... Group... List Groups* from the *Actions* Pane. **ATMS** will display the existing *Groups* in the system. Select the desired *Group* from the list. The option to *Edit Group* becomes available as shown in the figure below. Highlight the desired *Group*, then select *Edit Group*. The same window as the *Create Group* will appear for editing the parameters.

The list of intersections not belonging to the *Group* will appear on the box to the right. To add intersection(s) to the *Group*, highlight the targeted intersection(s), then select the "Add" button, or "Add All" to place the entire controller list into the *Group*.

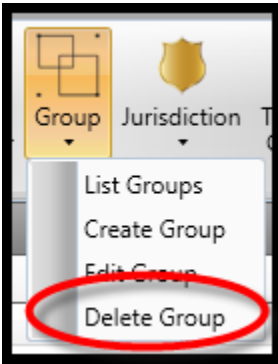
The list of intersections belonging to the *Group* will appear on the box to the left. To remove intersection(s) from the *Group*, highlight the targeted intersection(s), then select the "Remove" button. Selecting "Remove All" will remove the entire controller list from the *Group*.

Click "Apply" or "OK" to save.

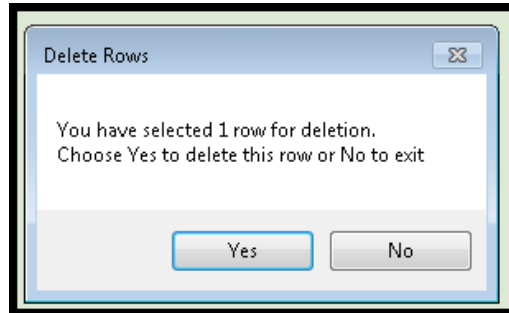




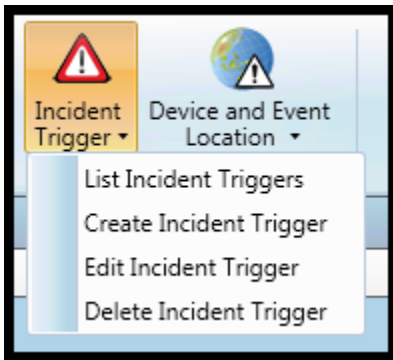
#### 6.14.4 Delete Group



To delete a *Group*, navigate to *Definitions...Group...List Groups* from the *Actions* Pane. **ATMS** will display the existing *Groups*. Select the desired *Group* from the list. The option to *Delete Group* becomes available as shown in the figure below. Highlight the target *Group* and select *Delete Group*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.15 Incident Trigger



Incident Triggers are system-generated controller actions based on reported controller alarm inputs or reaching certain congestion thresholds. These *Incident Triggers* can cause pre-programmed reactions of other Controllers, Cameras, and CMS signs. An example of this would be to cause a complete coordinated arterial to automatically transition to “FREE” operation if a critical intersection in that arterial issued a “Coord Fail” alarm to **ATMS**, while also launching a camera view and instructing the camera to PTZ to a preset to view the street. This feature can be used to solve a variety of problems that cannot be addressed by time-of-day control or traffic responsive operation, or can be used in conjunction with our Traffic Responsive and Adaptive operations. **ATMS’s** Trigger feature has been used successfully in control applications that are not predictable and can be triggered by an alarm response.

### 6.15.1 List Incident Triggers



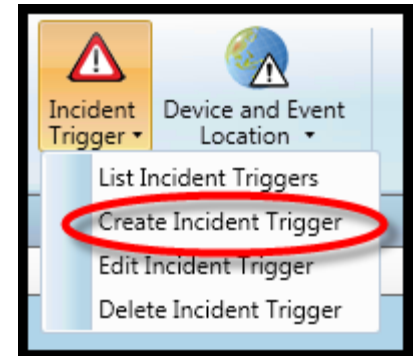
To display the existing *Incident Triggers*, select *Definitions...Incident Trigger...List Incident Triggers*. **ATMS** will display all programmed Incident Triggers in the main window. Note that by selecting one of these from the list, the options to *Edit* or *Delete Incident Trigger* become available as shown in the figure below.

Incident Triggers List																	
Description	Trigger Type	Start Date	Stop Date	Start Time	Stop Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Interval	Interval Type	Pattern/Preempt	Camera	CMS
Trigger-Alarm-Email O/P	Alarm	12/03/2008	12/03/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	02	Minutes(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm Trigger - Power up Alarm - ID 149	Alarm	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm Trigger-Pattern 1	Alarm	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm Trigger - Power up Alarm - ID 149 - Pattern	Alarm	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Congestion Trigger - ID 149 - VOL-HI- CMS	Congestion	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alarm Trigger-Indiantown Rd @ Center St - Preempt 3	Alarm	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Congestion Trigger - ID 149 - VOL-MED- Camera	Congestion	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Alarm Trigger-Indiantown Rd @ Center St - Email	Alarm	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Congestion Trigger - ID 149 - OCC-MED- Preempt 3	Congestion	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Congestion Trigger - ID 149 - OCC-MED- Preempt 3	Congestion	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Congestion Trigger - ID 149 - VOL-MED- Email	Congestion	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm Trigger-Indiantown Rd @ Center St - CMS	Alarm	12/08/2008	12/08/2028	0	1439	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Continuous	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 6.15.2 Create Incident Trigger

To create an Incident Trigger, navigate to *Incident Trigger...Create Incident Trigger* from the *Action* pane as shown to the right. The screen shown below will appear in the main view pane.

The example below illustrates how a preempt command can be sent down to a Flex Group of controllers and simultaneously initiate Camera behavior, a CMS message to the field, and send an e-mail to a group of recipients when an intersection's approach reaches a specified congestion level. Any combination of these behaviors can be initiated by time-of-day, either from a controller's incoming alarm or from a programmed state of congestion. Controller(s) can perform specially commanded Patterns or Preempts but each requires a time value for the Triggered response to protect the operation.



Because *Alarm Triggers* can be activated and de-activated by time-of-day, you may want to vary the pattern, duration and/or flex group assignment by time-of-day and day of week to accommodate varying traffic demands at the interchange.

In the example below, a Preempt 5 command is downloaded to the assigned *Flex Group* to hold for a period of 60 seconds when the monitored intersection's northbound approach reaches a "HIGH" threshold. After this timer expires, the Preempt will release and the controllers will resume normal operation. Special *Flex Groups* can be created solely for the purpose of *Alarm Trigger* operation.

**Note that the Camera and CMS sign responses will remain unless a reversing trigger is programmed or each device is internally programmed to "Time-Out" to a default behavior.**

Any of the alarms listed in Chapter 13 of the NTCIP Controller manual may be used to activate an Incident Trigger. In order for **ATMS** to know about the local triggering event, it must be properly programmed as an "Event" (MM>1>6>1) and an "Alarm" (MM>1>6>4) in the controller.

Also various ATMS Alarms listed in Chapter 4 of this manual may also be used.

To program an *Alarm Trigger*, select a Start and Stop value for *Time Range* and *Date Range* boxes. These values control the window of time that the incoming alarm will cause an automated triggered response.

The *Days* box allows for the “Trigger” only on the selected days, regardless of whether it fits within the Date and Time range selected. Both the *Days* value and the *Start/Stop Time* values work together.

The user must select either an Alarm Based or a congestion based trigger by selecting the specific radial button.

For Alarm-based Triggers, select the *Alarm*, state of the incoming Alarm (*On or OFF*), and *Controller* that will initiate the “Trigger”. For Congestion-based Triggers, select the controller’s approach *Direction* and triggering *Threshold* that will initiate the trigger.

To enable either of these categories, the radial button for the corresponding category **must** be selected (**RED** circle).

The *Trigger Data* portion of this screen allows the user to program the Controller(s), Cameras, CMS signs and their responses to the incoming trigger.

The *By* selection defines the response controller(s) by *Controller*, *Flex Group*, *Group*, or *Master*.

Use the *Select* box to choose the triggered controller(s).

Check the appropriate radial button for the desired response, either “*by Pattern*” or “*by Preempt*”. If a *Pattern* response is chosen, then select a *Pattern #* (1-48) and a *Timer* value, in minutes, for the pattern to run. If a *Preempt* response is chosen, then select a *Preempt #* (1-10) and a *Timer* value in seconds. After the timer has expired, the controller will revert back to Time-of-Day operation.

The screenshot shows the 'Incident Trigger Details' configuration interface. The 'Controller' dropdown is set to 'Test V76 2070-Enet Id 101'. Below it, the 'Congestion' radio button is selected and circled in red. The 'Direction' dropdown is set to 'North' and the 'Threshold' dropdown is set to 'High'. The 'Trigger Data' section shows the 'Pattern/Preempt Trigger' checkbox checked, the 'By' dropdown set to 'Flex Group', and the 'Select' dropdown set to 'Wichita Flex Group'. The 'Timer (Minute)' field is set to '0' with a '(1-255)' range indicator.

The *Timer* value allows for a selection between 1-254 minutes. A value of 255 will keep the Triggered response to operate infinitely and requires a manual reversal to disable the response. If a manual reversal is required, this can be done by downloading a “Revert” pattern to the controller(s) by using the “*Instant Pattern*” function under *Home...Actions...Real-Time...Instant Pattern*.

The *Camera* and *CMS* sections of this screen enable trigger programs for a Camera and/or Changeable Message Sign and their response to the incoming alarm.

For a *CMS Trigger*, check the box to enable trigger. Next select the designated sign in the *CMS* selection box and the *Message* it is to display for the trigger. If a special *Message* is to be displayed that is not available from the drop-down selection, then a new one can be created under *Definitions...Messages...Create Message*.

The *Camera* selection defines the response camera. Next, select a *Preset* number as assigned for the camera in the IV&C Relay Server programming. The IV&C Relay Server program is sold separately and not included in the standard installation of **ATMS**.

*Email Notification* is performed through utilizing *User Distribution* groups. *User Distribution* groups are discussed later in this chapter.

Any number of users can be assigned to a *User Distribution* group, giving added flexibility to this function. When enabled, an *Email Notification* performed each time the corresponding *Incident Trigger* occurs.

Click “Apply” or “OK” to save.

**Incident Trigger Details**

Description: Stop Timing Incident

Time Range: Start 00:00, Stop 23:59

Date Range: 3/20/2014 to 1/1/2050

Days:  Select All,  Sun,  Mon,  Tue,  Wed,  Thu,  Fri,  Sat

Interval: Continuous

Controller: Bench V76 ATCENET- ID 25

Alarm Trigger  
Alarm: Stop Timing, ON

Congestion  
Direction: North, Threshold: Medium

---

**Trigger Data**

Pattern/Preempt Trigger

By: Flex Group

Select: Bench Controllers

Pattern: Flash, Timer (Minute): 3 (1-255)

Preempt: , Timer (Second): 1 (1-9999)

CMS Trigger

CMS: Daktronics CMS Sign # 5

Message: Incident Ahead-Merge to right Lane in 1mile-Please

Camera Trigger

Camera: Eldrige and Jess Pir, Preset: 2

User Distribution: Weekend Operations Group

Email Notification

User Distribution: Weekend Operations Group

The user should not select Email Notifications when doing continuous interval checking.

### 6.15.3 Edit Incident Trigger

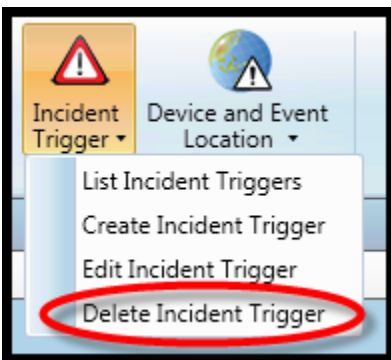


To edit the programmed *Incident Triggers*, navigate to *Definitions...Incident Trigger...List Incident Trigger* from the *Actions* Pane. **ATMS** will display the existing *Incident Triggers*. Select the desired *Incident Trigger* from the list, the option to *Edit Incident Trigger* becomes available as shown in the figure below. When *Edit Incident Trigger* is selected, the same window as the *Create Incident Trigger* will appear in the main window for editing the parameters.

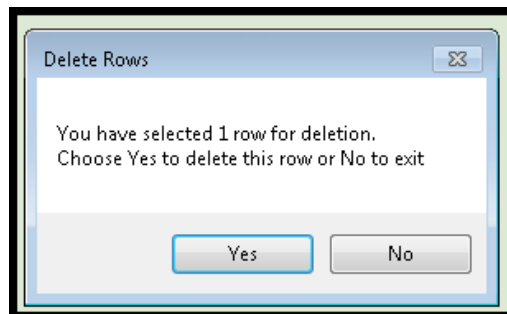
Make your editing changes.

Click “Apply” or “OK” to save.

### 6.15.4 Delete Incident Trigger



To delete an *Incident Trigger*, navigate to *Definitions...Incident Trigger...List Incident Triggers* from the *Actions* Pane, **ATMS** will display the existing *Incident Triggers*. Select the desired *Incident Trigger* from the list, the option to *Delete Incident Trigger* becomes available as shown in the figure below. Select *Delete Incident Trigger*, a “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.16 Jurisdiction

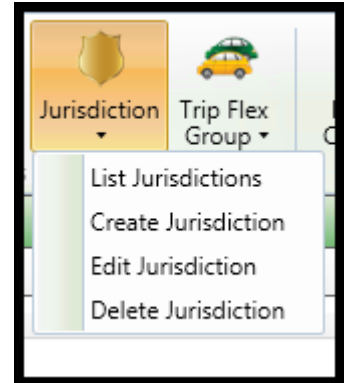
**ATMS** provides to the use of *Jurisdictions* to limit access, editing, and control privileges for departmental grouping within an agency or within an inter-agency architecture. This is a way to enable multiple agencies to share the same database.

A user can be assigned to multiple *Jurisdictions* for enhanced levels of control to multiple sets of controllers.

A controller can be assigned to multiple *Jurisdictions*.

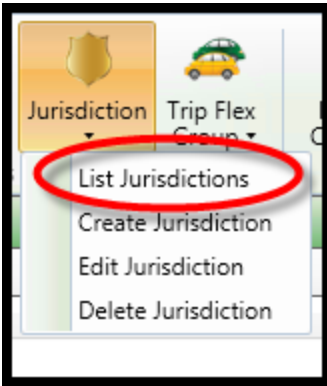
**ATMS** requires that all controllers belong to a *Jurisdiction*. The default *Jurisdiction* during initial setup is named “All”.

Jurisdictional associations for data in the database tables and data displayed on the client have been implemented. These displays and tables include: Recent Alarms, Alarm History, Current Alarms, Copy database, Upload (Streetsync) Sync, Database Conversion list, Controllers via Bing maps, GIS maps, Alarm Notification, Group, Flex Group, Offline List, Incident Trigger, Scheduler lists (by controller, by flex group, by group) Controller List in reports (both Crystal and DevExpress), and the Saved Criteria for reports now consider jurisdictions, In addition the controller list in SynchroGreen also consider jurisdictions.



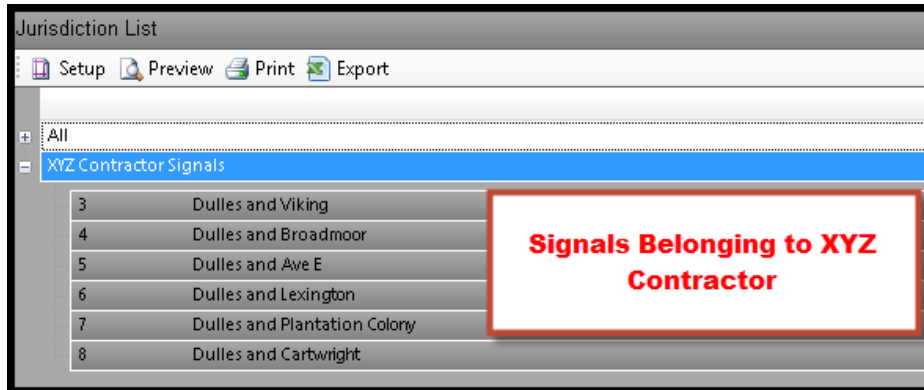
When creating new Controllers and/or Users within **ATMS**, they will need to be assigned to the appropriate Jurisdiction(s). Forgetting to do this will limit the access and control to the new Controller or the new User. **Note: Jurisdictional Controller displays are set via the User Group settings.**

## 6.16.1 List Jurisdictions

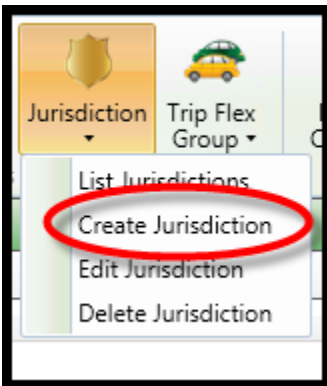


To display the existing *Jurisdictions*, select *Definitions...Jurisdiction...List Jurisdictions*. **ATMS** will display all of the available *Jurisdictions* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.

You can select the “+” symbol or “double-click” the *Jurisdiction* name to expand the list and display the member controllers of each *Jurisdiction*. The controllers displayed below the *Jurisdiction* are the currently assigned controllers. To collapse the list, select “-“or “double-click” the *Jurisdiction* name.



## 6.16.2 Create Jurisdiction

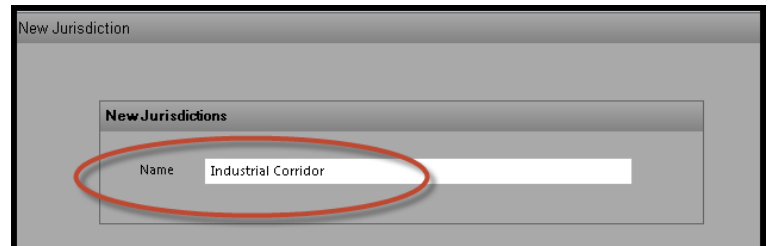


To create a *Jurisdiction*, navigate to *Definitions...Jurisdiction...Create Jurisdiction*. A new window will appear as shown below to name the new *Jurisdiction*.

Complete the *Name* box.

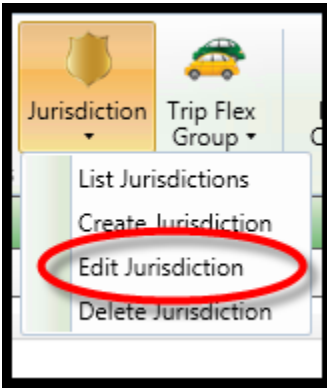
Click “OK” to save and close.

Next, select *List Jurisdictions* and highlight the newly-created *Jurisdiction*. The screen shown below will appear in the main *Overview* pane.





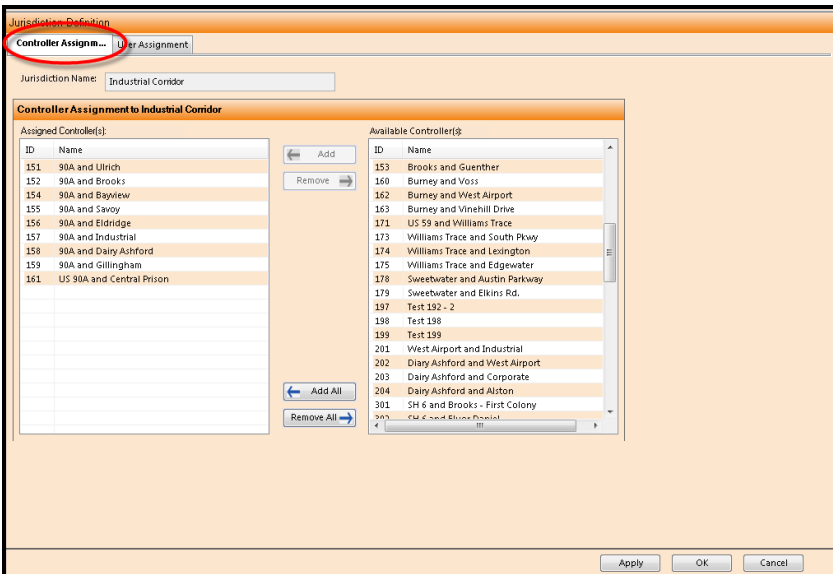
### 6.16.3 Edit Jurisdiction



To edit the defined *Jurisdictions*, navigate to *Definitions...Jurisdiction...List Jurisdictions* from the *Actions* Pane. **ATMS** will display the existing *Jurisdictions* in the system. Select the desired *Jurisdiction* from the list. The option to *Edit Jurisdiction* becomes available as shown in the figure below. Highlight the desired *Jurisdiction*, and select *Edit Jurisdiction*. Two tabs will appear at the top of the main Overview pane, named “Controller Assignment” and “User Assignment”. The same window as the *Create Jurisdiction* will appear for editing the parameters.

### Controller Assignment

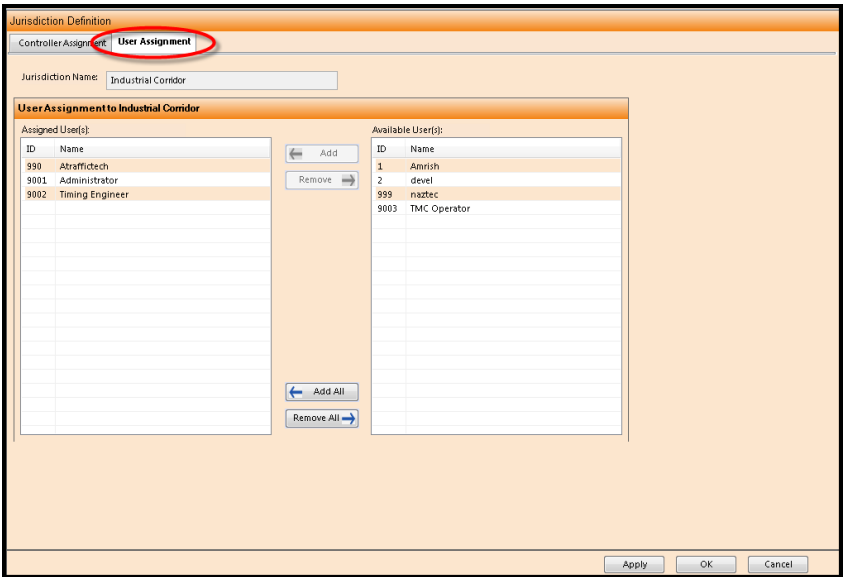
The list of intersections not belonging to the *Jurisdiction* will appear on the box to the right. To add intersection(s) to the *Jurisdiction*, highlight the targeted intersection(s), then select the “Add” button, or “Add All” to place the entire controller list into the *Group*. When a controller has been added to a *Jurisdiction*, it will move to the box on the left titled “Assigned Controllers”.



The list of intersections belonging to the *Jurisdiction* will appear on the box to the left. To remove intersection(s) from the *Jurisdiction*, highlight the targeted intersection(s), then select the “Remove” button. Selecting “Remove All” will remove the entire controller list from the *Jurisdiction*.

### User Assignment

The “User Assignment” tab displays the list of users that are assigned to the chosen *Jurisdiction*. Users can be added or removed from Jurisdictional access from this tab instead of navigating to the *User Definitions* section discussed in Section 6.22 below. Assigning and removing *Users* from a *Jurisdiction* is performed using the same method as controllers.

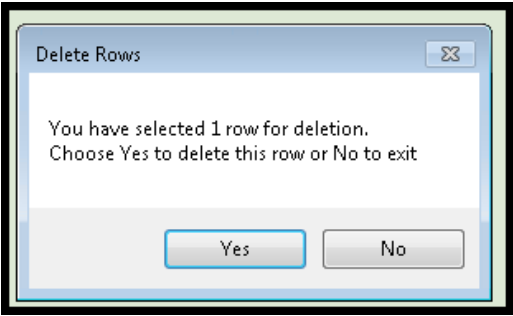
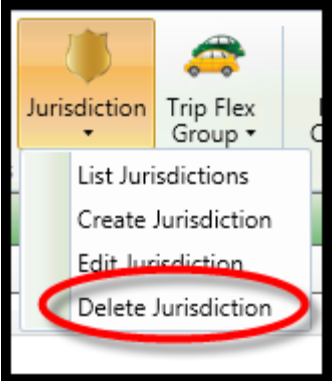


To add or remove the entire list of users from either category, select “Add All” or “Remove All”.  
 Click “Apply” or “OK” to save changes made on either tab.

**Note: Jurisdictional Controller displays are set via the User Group settings.**

#### 6.16.4 Delete Jurisdiction

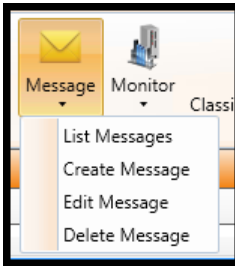
To delete a *Jurisdiction*, navigate to *Definitions...Jurisdiction...List Jurisdictions* from the *Actions* Pane. **ATMS** will display the existing *Jurisdiction*. Select the desired *Jurisdiction* from the list, the option to *Delete Jurisdiction* becomes available as shown in the figure below. Highlight the target *Jurisdiction* and select *Delete Jurisdiction*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



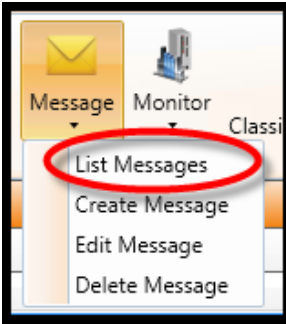
#### 6.17 Messages

This section of **ATMS** allows users with the corresponding user privileges to create and edit the library of *Messages* that can be sent to system Changeable Message Signs.

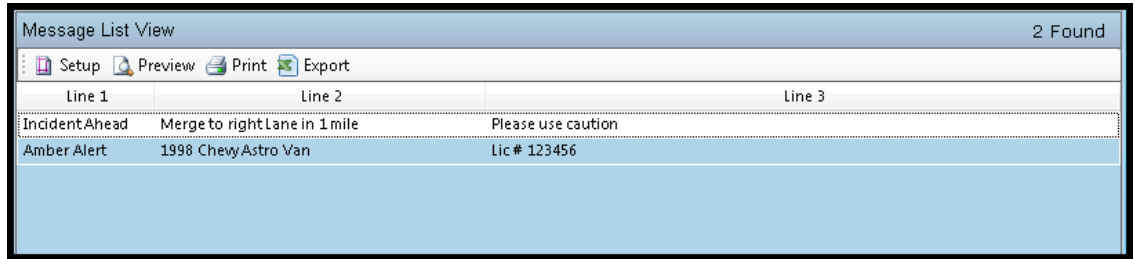
*Messages* are sent to field CMS signs through the *GIS* tab in the *Home* module.



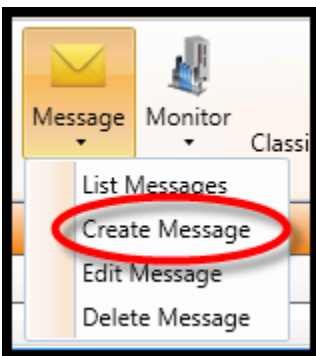
## 6.17.1 List Messages



To display the existing *Messages*, select *Definitions...Messages...List Messages*. **ATMS** will display all of the created *Messages* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.



## 6.17.2 Create Message



To create a new CMS message, navigate to *Definitions...Message...Create Message*. A new window as shown below will appear in the main *Overview* pane.

The “New Message” window will display three line boxes for entry of distinct CMS sentences. Each set of three lines makes one message. The text entry will support full ASCII text as supported by the CMS signs. Each line will support up to 44 characters.

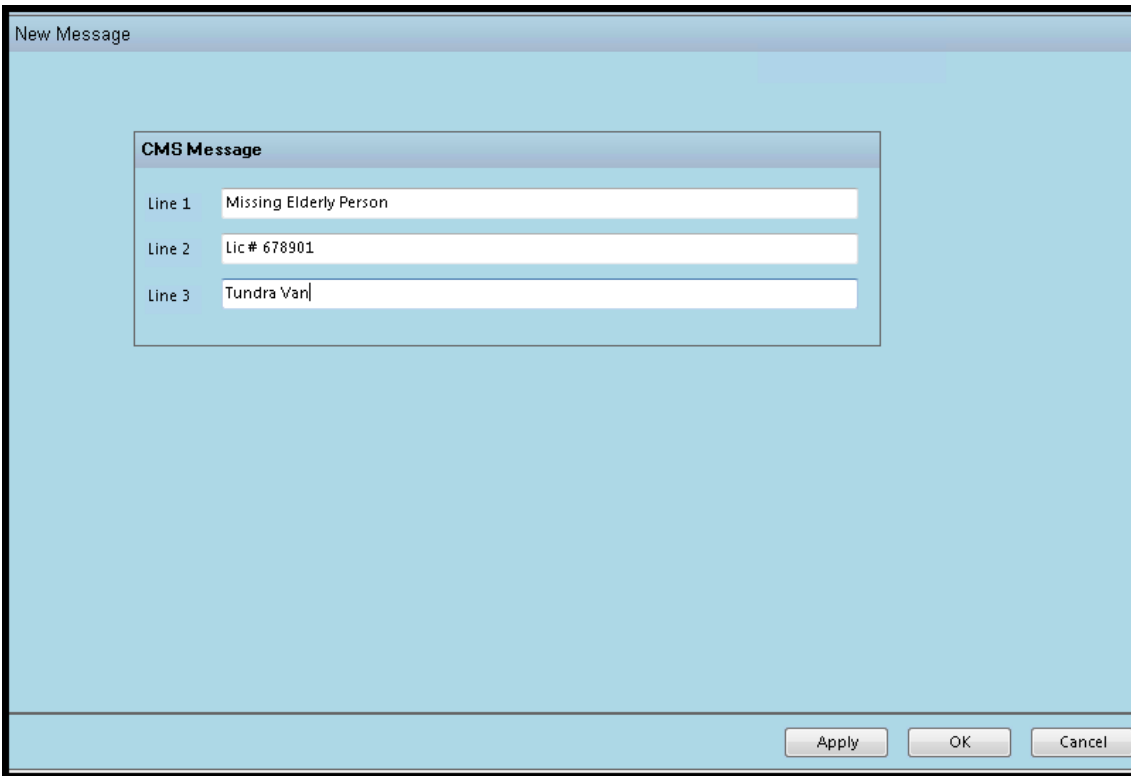
A minimum of one line needs to be completed for a valid *Message*. All three lines do not need to be present for a valid *Message*.

Click “Apply” or “OK” to save each message.

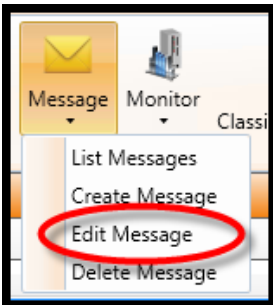
If a desired CMS type is not found in the **ATMS** database, contact your Cubic | Trafficware representative.

*CMS* signs are added to the *GIS Map* through the *Device and Event Locations* function in the *Definitions* module.

Sending *Messages* are performed through the *CMS* layer of the *GIS Map*.



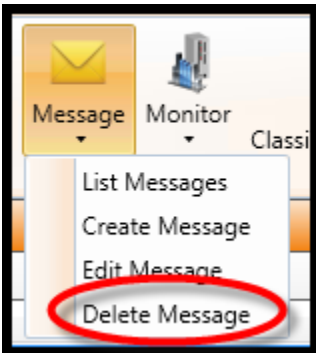
### 6.17.3 Edit Message



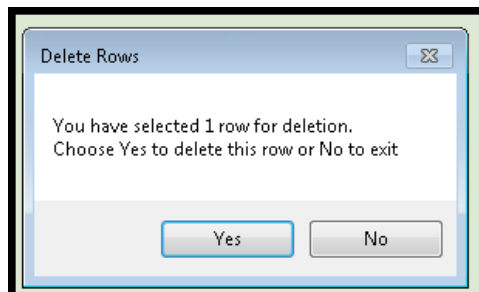
To edit the defined *Messages*, navigate to *Definitions...Messages...List Messages* from the *Actions* Pane. **ATMS** will display the existing *Messages* in the system. Select the desired *Message* from the list. The option to *Edit Message* becomes available as shown in the figure below. Highlight the desired *Message*, then select *Edit Message*. The same window as the *Create Message* window will appear for editing the parameters.

Make your changes and click “Apply” or “OK” to save.

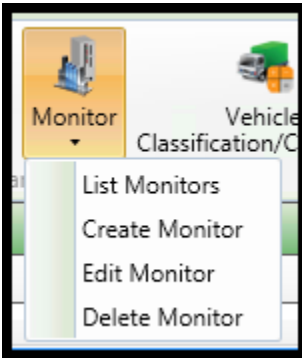
### 6.17.4 Delete Message



To delete a *Message*, navigate to *Definitions...Message...List Messages* from the *Actions* Pane. **ATMS** will display the existing *Messages*. Select the desired *Message* from the list, the option to *Delete Message* becomes available as shown in the figure below. Select *Delete Message*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.18 Monitor



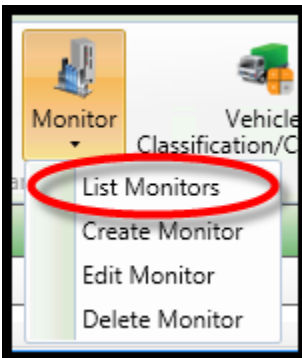
This section of **ATMS** sets up the system to automatically retrieve log reports from Cubic | Trafficware brand Conflict Monitor Units (CMU's) and Malfunction Monitor Units (MMU's). This feature will communicate with the monitors using Ethernet through the assigned IP address or Serial through the corresponding controller's serial port.

For serial communications to the Cubic | Trafficware monitor, a connection from the controller's "PC Print" DB25 port to the monitor DB9 port is required. Contact your Cubic | Trafficware representative for the required cable for this interface.

To set up the monitor interface on the controller, navigate to the Communication General Parameters screen on the controller (MM>6>1). Set the PC Print port to "Monitor". Next, set the Communication Port Parameters for the PC Print port (MM>6>2>2) to the corresponding monitor serial port rate.

Cubic | Trafficware monitors with a programmable LCD screen have a programmable serial port setting. If your Cubic | Trafficware monitor is not programmable, consult your manual for the fixed serial port setting.

### 6.18.1 List Monitors



To display the existing *Monitors*, select *Definitions...Monitors...List Monitors*. **ATMS** will display all of the available *Monitors* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* become available for selection.

Controller ID	Controller Name	Type	IP
25	Bench V76 ATCENET- ID 25	Naztec MMU Ethernet	192.168.104.175
8	Dulles and Cartwright	Naztec CMU/MMU RS232	
151	90A and Ulrich	Naztec MMU Ethernet	192.168.100.038

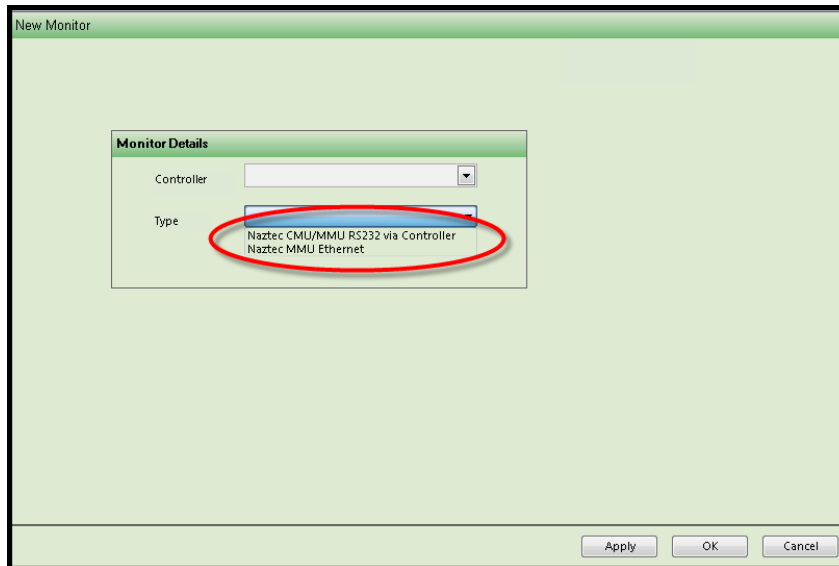
## 6.18.2 Create Monitor



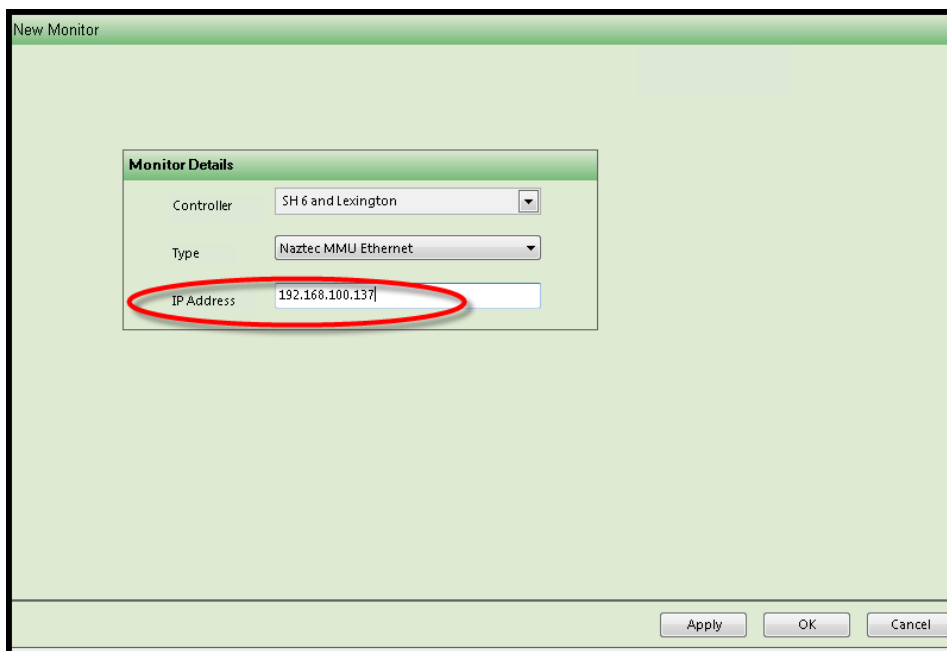
To create a new *Monitor*, navigate to *Definitions...Monitor...Create Monitor*. A new window as shown below will appear in the main *Overview* pane.

Enter the *Name* of the monitor. Next, enter the monitor *Type* (either IP or RS-232). If a RS-232 monitor is selected, **ATMS** will instruct the associated controller to retrieve the monitor data via the serial connection in the cabinet

Click “Apply” or “OK” to save all changes. Select “Cancel” to exit without saving any changes since you entered the screen.

A screenshot of the 'New Monitor' dialog box. The 'Monitor Details' section has a 'Controller' dropdown menu and a 'Type' dropdown menu. The 'Type' dropdown is open, showing two options: 'Naztec CMU/MMU RS232 via Controller' and 'Naztec MMU Ethernet'. The first option is selected and circled in red. At the bottom of the dialog are 'Apply', 'OK', and 'Cancel' buttons.

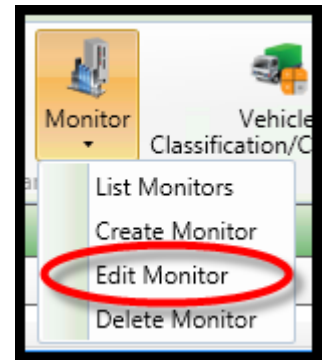
When *Cubic | Trafficware MMU Ethernet* is selected for the type, a new box will appear to enter the *IP Address*. When the IP addressing method is used, **ATMS** will communicate directly with the monitor to retrieve the data. A controller connection is not used with this method.

A screenshot of the 'New Monitor' dialog box. The 'Monitor Details' section has a 'Controller' dropdown menu set to 'SH 6 and Lexington', a 'Type' dropdown menu set to 'Naztec MMU Ethernet', and an 'IP Address' text input field containing '192.168.100.137'. The IP address field is circled in red. At the bottom of the dialog are 'Apply', 'OK', and 'Cancel' buttons.

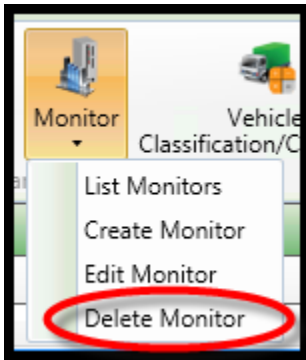
### 6.18.3 Edit Monitor

To edit a defined *Monitor*, navigate to *Definitions...Monitors...List Monitors* from the *Actions* Pane. **ATMS** will display the existing *Monitors* in the system. Select the desired *Monitor* from the list. The option to *Edit Monitor* becomes available as shown in the figure below. Highlight the desired *Monitor*, then select *Edit Monitor*. The same window as the *Create Monitor* window will appear for editing the parameters.

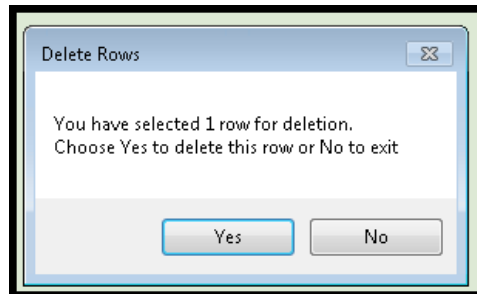
Make your changes and click “Apply” or “OK” to save.



### 6.18.4 Delete Monitor



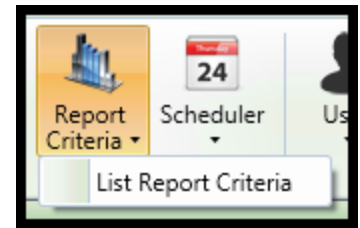
To delete a *Monitor*, navigate to *Definitions...Monitor...List Monitors* from the *Actions* Pane. **ATMS** will display the existing *Monitors*. Select the desired *Monitor* from the list, the option to *Delete Monitor* becomes available as shown in the figure below. Select *Delete Monitor*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.19 Report Criteria

The *Report Criteria* list is a list of saved report templates from the *Reports Module*. Saving commonly used reports to the *Report Criteria List* makes report generation quick and easy in future uses.

In the *Search Engine* of the *Reports Module* a check box is available for “Save Criteria” as shown below:

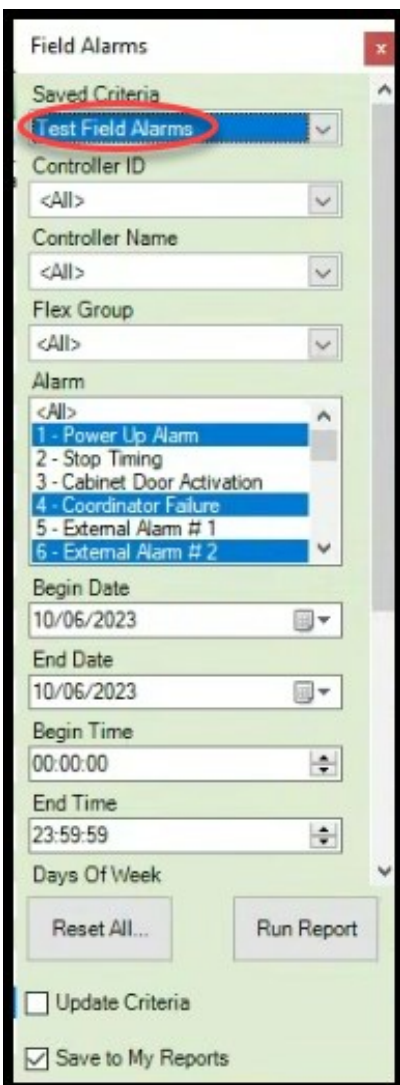
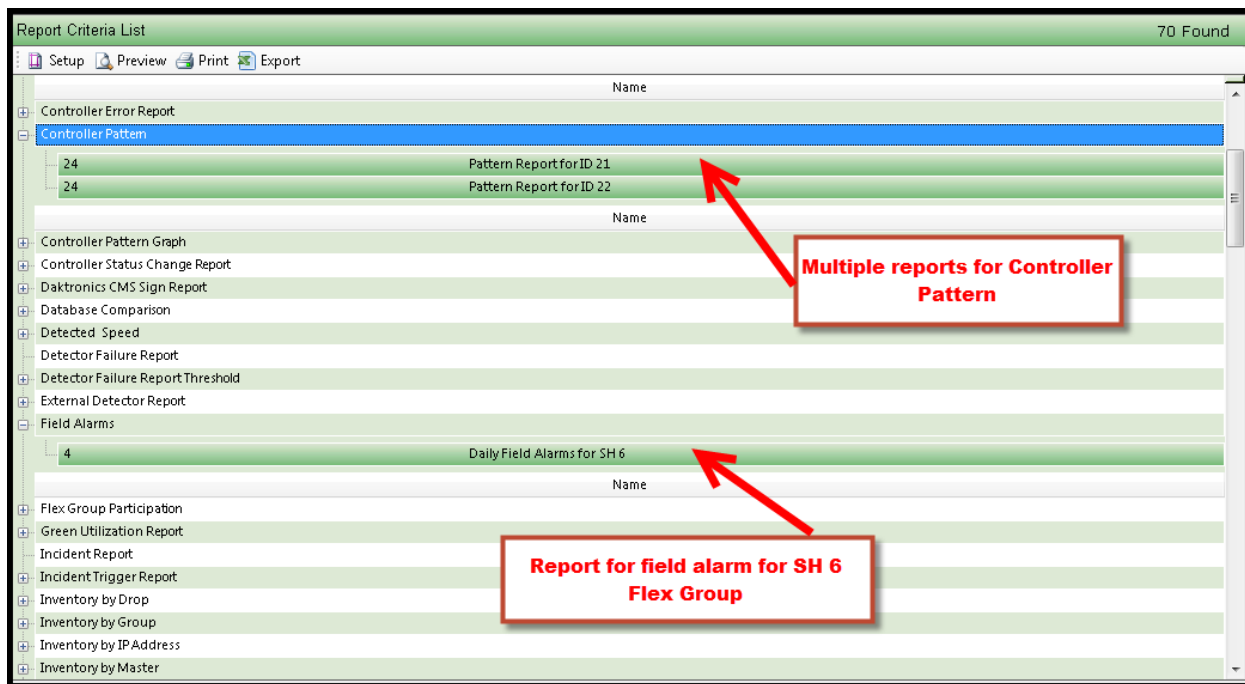
A screenshot of the 'Field Alarms' report configuration dialog box. It contains several fields for configuration: Controller ID, Controller Name, Flex Group, Alarm (a list with items like '1 - Power Up Alarm', '2 - Stop Timing', etc.), Begin Date, End Date, Begin Time, End Time, Days Of Week, and buttons for 'Reset All...' and 'Run Report'. At the bottom, there are two checked checkboxes: 'Save Criteria' and 'Save to My Reports'.

If this box is checked, upon selecting the “Run Report” button to generate a report a dialog box will appear to name and save all of the *Report Criteria*:

A screenshot of the 'Report Criteria Details' dialog box. It has a text field for 'Criteria Name' containing 'Daily Field Alarms for SH 6', which is circled in red. Below it is a checked checkbox for 'Email Notification' and a dropdown menu for 'User Distribution' set to 'Weekend Operations Group'. At the bottom are 'OK' and 'Cancel' buttons.

Once one or more *Report Criteria* have been saved, they are listed in the *Report Criteria List* in the *Definitions Module*. To view the list or delete one of its entries, navigate to *Definitions...Report Criteria...List Report Criteria*. The full list of all available reports will appear in the main window. To view a saved *Report Criteria* template for each report type, you can select the “+” symbol or “double-click” the report name to expand the list and display the templates of each report. To collapse the list, select “-” or “double-click” the report name.

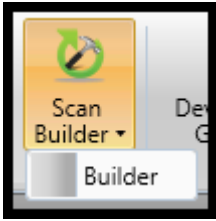




When you return back to that same report, in this example the *Field Alarms* report, a new selection box will appear at top of the *Search Engine* window named “Saved Criteria”. The available selections in this box will correspond to the *Report Criteria List* for each report.

If a report template does not exist for a report type, then the “Saved Criteria” selection box will not appear.

## 6.20 Scan Builder

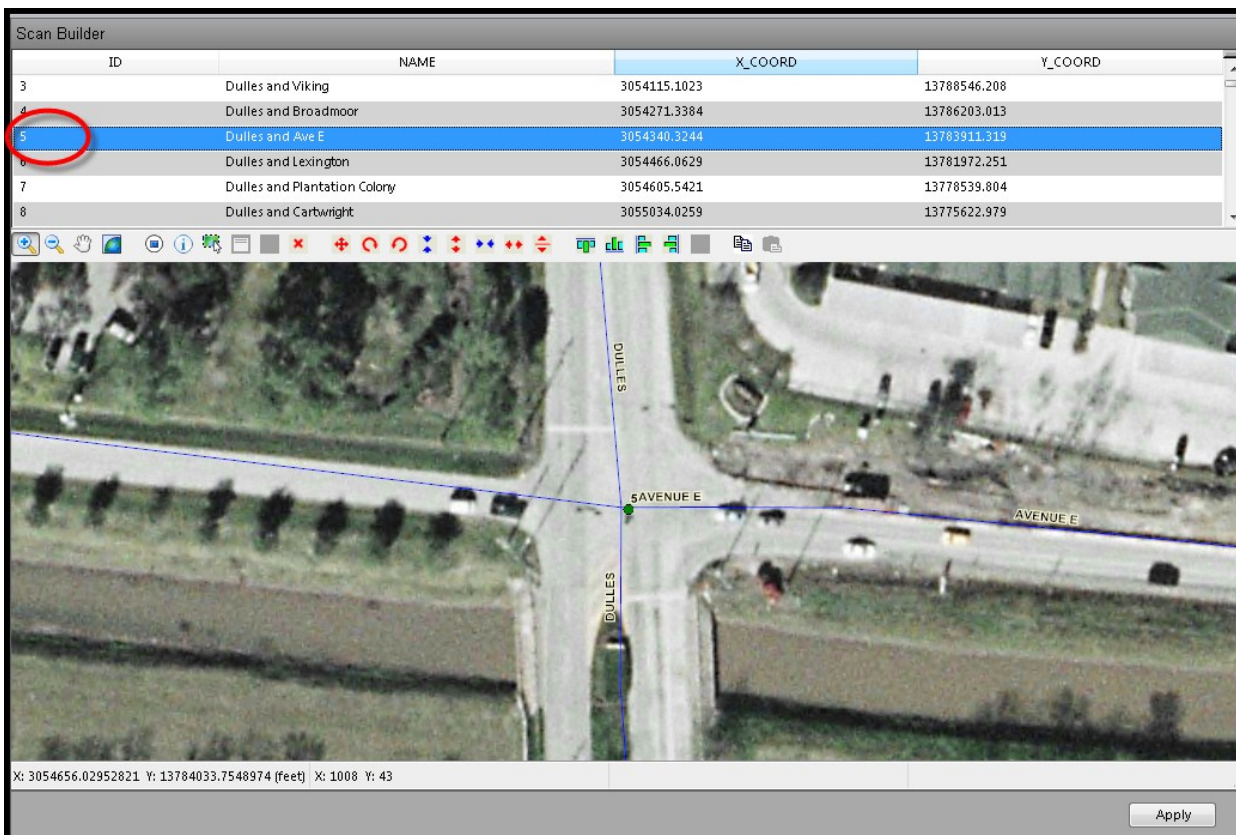


The *Scan Builder* utility enables the **ATMS** “Full Status” polling, which includes all controller inputs and outputs, to be displayed as a distinct “Scan Data” layer on the *GIS Map*. Due to the unique design of each intersection and display preferences of each customer, each intersection must be built by the *Scan Builder* utility to display within the “Scan Data” layer. Without creating a *Scan Screen* for each intersection, the *GIS-Scan Data* layer will not display when selected.

To begin building the Scan Layer, navigate to *Definitions...Scan Builder...Builder*. The *Scan Builder* utility will appear in the main *Overview* pane. The upper half of the *Overview* pane will display the controller list, and the bottom will display the *Builder* tool.

To begin building a *Scan Screen*, select the intersection you wish to build. When the intersection is highlighted, the GIS map on the bottom half of the screen will zoom to a localized view of the intersection. You can zoom in

 or zoom out  for a better view to begin your work.



The screenshot displays the Scan Builder utility interface. At the top, a table lists several intersections. The intersection 'Dulles and Ave E' (ID 5) is highlighted with a red circle. Below the table is a toolbar with various icons for navigation and editing. The main area shows an aerial GIS map of the intersection, with 'DULLES' and '5 AVENUE E' labeled. The map shows a road intersection with a green dot at the center. At the bottom left, the coordinates are displayed: X: 3054656.02952821 Y: 13784033.7548974 (feet) X: 1008 Y: 43. An 'Apply' button is located at the bottom right.

















ID	NAME	X_COORD	Y_COORD
3	Dulles and Viking	3054115.1023	13788546.208
4	Dulles and Broadmoor	3054271.3384	13786203.013
5	Dulles and Ave E	3054340.3244	13783911.319
6	Dulles and Lexington	3054466.0629	13781972.251
7	Dulles and Plantation Colony	3054605.5421	13778539.804
8	Dulles and Carwright	3055034.0259	13775622.979










## Scan Builder Toolbar


The *Scan Builder* navigation is performed by selecting a toolbar function at the top of the GIS map:

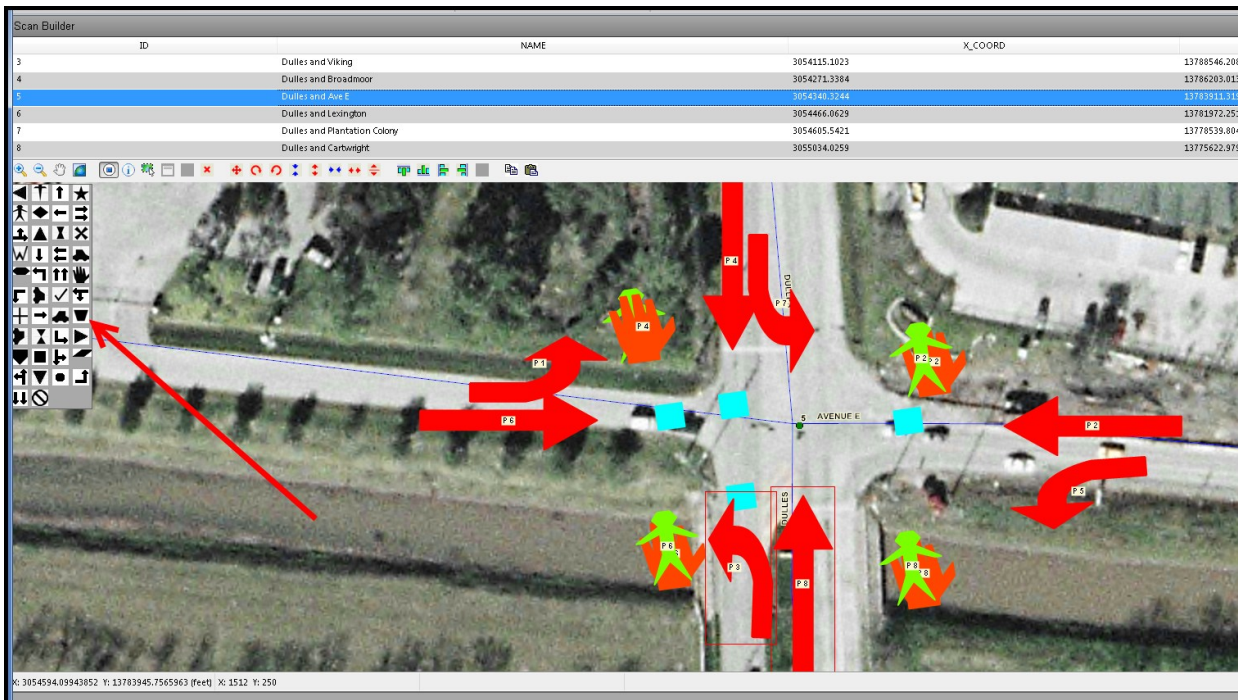


As described above, both layer points must be checked on the *Legend*, then select one of the following icons:

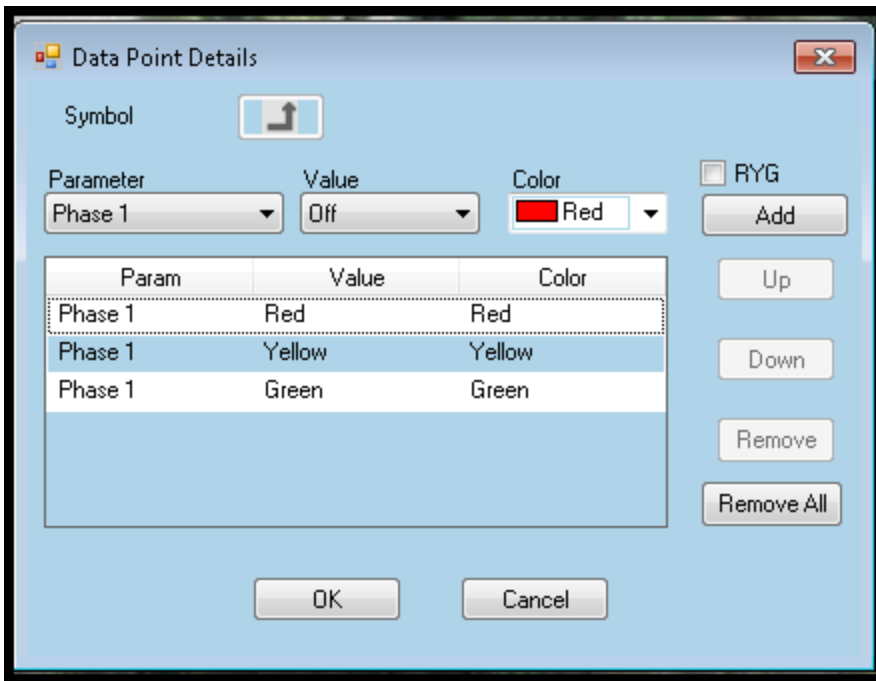
-  **Zoom-In** – Selecting this function will allow the user to click on a point on the map and wrap around a desired area to zoom.
-  **Zoom-Out** – After selecting this, clicking once on the map will zoom out 1 measure of extent.
-  **Pan** – This enables the user to “grab” the map and slide it in any direction.
-  **Full Extent** – By clicking this icon, the GIS map will zoom out to the fullest extent.
-  **Add Shape** – By selecting this icon, the editor will open the builder window to place an object on the GIS map.
-  **Information** – Selecting this function will provide real-time information of the data point using a “Hover Balloon”, by placing the mouse over the desired map object.
-  **Select Object** – Selecting this function enables a specific Scan object to be moved or modified in the *Scan Builder*.
-  **Edit Data Point** – This function enables editing the selected Scan object parameters.
-  **Copy Data Point** – This function enables copying of a selected Scan data point to paste to another area of the Scan Screen.
-  **Delete Shape** – By selecting this option, the targeted scan point will be removed from the GIS map.
-  **Move Object** – Selecting this option will enable an object to be moved by the mouse.
-  **Rotate Clockwise** – This option will rotate the selected object clockwise each time it is clicked.
-  **Rotate Counterclockwise** – This option will rotate the selected object counterclockwise each time it is clicked.
-  **Length Down** – This option will shorten the selected object each time it is clicked.
-  **Length Up** – This option will heighten the selected object each time it is clicked.
-  **Width In** – This option will narrow the selected object each time it is clicked.

-  **Width Out** – This option will widen the selected object each time it is clicked.
-  **Flip Object** – This option will vertically flip the object.
-  **Align Top** – This option aligns the selected objects to the top object's tag.
-  **Align Bottom** – This option aligns the selected objects to the bottom object's tag.
-  **Align Left** – This option aligns the selected objects to the leftmost object's tag.
-  **Align Right** – This option aligns the selected objects to the rightmost object's tag.
-  **Undo** – This option will reverse the last action.
-  **Copy Intersection**– This option will copy all of the data points to paste to a similarly-designed intersection.  **Paste Intersection**– This option will paste the copied intersection data points to the next selected intersection.

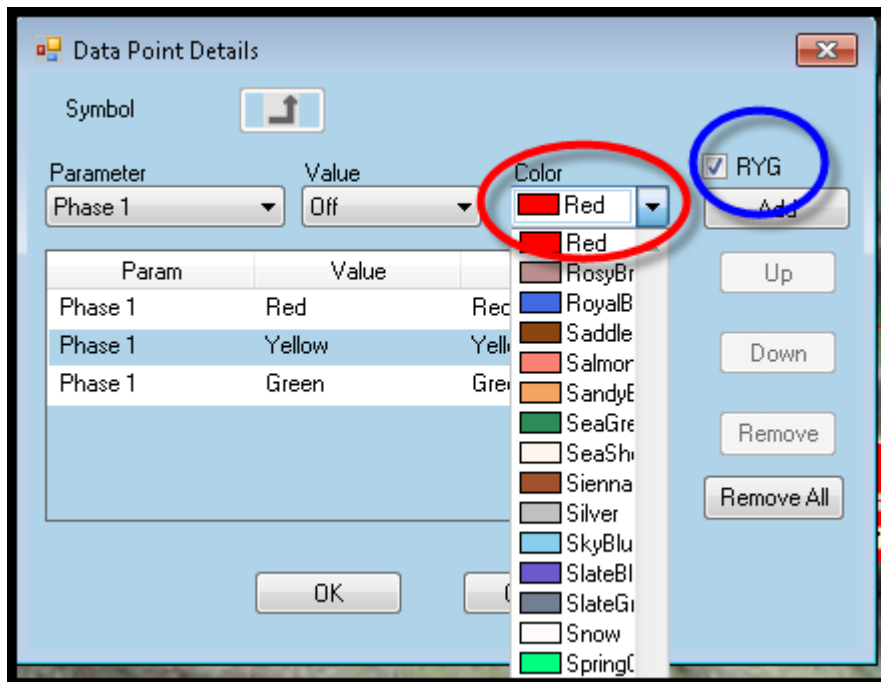
To begin the *Scan Builder* process, select the *Add Shape*  icon. A scan builder shape pallet will appear on the screen. The *Symbols* will be accessible in a window. Select a symbol (shape) and move to the area on the window where you would like to place the symbol. The *Symbol* selection opens a window of symbols that you can assign to the scan object.



Once the shape is placed on the map, the window shown below will appear. The window provides the ability to assign multiple values for each scan point. The screen below shows assignment of **RED**, **YELLOW**, and **GREEN** for Phase 2.



The *Parameter* value is the controller output value such as an active Vehicle Phase, Pedestrian Phase, Overlap, Detector, etc., that is collected during the “Full Status” scan. The *Value* selection allows selection of the specific output status, such as **RED**, **YELLOW**, and **GREEN** for the associated *Parameter*. The *Color* selection provides a custom color selection for the *Parameter* and *Value* selections. ATMS will automatically associate the matching *Color* to the *Value*, such as green to green, yellow to yellow, and red to red. The selection of a different *Color* might be preferred when the coloring of the GIS map background is too similar to the standard Green/Yellow/Red to provide adequate contrast.

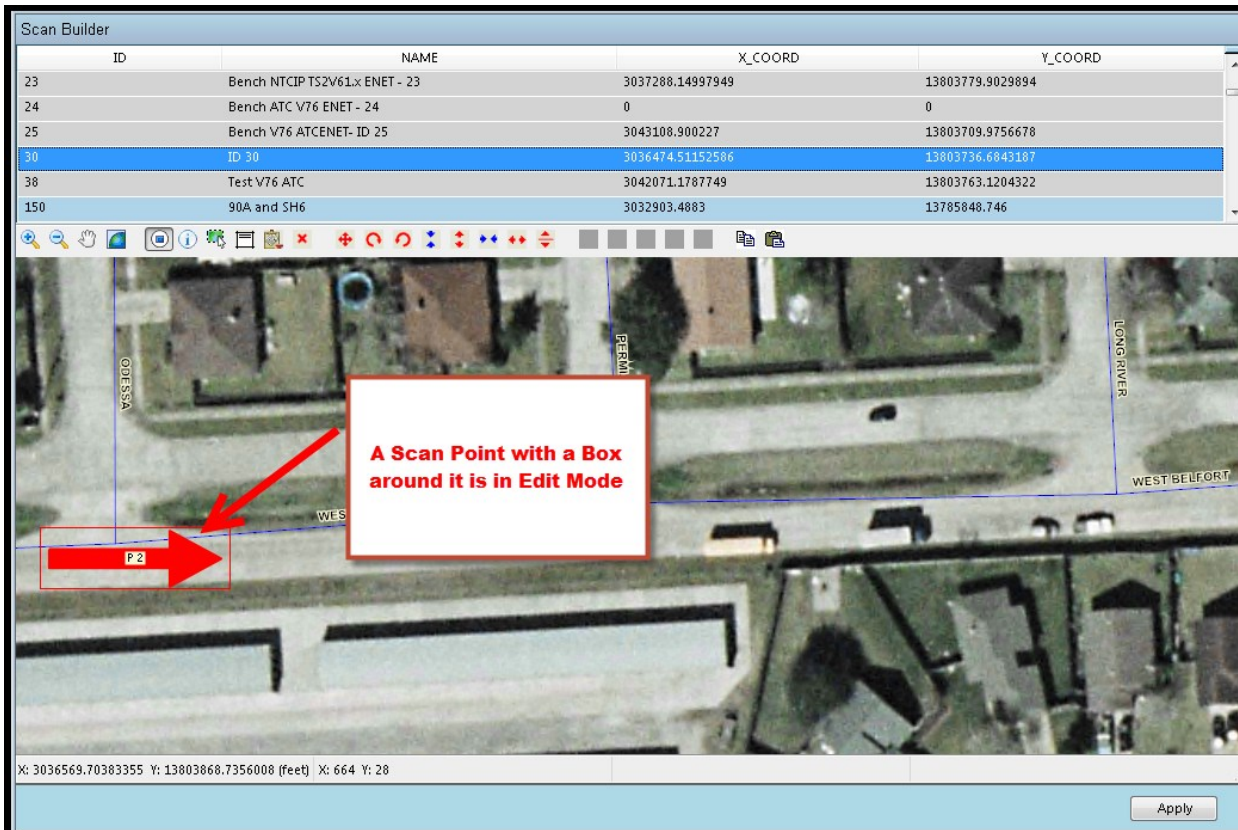




The **BLUE** circle in the above picture shows the *RYG* option. By checking this box, the *Scan Data* window will automatically populate **RED**, **YELLOW**, and **GREEN** values for the selected *Parameter*.

To *Add*, *Remove*, or *Remove All* objects on the *Scan Builder*, highlight the parameter in the builder window, then select the action.

Select “OK” to save and place the scan point on the intersection map or “Cancel” to exit. After selecting “OK”, the window will close, and the *Scan Builder* will place the scan object on the map at the next point the user clicks.


Select “Apply” to save. Failure to do so will cause all of your previous work to be lost back to the last time the *Scan Builder* work was saved.




Continue the *Scan Builder* process until all of the desired data points have been added for each parameter of the intersection. Each additional data point can be created either through the *Add Shape*  icon or by the *Copy Data Point*  icon if it will use the same parameters.


When the data point has been placed on the map, it is still in “Edit Mode”, as shown above. Any data point on the *Scan Builder* with a box around it is in “Edit Mode”, and can be affected by the next editing action from the toolbar. It is possible for more than one object to be in “Edit Mode” at one time, and for an editing action to affect multiple data points at one time.


From the “Edit Mode” state, you can select actions such as *Edit*, *Copy*, *Delete*, *Move*, *Alignment*, and other actions such as resizing and rotating. All of these actions are defined with their corresponding toolbar icons at the beginning of this section. A data point that is not in “Edit Mode” will only display the data object and not have the box around it. If you need to *Edit* or *Move* an existing data point that is not in “Edit Mode”, choose the



*Select Object*  icon. After this, the next data point(s) you choose will appear with the “Edit Mode” box around it. To *Select* more than one object, hold the “Ctrl” key as you *Select* each desired object.






A data point parameter can be edited after it has been created, such as changing a *Color* or *Symbol*. Editing a data point parameter can only be performed one data point at a time. After choosing the targeted data point,


select the *Edit Data Point*  icon. The same setup window will appear as during the creation process. Make your edits and click “OK” to save and close the window.

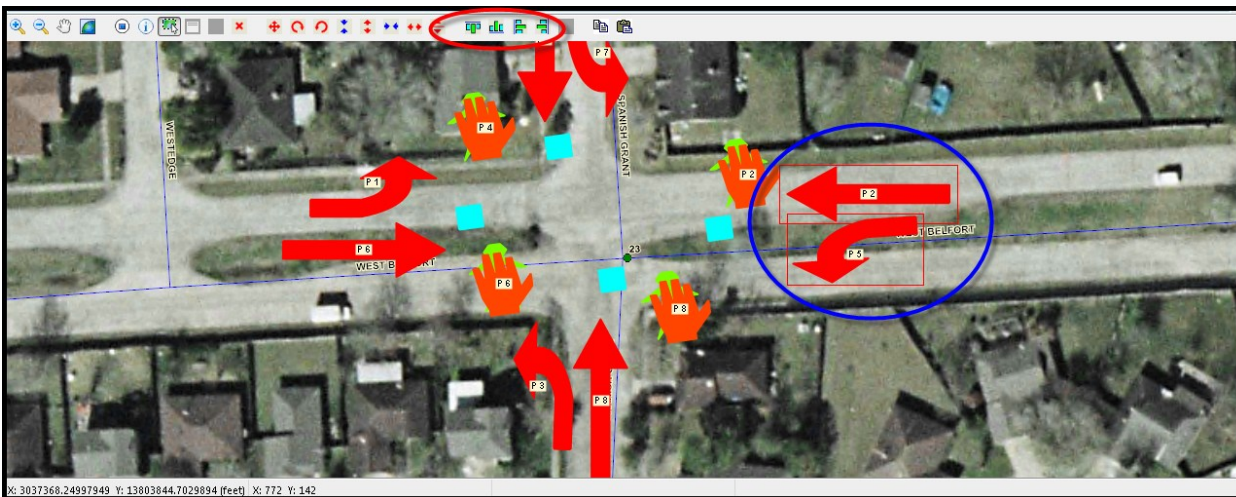
To delete a data point, select the object so it is identified with the “Edit Mode” box. Select the *Delete Shape*  icon to remove the data point from the *Scan Builder*.

A data point can be moved in a dragging fashion by clicking on a data point in “Edit Mode”, choosing the *Move Object*  icon and dragging it to the desired location.






Using the *Clockwise*  and *Counter-clockwise*  *Rotation* icons, the selected point(s) will rotate one measure of extent for click of the rotating icon. Several rotation selections may be necessary to achieve the desired data point positioning.

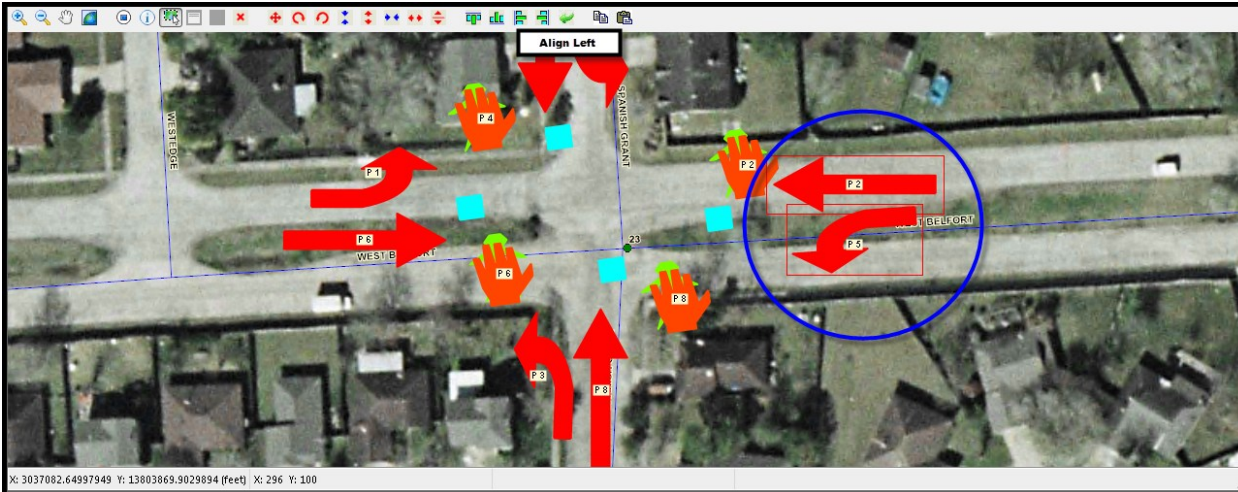
Objects can be resized and rotated to fit the intersection geometry and desired look. These actions include making the data point(s) taller , shorter , wider , and narrower . All of these actions are based on the object’s vertical position. For example, if an “Arrow” parameter is on its side, pointing right or left, the  icon will lengthen the point from the tip of the arrow to its base.



The use of the *Flip Object*  icon will vertically flip the object (top to bottom).

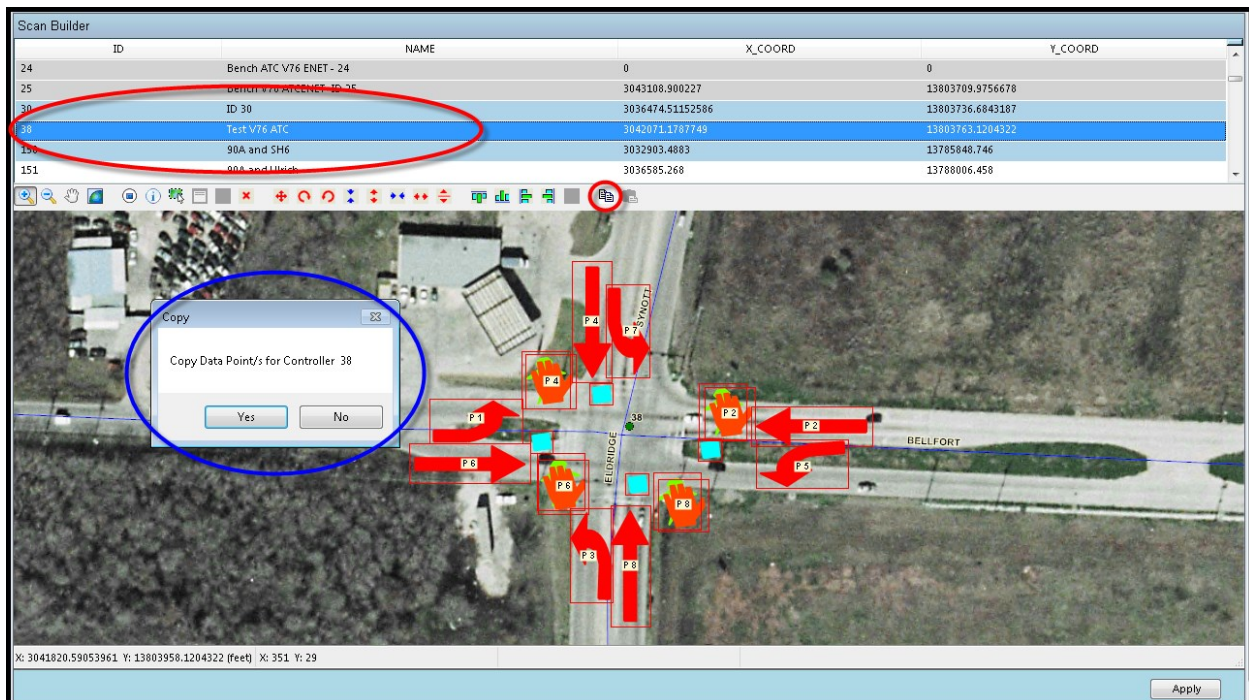


The four *Alignment* actions (**RED circle**) can be used to align multiple data points based on the corresponding side of their data labels. The positioning options will align the data objects based on the outer-most label edge of the selected data points. In the example above (**BLUE circle**), the two arrows for the Phase 1 and Phase 6 are different sizes. If you desire to align the objects based on their data labels, the *Alignment* action can quickly and accurately do this.


The *Align Right*  and *Align Left*  functions should be used for the horizontal data points. The *Align Top*  and *Align Bottom*  functions should be used for the vertical data points. The example below shows how the *Align Left*  feature moved the bottom data point to align to the “Left Edge” of the top data point.

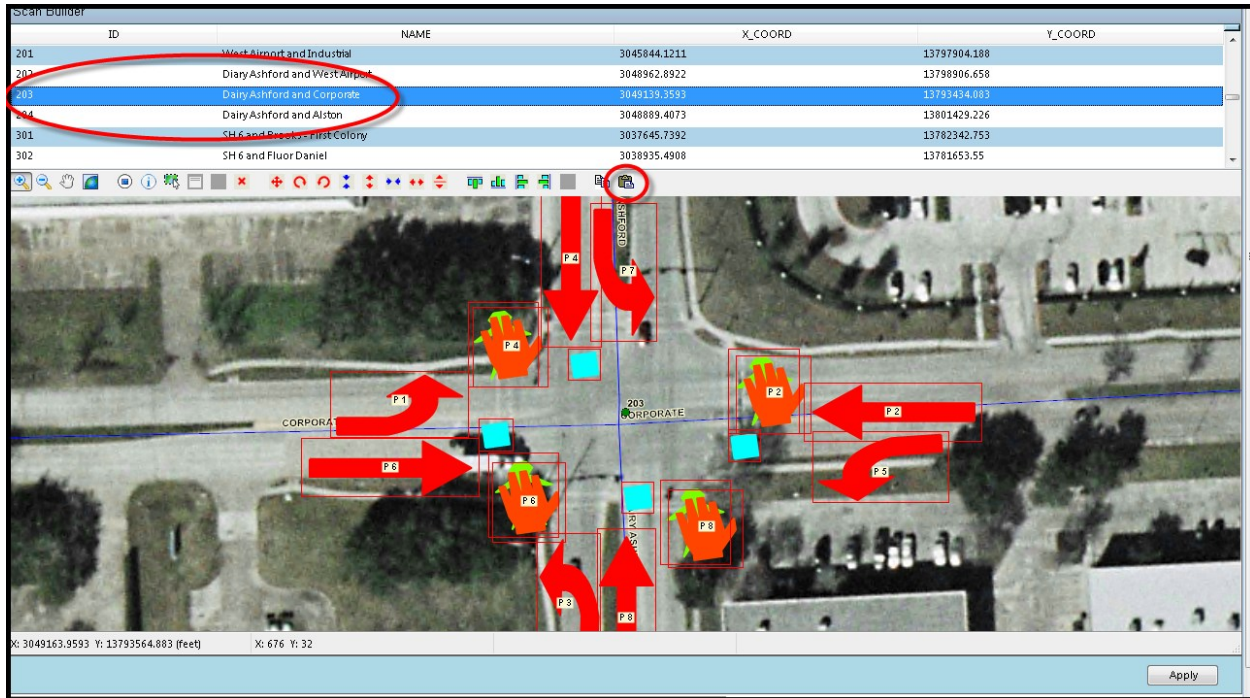



The *Scan Builder* provides the ability to *Copy* data point sets from one intersection to another. To do this, select a targeted source controller. The figure below shows the selection of Intersection#4 (RED circle). After selecting the source controller, select the *Copy Intersection*  icon. A confirming message window will appear to confirm the *Copy* action (BLUE circle). After performing this action, the *Paste Intersection*  icon will appear for use.





Next, select the targeted intersection from the list to *Paste* the data points. Select the *Paste*  icon to place all of the copied data points to the new intersection. The figure below shows the selection of pasting the data points to Intersection#30 from the list. After pasting the data points, *Move*, *Edit*, and *Resize* them to fit in the new intersection.

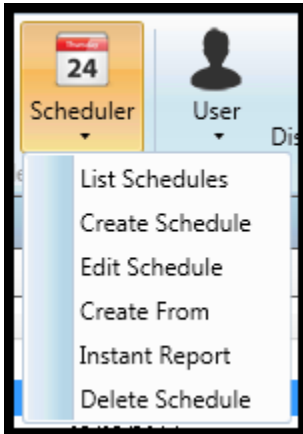


To “Undo” any single previous action in the *Scan Builder*, select the *Undo*  icon. This function will only work for the last action. It does not offer the ability to “Undo” beyond the last action.

Before leaving the *Scan Builder*, select “Apply” to save your work.

After the Scan Builder session is complete, you will need to exit the **ATMS** client and re-launch it for the new GIS layer changes to take effect.

## 6.21 Scheduler



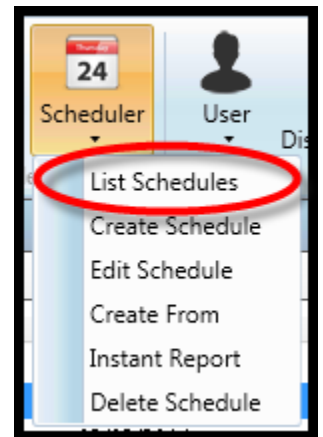
The **ATMS Scheduler** performs pre-programmed, automated tasks such as full controller status, data collection, time synchronization, database verifications, etc. These functions can all be performed manually, but are easily automated to save staff time and have accurate information ready or more easily accessible for the user. This information is stored on the server and can be retrieved at any time.

The *Scheduler* actions also include an *Instant Report* function, which allows a user to immediately generate the desired information without waiting for it to be automatically performed at its scheduled time.

### 6.21.1 List Schedules

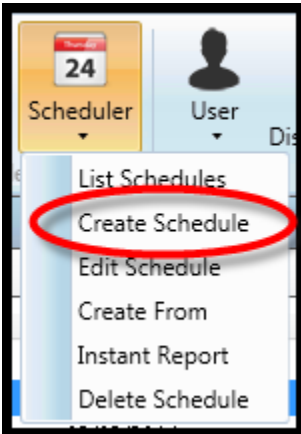
To display the existing *Schedules*, select *Definitions...Scheduler...List Schedules*. **ATMS** will display all of the programmed *Schedules* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.

A *Schedule* can be programmed but not “Active”. This can be seen easily from the list by observing that the “Days” check boxes are checked or not. A *Schedule* is not active if all of the “Days” boxes are unchecked.



Description	Report	By	Selected	Start date	Stop Date	Start Time	Stop Time	Su	Mo	Tu	We	Th	Fri	Sa	Interva	Interval type	Command Line
Bench Controllers DownIO@d dOCK	Download Real-Time	Flex Group	Bench Controllers	04/22/2014	01/01/2050	02:15	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	24	Hour(s)	
Central TR Master 1000	ATMS.now Master	Controller	Central TR Master ID 1000	04/02/2014	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous	
Full Status Bench Controllers	Full Status	Flex Group	Bench Controllers	03/03/2014	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous	

## 6.21.2 Create Schedule



To create a *Schedule* in **ATMS**, navigate to *Definitions...Scheduler...Create Schedule* from the *Navigation Pane*. A new screen will appear in the main window.

First, assign a name for the *Schedule* in the “Description” box. If you are performing multiple similar *Schedules* by *Flex Group*, then consider naming them with slightly different names. An example of this would be “Full Status – Downtown” for the downtown area and “Full Status – Hwy 84” for a different *Flex Group* of controllers. This will help easily differentiate each *Schedule* at a later time.

Second, select the *Scheduler* “Type”. A list and explanation of each “Type” is shown below.

Next, the “By” box will provide the ability to select the Controller, Flex Group, Group or Master for the *Schedule*. Based on the selected “By” value the “Select” box will display the corresponding list of Controllers, Flex Groups, Groups, or Masters.

Select “Start” and “Stop” value for *Time Range* and *Date Range* boxes. These values control the window of time that the *Scheduler* will perform the task.

A screenshot of the 'New Scheduler' dialog box. The 'Schedule Details' section is visible, showing fields for Description, Type, By, Select, Time Range, Date Range, Days, and Interval. The Description field contains 'Upload SH 90 Controllers at 3 AM Sundays'. The Type field is set to 'Upload to Upload'. The By field is set to 'Flex Group'. The Select field is set to 'SH 90'. The Time Range field is set to '03:20' to '23:59'. The Date Range field is set to '5/18/2014' to '1/1/2050'. The Days field has 'Sun' checked. The Interval field is set to 'Monthly'. The dialog box has 'Apply', 'OK', and 'Cancel' buttons at the bottom.

The *Days* box identifies the specific days for the scheduled task to perform, regardless of whether it fits within the Date and Time range selected. Both the *Days* value and the *Start/Stop Time* values work together.

Lastly, select the “Interval” that you want the *Scheduler* to perform the task. Intervals can be:

- Continuous
- Minutes
- Hours
- Monthly

Click “Apply” or “OK” to save.

**NOTE: It is recommended to separate Scout.x controllers from all other versions using Groups to ensure efficient polling for Download Real Time, Full Status, and Smart Uploads.**

**The Scheduler “Interval” will begin at the selected “Start Time” and “Start Date”, as long as it corresponds with a selected day. The Scheduler will perform the same task again after the “Interval” time has expired.**

Listed below is a full list of the available *Scheduler* function types and a brief description/definition:

Scheduler Type	Description
Alarm Polling	Collect Field Alarms from controller(s)
Alpha Status	Collect status from Alpha UPS Supply
Archive <b>ATMS</b>	Remove old SQL table data and send to destination storage server. Executes programming from “Archive Database” screen
<b>ATMS</b> Master	Activate a central master by time-of-day. The subsystem assigned to the master determines the Control Group
Auto Reports	Generate reports from the Report Criteria list of saved report templates.
Backup <b>ATMS</b>	Executes a Full SQL and Controller Database Backup Copy and directs it to a destination server
CRC Database –Permanent	Compare Permanent database using CRC method
CRC Database –Special 1	Compare Special 1 database using CRC method
CRC Database –Special 2	Compare Special 2 database using CRC method
CRC Database –Special 3	Compare Special 3 database using CRC method
CRC Database –Special 4	Compare Special 4 database using CRC method
CRC Database –Special 5	Compare Special 5 database using CRC method
CRC Database –Standard	Compare Standard database using CRC method
Daily Email TSP Report	Email the TSP report daily
Daktronics Full Status	Polls all Alarms, Active Sign Message and Time from the assigned Daktronics CMS signs
Daktronics Send Message	Send message to the assigned Daktronics CMS sign
Detector Events	Collect Detector Failure Information

Scheduler Type	Description
Download No Verify Database –Permanent *SMART	Download Permanent database without verification
Download No Verify Database –Special 1 *SMART	Download Special 1 database without verification
Download No Verify Database –Special 2 *SMART	Download Special 2 database without verification
Download No Verify Database –Special 3 *SMART	Download Special 3 database without verification
Download No Verify Database –Special 4 *SMART	Download Special 4 database without verification
Download No Verify Database –Special 5 *SMART	Download Special 5 database without verification
Download No Verify Database –Standard *SMART	Download Standard database without verification
Download Pattern	Download a Pattern to override TBC operation
Download Real-Time	Download server time to controller(s)
Download Real-Time	Download server time to controller(s) using NTCIP
Download Time Smart Sensor HD	Download the time to a Smart Sensor HD Device
Download Verify Database –Permanent *SMART	Download Permanent database with verification
Download Verify Database –Special 1 *SMART	Download Special 1 database with verification
Download Verify Database –Special 2 *SMART	Download Special 2 database with verification
Download Verify Database –Special 3 *SMART	Download Special 3 database with verification
Download Verify Database –Special 4*SMART	Download Special 4 database with verification
Download Verify Database –Special 5 *SMART	Download Special 5 database with verification
Download Verify Database –Standard *SMART	Download Standard database with verification
Full Status	Collect all Alarms, R/Y/G, Detector Calls, Scan Data, Split History, and all Real-Time information  **Recommended for all <b>ATMS</b> controllers
Full Status GYR only	Collect Limited Full status for Serial Controllers
Full Status Scanner	Collect Full Status for systems using the ATMS scanner service. Scanner service is optionally used for larger systems communications
Geofence AVL Input	Used with Rail Adaptive Module to track trains in the system
GPS Time	Update the server clock from a local GPS antenna
GRIDSMART System Status	Update system data for GRIDSMART camera devices
IP Temp Check	Polls all Cubic   Trafficware IP-based Temperature Sensors for current temperature
Local Event	Collection Local Events from controller(s)

Scheduler Type	Description
Local Vol./Occ	Collects volume and occupancy data from controller(s) **Required for Congestion Level GIS layer
Master 48 Vol./Occ.	Collects volume and occupancy from master(s)
Master Event	Collection Master Events from controller(s)
Real-Time Compare	Set Up a time compare between the server time and the controller time.
Replicate <b>ATMS</b>	Executes an SQL table export from selected files to a destination server
SDLC MMU Fault	Gather MMU Fault report via the SDLC
SDLC MMU Program	Gather MMU Program report via the SDLC
SDLC MMU Trace	Gather MMU Trace report via the SDLC
Set Opticom Time	Download Time-Sync to Opticom Discriminator Card(s)
Smart Sensor 105	Collects volume, occupancy and speed data from Wavetronix Smart Sensor 105 units
Smart Sensor HD	Collects volume, occupancy and speed data from Wavetronix Smart Sensor HD units
SNMP UPS Device Status	Gather status from UPS devices using SNMP communications
Speed Traps	Collects speed information from detectors
Split History	Gathers split information from the assigned controller(s) **Already integrated with Full Status
Sync Controller Time to Server	Synchronizes ATMS server time from a specific controller.
Upload Purdue Logs	For V76 controllers that have High Resolution Data Logging as defined by Purdue University, gather the data on a scheduled basis.
Upload Drops	Upload Drop information from intersection controller
Upload Purdue Logs	Upload Controller High resolution data logs via an FTP connection and place them in the SQL database

Scheduler Type	Description
Upload to Permanent *SMART	Uploads data to Permanent file
Upload to Special 1 *SMART	Uploads data to Special 1 file
Upload to Special 2 *SMART	Uploads data to Special 2 file
Upload to Special 3 *SMART	Uploads data to Special 3 file
Upload to Special 4 *SMART	Uploads data to Special 4 file
Upload to Special 5 *SMART	Uploads data to Special 5 file
Upload to Standard *SMART	Uploads data to Standard file
Upload to .Std and .Prm *SMART	Uploads data to Standard and Permanent files
Upload to Upload *SMART	Uploads data to Upload file
USNO Time – Dial-Up	Collects time for US National Observatory via Dial-Up
USNO Time – Internet	Collects time for US National Observatory via Internet
Verify Database –Permanent	Upload and Compare to Permanent database (In Reports)
Verify Database –Special 1	Upload and Compare to Special 1 database (In Reports)
Verify Database –Special 2	Upload and Compare to Special 2 database (In Report)
Verify Database –Special 3	Upload and Compare to Special 3 database (In Report)
Verify Database –Special 4	Upload and Compare to Special 4 database (In Report)
Verify Database -Special 5	Upload and Compare to Special 5 database (In Reports)
Verify Database –Standard	Upload and Compare to Standard database (In Report)
Volume Occupancy FTP Service	Collect Volume & Occupancy via FTP Service

**\*SMART : The SMART schedule version is required for intersections using Scout.x controller types**

## Examples of Scout Schedules

### Scout Smart Upload to Upload

Setup Preview Print Export																
Description	Report	By	Selected	Start Date	Stop Date	Start Time	Stop Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Interval	Interval Type
Upload to Upload V85	SMART: Upload to Upload	Group	V85	04/27/2023	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	24	Hour(s)
Uploads	Upload to Upload	Flex Group	VC Contro	09/19/2022	01/01/2050	02:00	02:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	01	Monthly
Download Real-Time	Download Real-Time	Group	All	08/29/2022	01/01/2050	03:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	06	Hour(s)
Download Real-Time V85	Download Real-Time	Group	V85	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12	Hour(s)
Full Status	Full Status	Group	All	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous
Full Status V85	Full Status	Group	V85	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous

### Scout Download Real-Time

Setup Preview Print Export																
Description	Report	By	Selected	Start Date	Stop Date	Start Time	Stop Time	Sun	Mon	Tu	Wed	Thu	Fri	Sat	Interval	Interval Type
Upload to Upload V85	SMART: Upload to Upload	Group	V85	04/27/2023	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	24	Hour(s)
Uploads	Upload to Upload	Group	All	09/19/2022	01/01/2050	02:00	02:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	24	Hour(s)
Download Real-Time	Download Real-Time	Group	All	08/29/2022	01/01/2050	03:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	06	Hour(s)
Download Real-Time V85	Download Real-Time	Group	V85	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12	Hour(s)
Full Status	Full Status	Group	All	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous
Full Status V85	Full Status	Group	V85	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous

### Scout Full Status V85

Setup Preview Print Export																
Description	Report	By	Selected	Start Date	Stop Date	Start Time	Stop Time	Sun	Mon	Tu	Wed	Thu	Fri	Sat	Interval	Interval Type
Upload to Upload V85	SMART: Upload to Upload	Group	V85	04/27/2023	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	24	Hour(s)
Uploads	Upload to Upload	Group	All	09/19/2022	01/01/2050	02:00	02:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	24	Hour(s)
Download Real-Time	Download Real-Time	Group	All	08/29/2022	01/01/2050	03:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	06	Hour(s)
Download Real-Time V85	Download Real-Time	Group	V85	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12	Hour(s)
Full Status	Full Status	Group	All	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous
Full Status V85	Full Status	Group	V85	08/29/2022	01/01/2050	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	Continuous

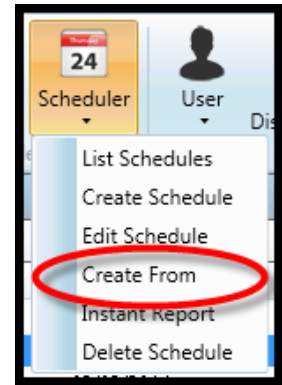


### 6.21.3 Create From Schedule

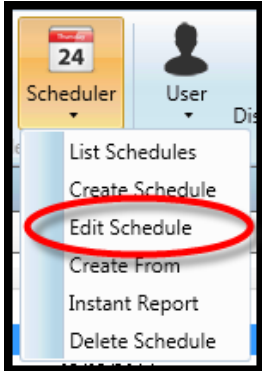
The *Create From* option allows the user to set up *Schedules* that are identical or similar to others without having to create them from scratch.

To *Create a Schedule* “From” another, navigate to *List Schedules*, highlight the schedule you wish to use as a template. Next, navigate to *Create From*. A new window will appear in the *Overview* pane. All of the parameters from the original *Schedule* will appear. Assign your new data parameter to the appropriate box.

Click “Apply” or “OK” to save.



### 6.21.4 Edit Schedule

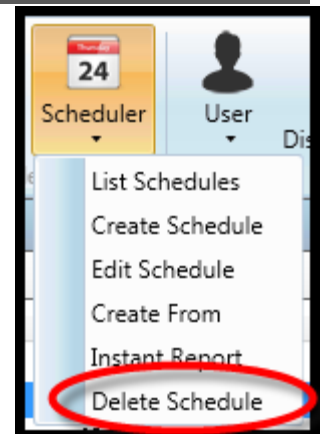
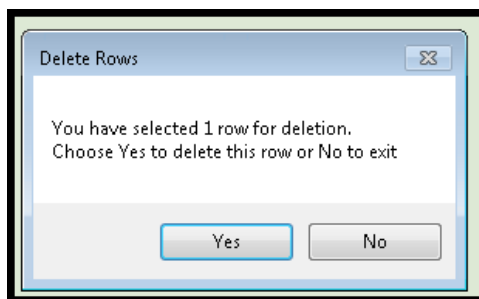


To edit the defined *Schedules*, navigate to *Definitions...Schedules...List Schedules* from the *Actions* Pane. **ATMS** will display the existing *Schedules* in the system. Select the desired *Schedule* from the list. The option to *Edit Schedule* becomes available as shown in the figure below. Highlight the desired *Schedule*, then select *Edit Schedule*. The same window as the *Create Schedule* window will appear for editing the parameters.

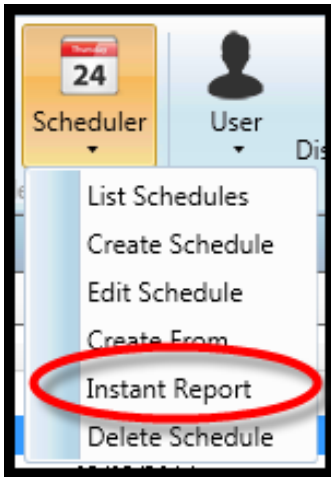
Make your changes and click “Apply” or “OK” to save.

### 6.21.5 Delete Schedule

To delete a *Message*, navigate to *Definitions...Message...List Messages* from the *Actions* Pane. **ATMS** will display the existing *Messages*. Select the desired *Message* from the list, the option to *Delete Message* becomes available as shown in the figure below. Highlight the target *Message* and select *Delete Message*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.21.6 Instant Report



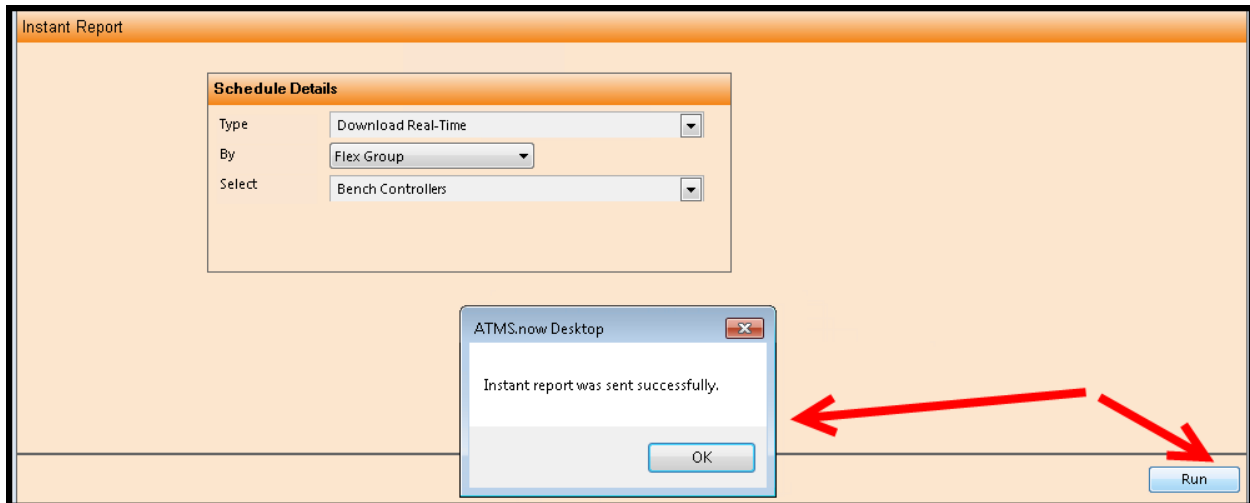
*Instant Reports* enables the user to immediately gather data from the field or perform a system task instead of waiting for a programmed time. This data can then be queried from the **ATMS** database as a Report.

To perform an *Instant Report*, navigate to *Definitions...Scheduler...Instant Reports* from the *Navigation* Pane. A new window will appear for *Instant Reports* in the *Overview* pane.

Select the *Instant Report* “Type”. A list and explanation of each “Type” is the same as the *Scheduler* “Types” as described in Section 5.15.2.

Next, the “By” box will provide the ability to select the Controller, Flex Group, Group or Master for the *Schedule*. Based on the selected “By” value the “Select” box will display the corresponding list of Controllers, Flex Groups, Groups, or Masters. Select the targeted controller(s).

Select the “Run” button, a pop-up will appear as shown in the above screen. The request is forwarded from the Client to the Administrator and Comm Server for processing.



## 6.21.7 Custom Criteria for Auto and Instant Reports

The ability to generate custom criteria for scheduled or instant Auto Reports has been added in ATMS 2.14. This allows the user to generate a custom report based on the agency's report criteria as shown below. Simply select the schedule Type as Auto Reports and the custom criteria box will be displayed.

The screenshot displays the 'New Scheduler' interface. It is divided into two main sections: 'Schedule Details' and 'Custom Auto Report Criteria'. The 'Custom Auto Report Criteria' section is highlighted with a red oval.

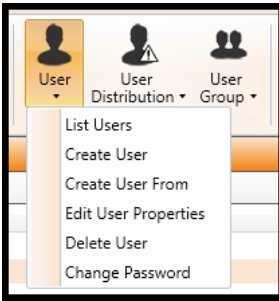
**Schedule Details**

- Description: Daily E-mailed Field ALARMS
- Type: Auto Reports
- By: Field Alarms
- Select: Daily Field alarms
- Time Range: Start (00:00) to Stop (23:59)
- Date Range: 2/ 1/2023 to 1/ 1/2050
- Days:  Select All,  Sun,  Mon,  Tue,  Wed,  Thu,  Fri,  Sat
- Interval: 01 Minutes(s)

**Custom Auto Report Criteria**

- Previous Days: 01
- Current Day:
- Begin Time: 00:00:00
- End Time: 23:59:59
- TimeSpanType: Continuous
- Set as Default

## 6.22 Users

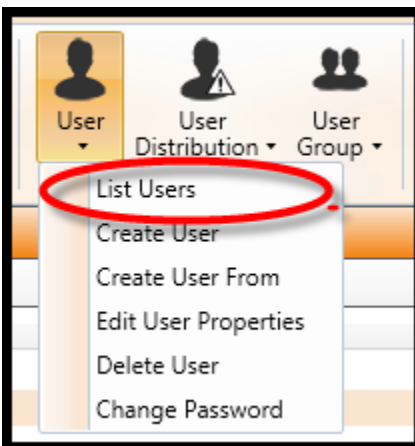


The *Users* section allows the System Administrator to define and edit user privileges and control to **ATMS** system devices, databases, information and other security functions. Any **ATMS** function can be enabled or disabled on a function-by-function basis for each user.

**Note: Beginning with ATMS 2.8, both usernames and passwords allow the user to utilize special characters. When creating new users and /or passwords the user has to satisfy certain criteria: they have to be between 8-15 characters long, have at least one capital letter, at least one number and at least one special character.**

It is recommended that only a System Administrator has the level of access to Create, Edit or Delete **ATMS** users.

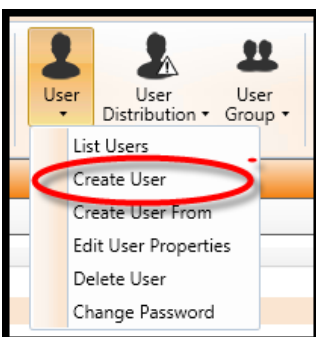
### 6.22.1 List Users



To display the existing *Users*, select *Definitions...User...List Users*. **ATMS** will display all of the programmed *Users* in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.

ID	Username	E-Mail Address	E-Mail Address 2	E-Mail Address 3	Phone
1	Amrish				
2	devel				
990	Atraffictch	atraffictch@city.usanet			518-220-2040
999	naztec				2812407233
9001	Administrator				
9002	Timing Engineer				
9003	TMC Operator				

### 6.22.2 Create User



To create a *User* in **ATMS**, navigate to *Definitions...User...Create User* from the *Navigation Pane*. A new screen will appear in the main *Overview* pane. The setup screen will appear with three tabs at the top, *User Details*, *Permissions* and *Preferences*, and *Jurisdiction Membership*. Each of these tabs will require entries for proper user setup.

## User Details

First, assign a user ID # for the *User* in the “ID” box. You can manually set the ID# or select the “Auto ID” button to allow **ATMS** to assign the next available number to the *User*.

Next, assign the “User Name” and “Password”. The initial entry of the Password will require a confirming entry to ensure accuracy. The User Name is case sensitive and will need to be typed identically during log in.

The ID#, User Name, and Password are mandatory entries. **ATMS** monitors user activity by ID and User Name

The Phone and E-Mail Address boxes are optional entries, however, **ATMS ONLY** uses the first E-Mail Address for *Incident Notification* when it is set for “E-Mail Notification”.

The “Controller User for Dial-Up Only” entries are not mandatory and should only be filled in when using Dial-Up to controllers in **ATMS**.

If the agency utilizes domain authentication, simply select the Domain User box. This will allow users to log into the clients without a password because they are logged into the agency domain. The Domain user option is specific to agencies that desire an additional layer of protection for access to the ATMS. Beside the correct user name and the valid Password, the user will need to log in from an agency specific log-in account prior to accessing ATMS.

Click “Apply” to save and move to the next tab.

The screenshot shows a software window titled "User: twTester" with three tabs: "User Details", "Permissions and Preferences", and "Jurisdiction Membership". The "User Details" tab is selected and circled in red. The form contains the following fields:

- ID: 1
- Domain User:
- Username: twTester
- Password:  (masked with asterisks)
- Change Password:
- Confirm:
- Phone:
- E-Mail Address:
- E-Mail Address 2:
- E-Mail Address 3:
- User Group:
- Controller User for DialUp Only:
- Number: 0
- Code: \*

Buttons at the bottom right: Apply, OK, Cancel.

## Permissions and Preferences

Upon creating a new user, all of the “Permissions and Preferences” will be turned off, which is the “No” value. The System Administrator can enable each value on a function-by-function basis by placing the mouse over the “No” and double-clicking. The value will toggle to a “Yes” which enables that function for that *User*.

When Cubic | Trafficware performs a software update to the system that includes new features, they will automatically be turned “Off” for system protection. The System Administrator will need to evaluate each new *Permission and Preference* setting for each user for the proper system use.

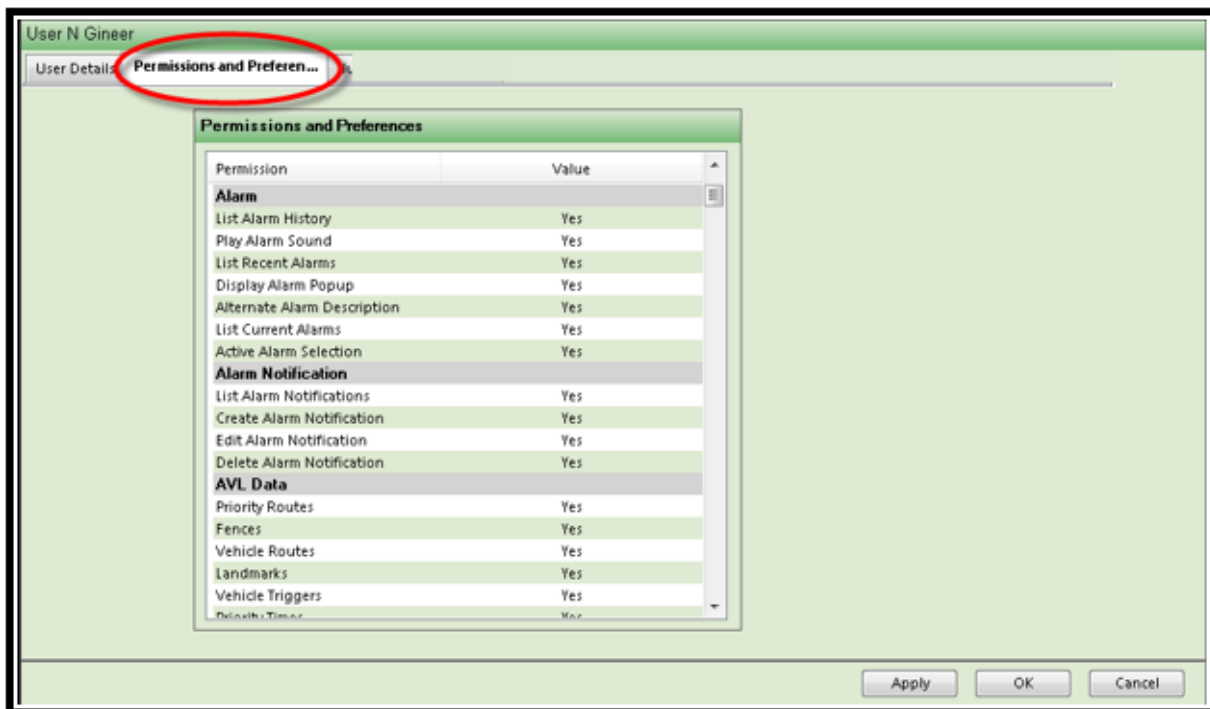
In cases where you wish to turn all of the values “On” or “Off”, double-click the “Select All” at the top of the list. This will toggle all of the values to “No” or “Yes”. If a function is enabled for a *User*, the text for the function will appear in their respective *Navigator*, *Action*, and *Selected Details* panes. If it is disabled, the text for the function will not appear at all.

It is recommended that only the System Administrator (s) have *Edit User Properties* enabled to prevent other users from changing their own system access and control.

The Permissions and Preferences parameters that are related to the AVL Module need to be set as a “No” value. These parameters are AVL Data, Geo Fence, Landmarks, AVL Module, Segment Editor-Routes, Vehicles, and Vehicle Triggers.

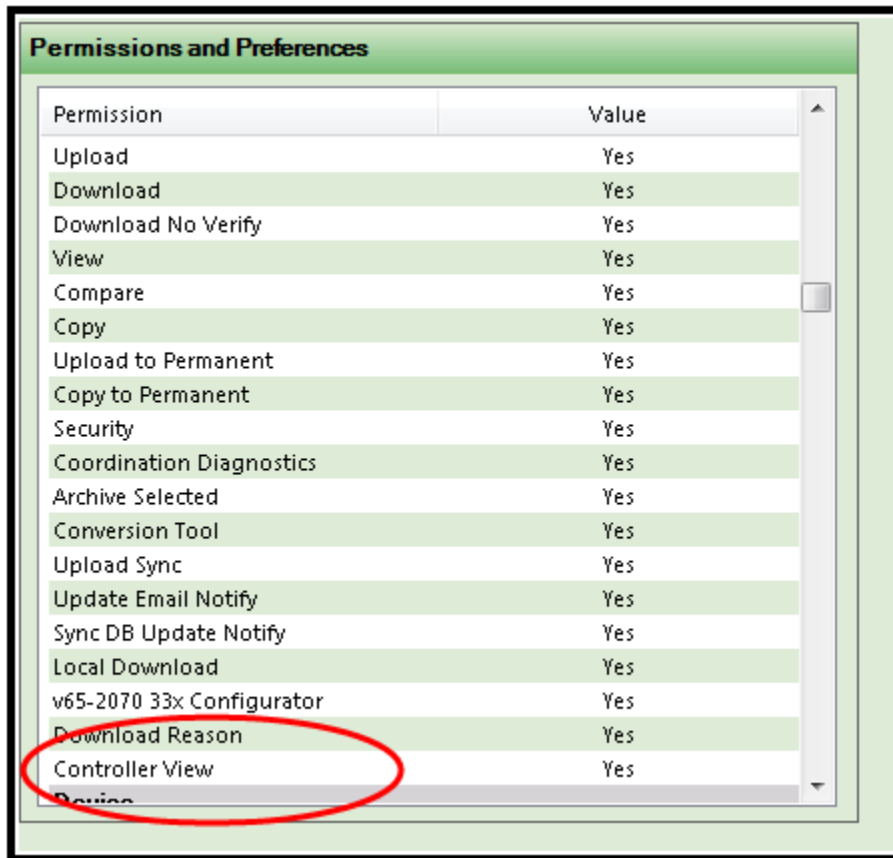
Select “Apply” to save and move to the next tab.

When the new user privileges are saved, **ATMS** will immediately implement the new settings, enabling or disabling each function.



As Cubic | Trafficware applies periodic updates to your **ATMS** system, the new features will all be turned off. This is done to protect the level of control and access until the System Administrator can decide which users have the new privileges. After a new software update is applied to the server, it is recommended that the System Administrator review each user’s access privileges.

In ATMS 2.7 a new user property was added under Database permissions called Controller View. This is specifically for 2070 V76 controllers as well as for Scout.x controller types. By setting this property to “Yes”, the Phase times and options screens are ordered as per the controller screens for ease of user entry. By setting this to “No” the user can move columns on the edit screen and they will persistently remain in place.



Permission	Value
Upload	Yes
Download	Yes
Download No Verify	Yes
View	Yes
Compare	Yes
Copy	Yes
Upload to Permanent	Yes
Copy to Permanent	Yes
Security	Yes
Coordination Diagnostics	Yes
Archive Selected	Yes
Conversion Tool	Yes
Upload Sync	Yes
Update Email Notify	Yes
Sync DB Update Notify	Yes
Local Download	Yes
v65-2070 33x Configurator	Yes
Download Reason	Yes
Controller View	Yes
Device	

## Jurisdiction Membership

Each *User* must belong to a *Jurisdiction* to have access to Controllers. The initial installation will default to a *Jurisdiction* named “All”.

It is recommended to create new *Jurisdictions* that properly reflect your agency and surrounding agencies and their users. Creating or Editing *Jurisdictions* is performed in the *Definitions...Jurisdictions* section as described in Section 5.11.

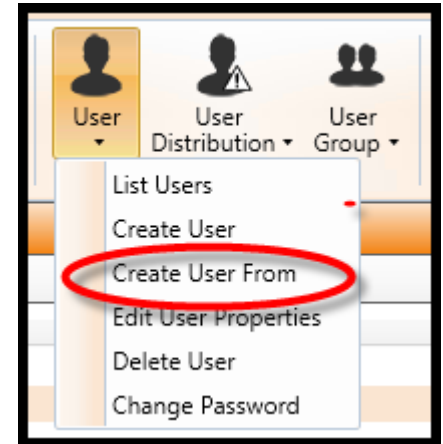
**Note: Jurisdiction Membership is set via User Groups as described later in this chapter.**

### 6.22.3 Create User From

This feature allows the System Administrator to create a *User* from another that has already been defined in the system. Using the “Create From” utility will copy all of the base user’s settings from each of the three *User Definition* tabs, except for the user-specific field of ID#, User Name, and Password. This is especially useful when there are groups of users that have similar or identical control privileges, and can prove to be a valuable time saver in the *User* setup process.

To use the *Create From* function, navigate to *Definitions...Users...List Users*. The list of programmed users will appear in the main window. Highlight the *User* that is most similar to the new user that you wish to create. When a *User* is highlighted, the option to *Create From* will appear. A new *Create User* window will appear, but the settings for *Permissions and Preferences* and *Jurisdiction Membership* will be already copied to the setup.

Assign a unique User ID#, User Name, and Password for the new *User*.

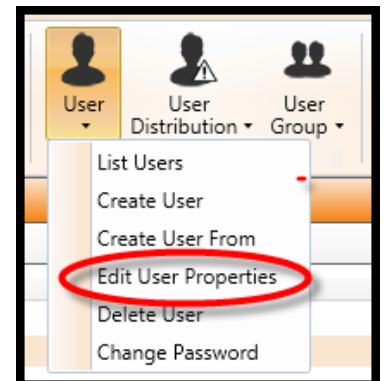


### 6.22.4 Edit User Properties

To edit the defined *Users*, navigate to *Definitions...Users...List Users* from the *Actions* Pane. **ATMS** will display the existing *Users* in the system. Select the desired *User* from the list, the option to *Edit User* becomes available as shown in the figure below. The same window as the *Create User* will appear for editing the parameters, including all three tabs: 1) *User Details*, 2) *Permissions and Preferences*, and 3) *Jurisdiction Membership*.

Enter your changes to each of the tabbed sections.

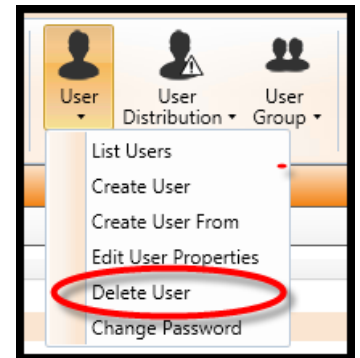
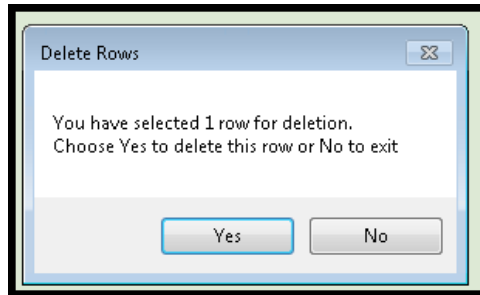
Click “Apply” or “OK” to save.





## 6.22.5 Delete User

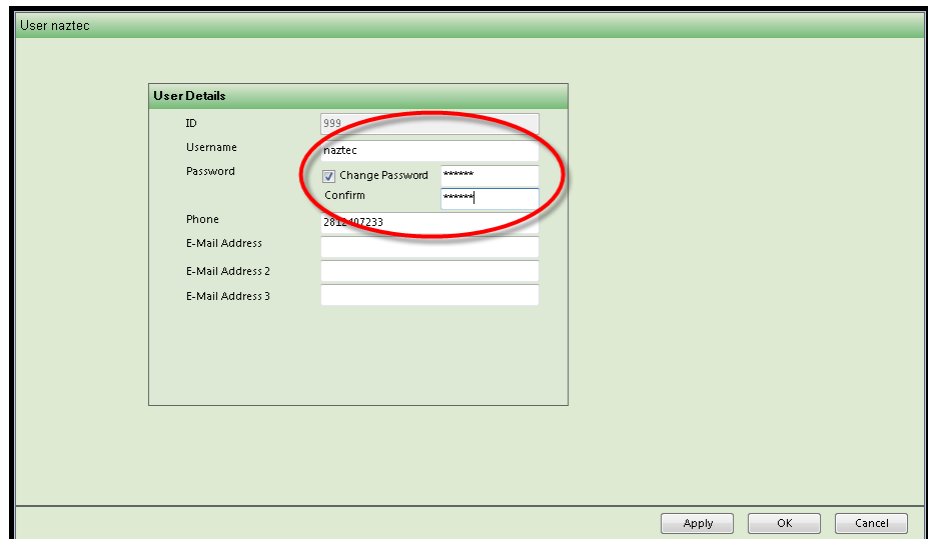
To delete a *User*, navigate to *Definitions...User...List Users* from the *Actions* Pane. **ATMS** will display the existing *Users*. Select the desired *User* from the list, the option to *Delete User* becomes available as shown in the figure below. Select *Delete User*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



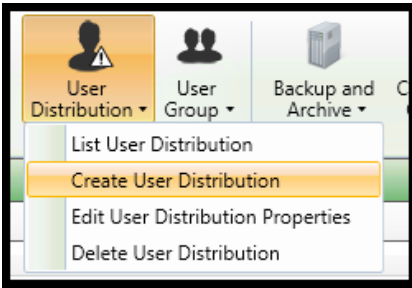
## 6.22.6 Change Password



If permission is given, a user can change their password using this command. If the user has permission to change their password the screen below will come up. Check the box next to Change Password and then change your password. You must re-enter the new password in the Confirm field and then apply the changes. Please note that the new password will take affect after restarting the client.

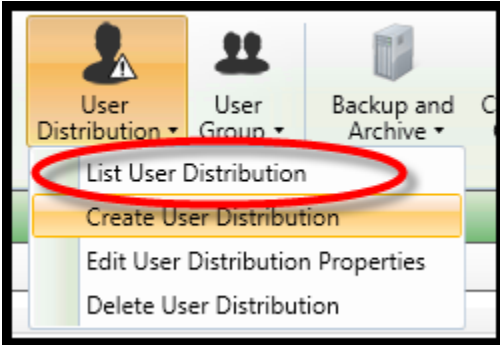


## 6.23 User Distribution



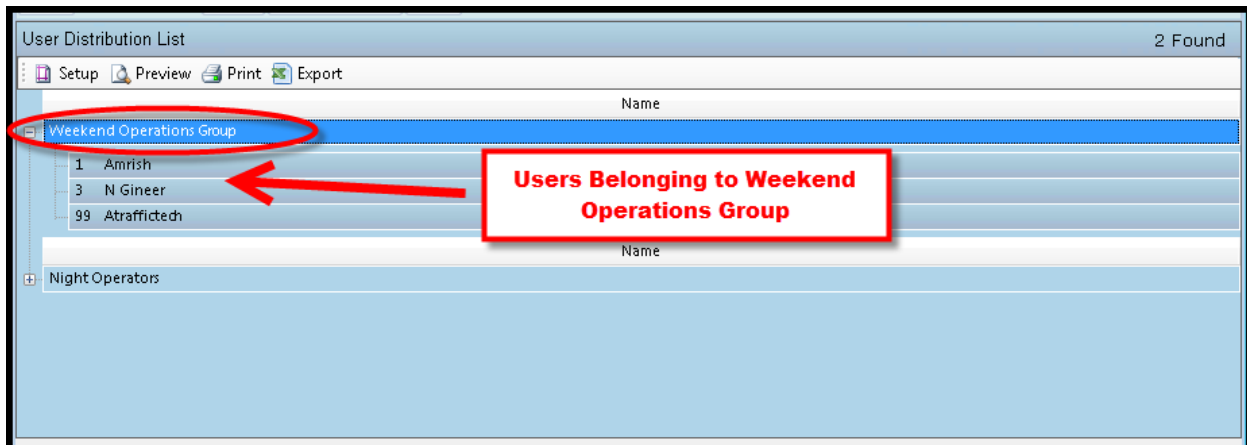
The *User Distribution* list is used to create flexible groups of users for notification of *Incident Triggers*. Any combination of *Users* can be assigned to a *User Distribution* list for use. A system *User* can be a member of multiple *User Distribution* lists.

### 6.23.1 List User Distributions



To display the existing *User Distribution* lists, navigate to *Definitions...User Distribution...List User Distributions*. **ATMS** will display the programmed *User Distribution* list in the main window. When one of these is selected from the list, the options to *Edit* or *Delete* will become available for selection.

You can select the “+” symbol or “double-click” the *User Distribution* name to expand the list. The *Users* displayed below the *User Distribution* name are the currently assigned users. To collapse the list, select “-“ or “double-click” the *User Distribution* name.

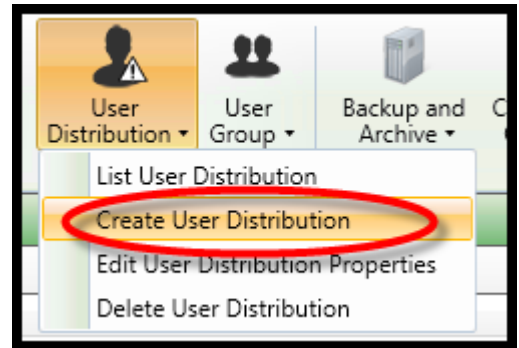


## 6.23.2 Create User Distributions

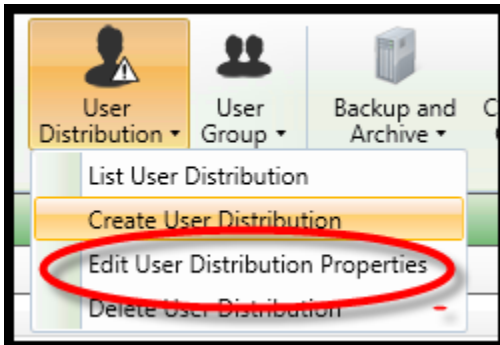
To create a *User Distribution* list in **ATMS**, navigate to *Definitions...User Distribution...Create User Distribution* from the *Navigation Pane*. A new screen will appear in the main *Overview* pane. A setup screen will open a box to name the *User Distribution* list.

Enter the *Name*, select *Apply* or *OK* to save.

To assign the desired system users to the *User Distribution* list, next go to *Edit User Distribution Properties*.



## 6.23.3 Edit User Distribution Properties



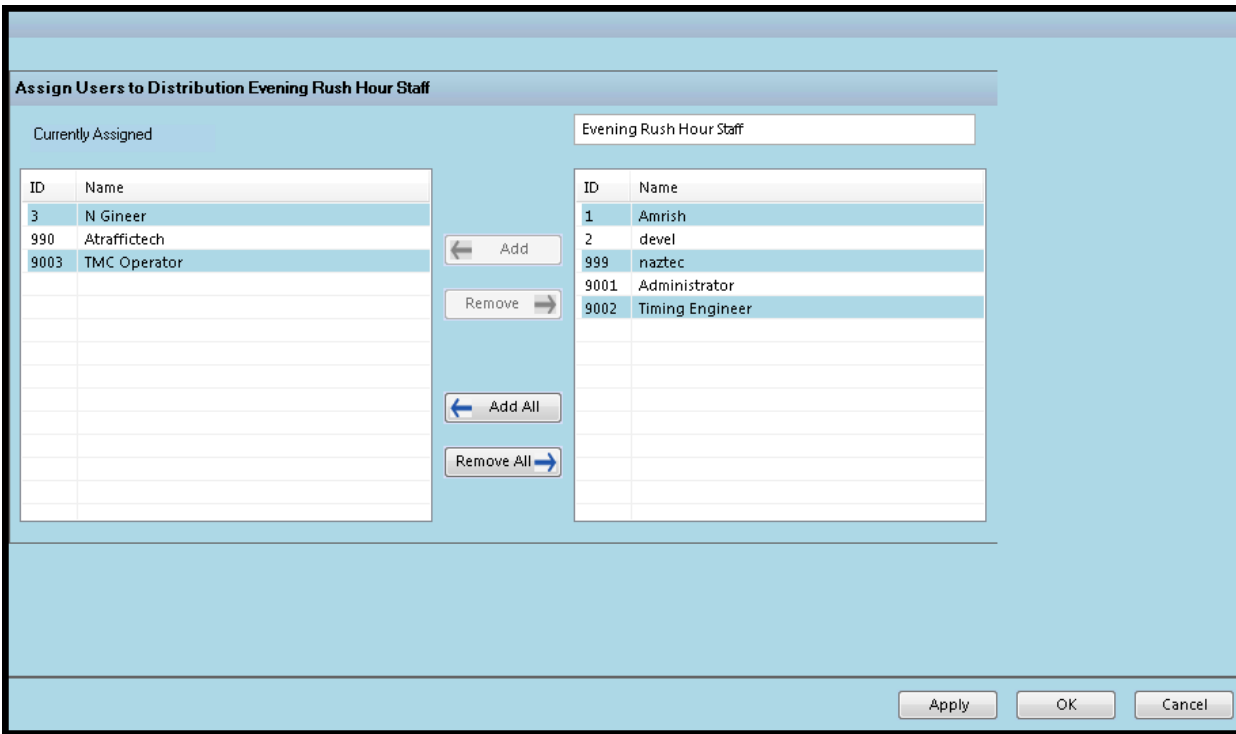
The *Edit User Distribution Properties* function is needed to assign *Users* to a *User Distribution* list. To edit a defined *User Distribution* list, navigate to *Definitions...User Distribution...List User Distributions* from the *Actions Pane*. **ATMS** will display the existing *User Distribution* list in the system. Select the desired *User Distribution* group from the list, the options to *Edit* and *Delete* become available as shown in the figure below.

A new window will appear to select specific users from the list on the right, and assign them to the *User Distribution* section on the left. For the selection of multiple users at one time, use standard windows tools by holding the “Shift” key as you scroll down the list of users or by holding the “Ctrl” key and selecting your users via left clicking your mouse.

Select the “Add” button to move the selected users to the newly-created *User Distribution* group, or “Add All” to place the entire user list into the *User Distribution* group.

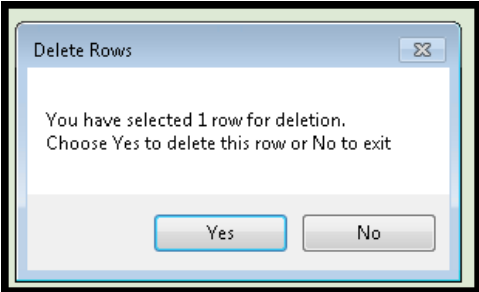
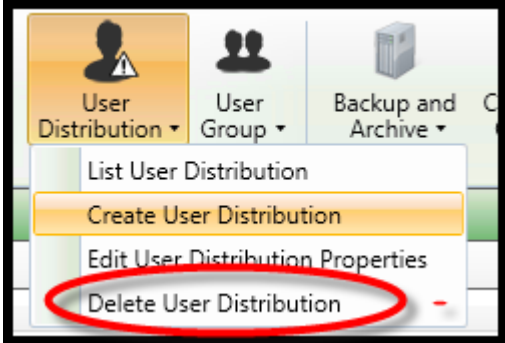
To remove users from the assigned list, highlight the user(s) on the *User Distribution* list on the left. Select the “Remove” button. Selecting “Remove All” will remove the entire user list from the *User Distribution* group.

Click “Apply” or “OK” to save.

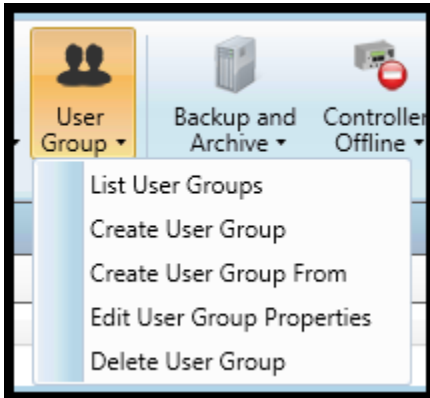


### 6.23.4 Delete User Distribution

To delete a *User Distribution*, navigate to *Definitions...User Distribution...List User Distributions* from the *Actions* Pane. **ATMS** will display the existing *User Distribution* lists. Select the desired *User Distribution* from the list, the option to *Delete User Distribution* becomes available as shown in the figure below. Select *Delete User*. A “pop-up” will appear to allow the user to confirm the *Delete* function.



## 6.24 User Groups

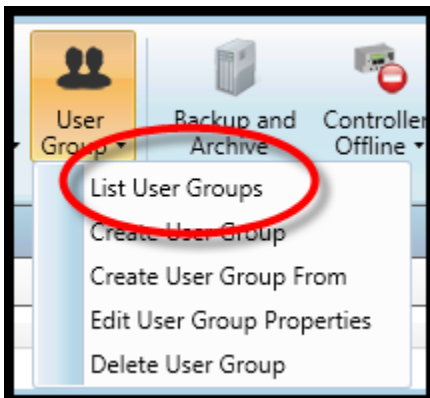


**ATMS** provides the ability to create *User Groups* to control *User Permissions and Preferences* for more than one user with a single setting, and can be a significant time-saver for large agencies. When changes are made to a *User Group* permission value, the change will apply to all of the users subscribed to that *User Group* instead of having to make the same change for each user individually. When a *User* is assigned to a *User Group*, the selected *Permissions and Preferences* values for that *User Group* will over-ride the individual settings for that specific user.

Therefore, *User Groups* should only be used when it is desired to have certain departments or employee types classified with identical access and control privileges. By default, *Users* are not assigned to a *User Group*. *User Groups* need to be created and have *Users* specifically assigned to them.

Due to the access control of User Groups, it is recommended that only **ATMS** system Administrator(s) have access to this section.

### 6.24.1 List User Groups

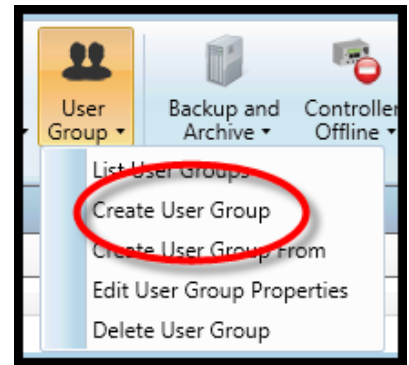


To display the existing *User Groups*, select *Definitions...User Groups...List User Groups*. **ATMS** will display all of the programmed *User Groups* in the main window. When one of these is selected from the list, the options to *Create From*, *Edit* or *Delete* will become available for selection.

A screenshot of the 'User Group List View' window in ATMS. The window title is 'User Group List View' and it shows '3 Found'. The window contains a table with columns 'ID' and 'Username'. The table has three rows: ID 4 with 'Signal Techs', ID 5 with 'Main Office Engineer', and ID 6 with 'District 7 Techs'. The row for ID 6 is highlighted in blue. The window also has buttons for 'Setup', 'Preview', 'Print', and 'Export'.

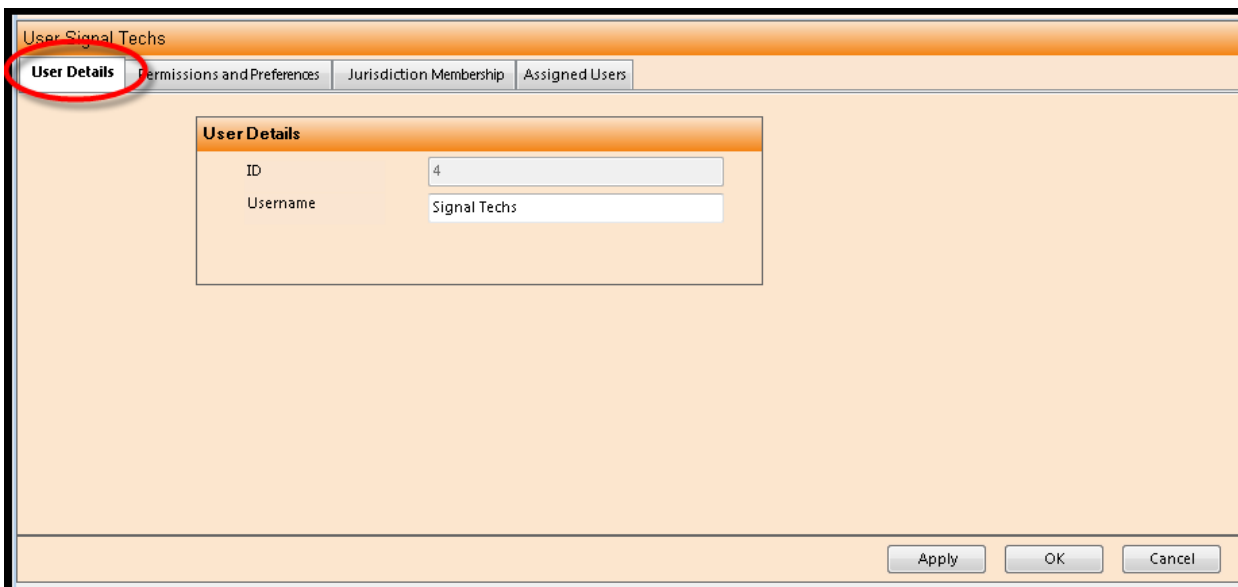
## 6.24.2 Create User Groups

To create a *User Group* in **ATMS**, navigate to *Definitions...User Group...Create User Group* from the *Navigation Pane*. A new screen will appear in the main window. The setup screen will appear with four tabs at the top, *User Details*, *Permissions and Preferences*, *Jurisdiction Membership* and *Assigned Users*.



### User Details

First select the *User Detail* tab and assign a *User Group* number and name in the *ID* and *Username* boxes. Click “Apply” or “OK” to save. The *Auto ID* button will assign the lowest number available starting with “1”.

A screenshot of the ATMS 'User Details' tab. The window title is 'User: Signal Techs'. The 'User Details' tab is selected and circled in red. The 'ID' field contains the number '4' and the 'Username' field contains 'Signal Techs'. At the bottom right, there are 'Apply', 'OK', and 'Cancel' buttons.

## Permissions and Preferences

The *Permissions and Preferences* tab will display the same control options as the same screen as *User* definitions. Upon creating a new *User Group*, all of the *Permissions and Preferences* will be turned off, which is the “No” value. The System Administrator can enable each value on a function-by-function basis by placing the mouse over the “No” and double-clicking. The value will toggle to a “Yes” which enables that function for that *User*.

When the factory performs a software update to the system that includes new features, they will automatically be turned “Off” for system protection. The System Administrator will need to evaluate each new *Permission and Preference* setting for each user for the proper system use.

Permissions and Preferences

Permission	Value
Clear Selection	
	Yes
<b>Adaptive</b>	
List Adaptive	Yes
<b>Alarm</b>	
List Alarm History	Yes
Play Alarm Sound	No
List Recent Alarms	Yes
Display Alarm Popup	No
Alternate Alarm Description	Yes
List Current Alarms	Yes
Active Alarm Selection	Yes
<b>Alarm Notification</b>	
List Alarm Notifications	Yes
Create Alarm Notification	No
Edit Alarm Notification	No
Delete Alarm Notification	No
<b>Analytics</b>	

Jurisdiction for Controller List View

Disable non-jurisdiction controllers

Hide non-jurisdiction controllers

If a function is enabled for a *User Group*, the text for the function will appear in their respective *Navigator*, *Action*, and *Selected Details* panes for each *User* that is subscribed to that group. If it is disabled, the text for the function will not appear at all.

## Jurisdiction Membership and Display

Each *User Group* must have the corresponding *Jurisdictions* assigned to it to have access to the Controllers within the Jurisdiction. Creating or Editing *Jurisdictions* is performed in the *Definitions...Jurisdictions* section as described in Section 5.11.

To display, hide and/or disable non-jurisdiction controllers on the list view screen use the radio button on the bottom of the User Group Permissions and Preferences screen.

The screenshot shows the 'Edit User Group : NJDOT GROUP' interface. The 'Permissions and Preferences' section is expanded, displaying a table of permissions and their values. Below the table, the 'Jurisdiction for Controller List View' section contains two radio buttons. The first radio button, 'Disable non-jurisdiction controllers', is selected and highlighted with a red arrow. The second radio button, 'Hide non-jurisdiction controllers', is unselected.

Permission	Value
Clear Selection	
	Yes
<b>Adaptive</b>	
List Adaptive	Yes
<b>Alarm</b>	
List Alarm History	Yes
Play Alarm Sound	No
List Recent Alarms	Yes
Display Alarm Popup	No
Alternate Alarm Description	Yes
List Current Alarms	Yes
Active Alarm Selection	Yes
<b>Alarm Notification</b>	
List Alarm Notifications	Yes
Create Alarm Notification	No
Edit Alarm Notification	No
Delete Alarm Notification	No
<b>Analytics</b>	

Jurisdiction for Controller List View

Disable non-jurisdiction controllers

Hide non-jurisdiction controllers



## Assign Users

Each *User Group* provides access control to the *Assigned Users* within the group. If a *User* is assigned to a *User Group*, the *User Group* settings will override the specific individual settings.

The list of *Users* not belonging to the *User Group* will appear on the box to the right. To add a *User(s)* to the *User Group*, highlight the targeted *User(s)*, then select the “Add” button, or “Add All” to place the entire list of *Users* into the *User Group*. When a *User* has been added to a group it will move to the box on the left titled “Currently Assigned”.

The list of *Users* belonging to the *User Group* will appear on the box to the left. To remove a *User(s)* from the group, highlight the targeted *User(s)*, then select the “Remove” button. Selecting “Remove All” will remove all of the *Users* from the *User Group*.

Click “Apply” or “OK” to save.

User Details | Permissions and Preferences | **Assigned Users**

**User Assignment**

Currently Assigned

ID	Name
9002	Timing Engineer
9003	TMC Operator

← Add

Remove →

← Add All

Remove All →

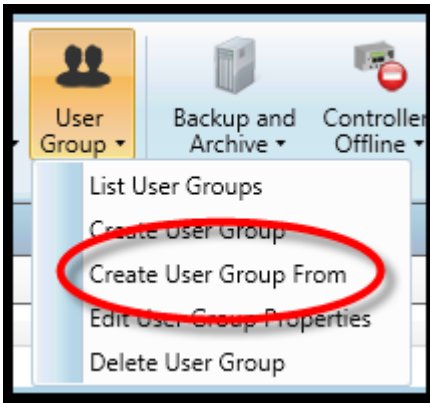
ID	Name
1	tuser
3	TEST USER
4	test
999	naztec
9001	Administrator

Jurisdiction for Controller List View

Disable non-jurisdiction controllers

Hide non-jurisdiction controllers

### 6.24.3 Create User Group From



This feature allows the System Administrator to create a *User Group* from another that has already been defined in the system. Using the “Create From” utility will copy all of the base user’s settings from each of the *User Group* definition tabs, except for the user-specific field of ID# and Group Name. This is especially useful when there are groups of users that have similar or identical control privileges, and can prove to be a valuable time saver in the *User Group* setup process.

To use the *Create From* function, navigate to *Definitions...User Group...List User Groups*. The list of programmed user groups will appear in the main window. Highlight the *User Group* that is most similar to the new user that you wish to create. When a *User Group* is highlighted, the option to *Create*

*From* will appear. A new *Create User* window will appear in the *Overview* pane, but the settings for *Permissions and Preferences*, *Jurisdiction Membership*, and *Assigned Users* will be already copied to the setup.

Assign a unique User ID#, Group Name for the new *User Group*.

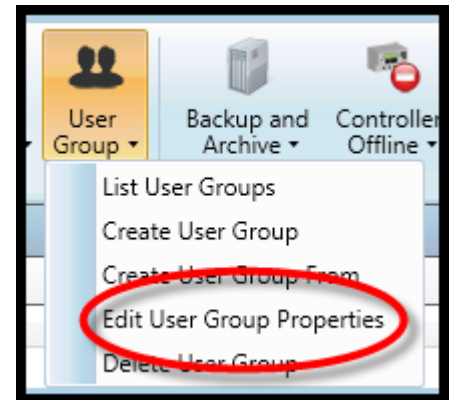
Click “Apply” or “OK” to save.

### 6.24.4 Edit User Group Properties

To edit the defined *User Groups*, navigate to *Definitions...User Groups...List User Groups* from the *Actions* Pane. **ATMS** will display the existing *User Groups* in the system. Select the desired *User Group* from the list. The option to *Edit User Group* becomes available as shown in the figure below. The same window as the *Create User Group* will appear for editing the parameters, including all four tabs: 1) *User Details*, 2) *Permissions and Preferences*, 3) *Jurisdiction Membership*, and 4) *Assigned Users*.

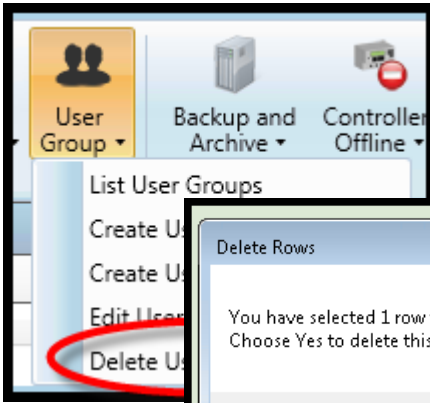
Enter your changes to each of the tabbed sections as needed. The changes to the *User Group* will affect all of the *Users* assigned to the group.

Click “Apply” or “OK” to save.



When the factory applies periodic updates to your **ATMS** system, all new features will be turned off in the User and User Group definitions. This is done to protect the level of control and access until the System Administrator can decide which users have the new privileges. A System Administrator can turn-on new features for all subscribed users through setting them one time within the User Groups.

## 6.24.5 Delete User Group

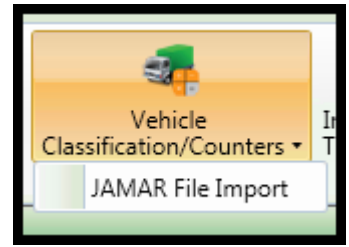


To delete a *User Group*, navigate to *Definitions...User Group...List User Group* from the *Actions* Pane. **ATMS** will display the existing *User Groups*. Select the desired *User Group* from the list, the option to *Delete User Group* becomes available as shown in the figure below. Select *Delete User Group*. A “pop-up” will appear to allow the user to confirm the *Delete* function.

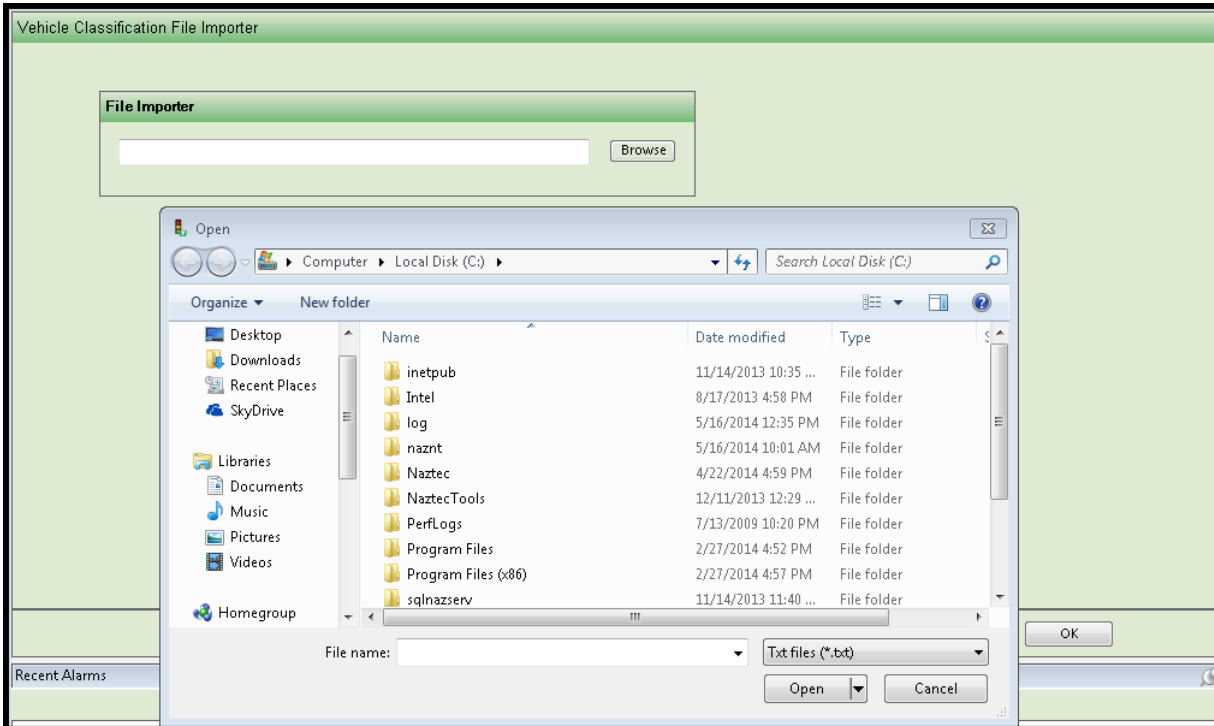
## 6.25 Vehicle Classification/Counters – JAMAR File Import

**ATMS** provides for the ability to import JAMAR road tube count files into the server database for **ATMS** report generation. This enables the user to generate a more up to date report format using the JAMAR counts.

First, navigate to *Definitions... Vehicle Classification/Counters JAMAR File Import*. The *Overview* pane will display a “Browse” window to navigate to the JAMAR count file as shown below. Browse to the file on your computer or network drive and click “Open”. This will Import any JAMAR file data using the **.txt** extension to the **ATMS** server.

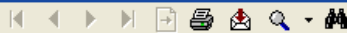


To generate a report of this data, navigate to the *Reports* module. The JAMAR data can be generated in **ATMS** report format by running the report titled “Weekly Road Tube Detector Report” on the main *Report* list.



The figure below illustrates a sample *Weekly Road Tube Detector Report*:

# Vehicle Classification



MainReport

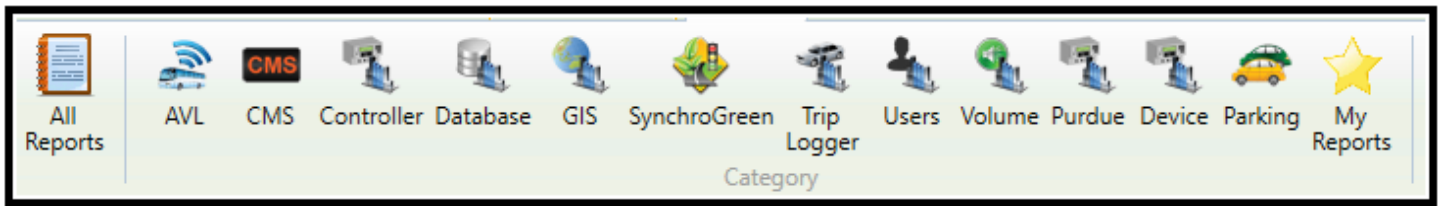
## Vehicle Classification

6/12/2007



St ID	Location 1 & Location 2	Date/Time	Bikes	Cars & 2 Axle	Bus	2 Axle 6	3 Axle	4 Axle <5	5 Axle	> 6 Axle	<6 Axle	6 Axle	>6 Axle
			Trailers	Long	Tire	Single	Single	Double	Double	Double	Multi	Multi	Multi
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 12:00:00AM	0	3	0	0	0	0	0	0	0	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 1:00:00AM	0	1	2	0	0	0	0	0	0	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 2:00:00AM	0	0	4	0	0	0	1	0	0	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 3:00:00AM	0	9	3	2	1	0	0	1	0	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 4:00:00AM	1	30	18	1	1	3	0	0	1	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 5:00:00AM	1	94	20	0	1	0	1	2	4	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 6:00:00AM	1	163	28	0	2	0	0	3	6	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 7:00:00AM	0	71	15	2	5	0	0	3	7	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 8:00:00AM	1	46	15	1	5	1	0	6	3	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 9:00:00AM	0	47	14	2	3	1	0	4	10	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 10:00:00AM	1	76	21	2	6	0	0	4	4	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 11:00:00AM	0	65	18	0	4	0	1	6	1	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 12:00:00PM	1	73	19	3	1	0	1	3	6	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 1:00:00PM	1	79	27	1	4	0	1	3	4	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 2:00:00PM	5	105	27	0	7	2	0	6	6	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 3:00:00PM	0	162	23	1	2	1	0	5	5	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 4:00:00PM	0	121	25	0	2	0	0	1	4	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 5:00:00PM	1	73	5	0	1	0	0	0	5	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 6:00:00PM	3	58	6	0	2	2	0	2	2	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 7:00:00PM	0	34	5	0	0	0	0	0	3	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 8:00:00PM	0	16	2	1	1	0	0	0	4	1	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 9:00:00PM	1	22	3	0	1	1	0	0	6	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 10:00:00PM	0	12	2	0	0	2	0	0	5	0	0
527	Jenkintown Rd. & Near Central Ave.	9/11/2000 11:00:00PM	0	8	2	0	0	1	0	0	3	0	0
527	Jenkintown Rd. & Near Central Ave.	9/12/2000 12:00:00AM	0	3	1	1	0	0	0	0	0	0	0

# 7 Reports Module

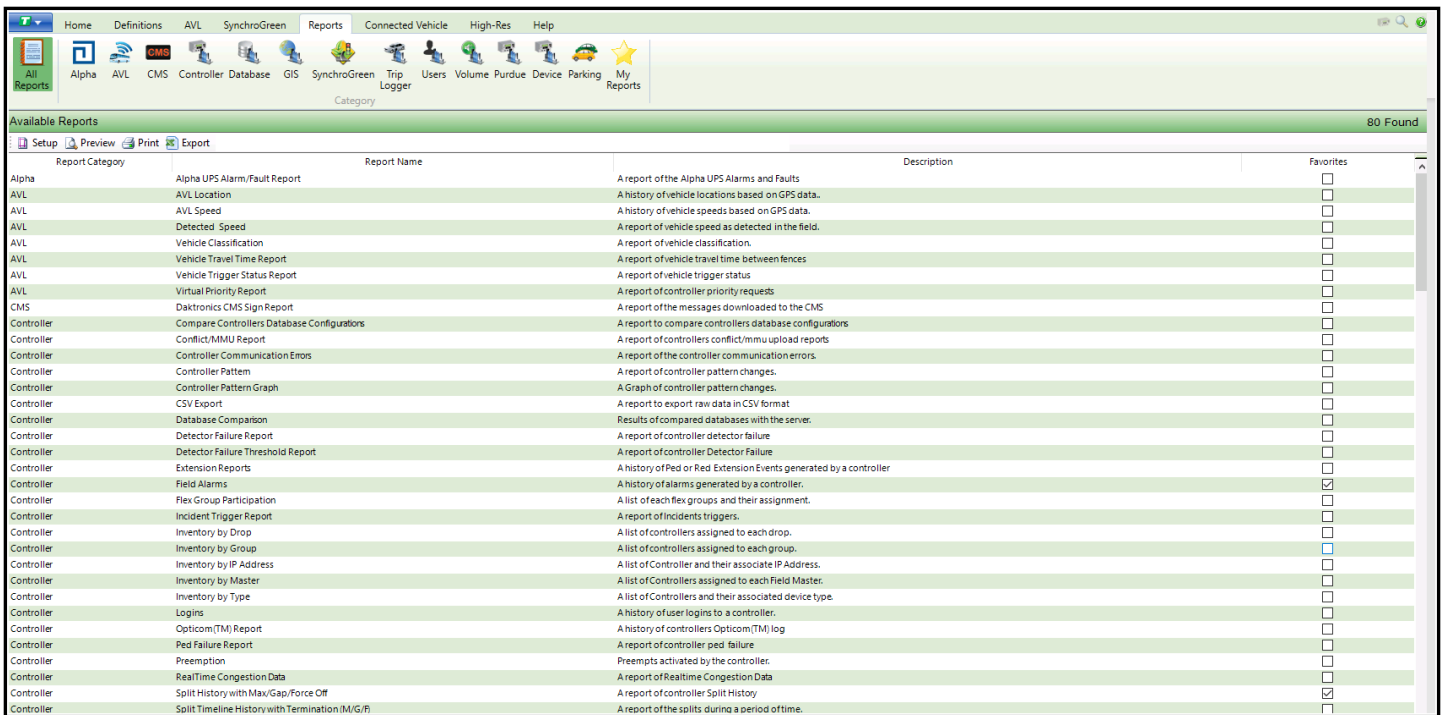


The *Reports* Module provides the user the ability to generate reports from a library of pre-formatted report templates from the **ATMS** database. **ATMS** stores all imported and system-generated data into the system's main SQL database, and makes it available for future report generation. This section will show you how to search and generate *Reports* in the **ATMS** system.

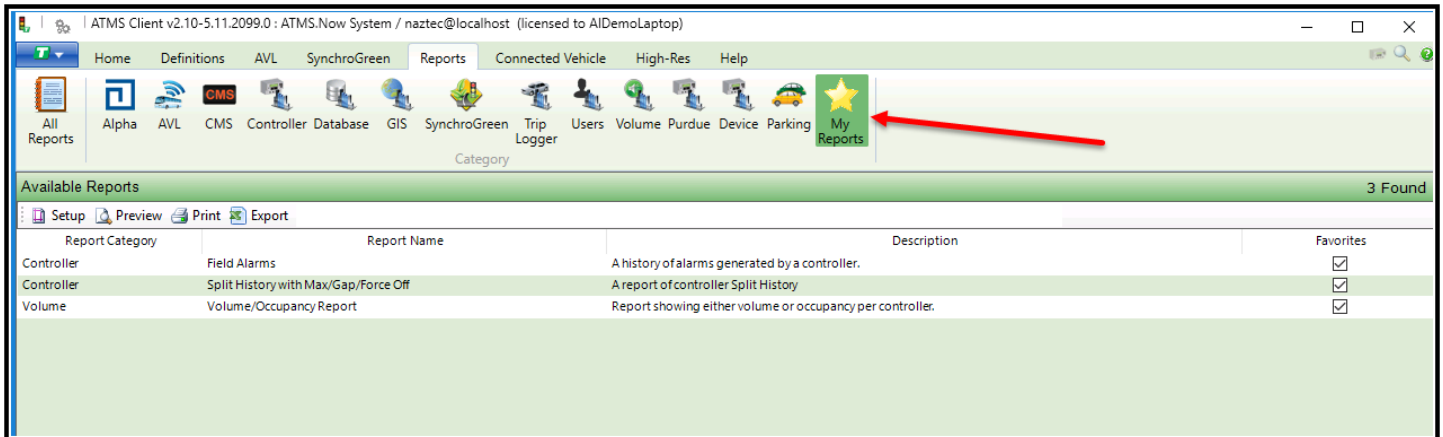
The *Reports* module offers pre-defined report templates from the following database categories:

- Controller Data (Inventory, Groups, Alarms, Volume/Occupancy, Coordination Reporting, etc)
- Users (Log-In reporting, Upload/Download activity, etc)
- Timing Sheets
- GIS (Incident Reporting)
- AVL Data and Vehicles (Applicable for the **FLEET.now** and **PRIORITY.now** optional modules)
- Trip Logging (optional module)
- Device Hardware (including optional UPS and CMS)
- SynchroGreen (optional module)
- Parking (optional module)
- Purdue High Resolution Data Reports (optional module)

The list of available *Reports* is displayed in the Reports *Overview* pane. We frequently add Report Templates and Timing Sheets for the *Report* module. When available, new *Reports* are added when routine **ATMS** system updates are performed.



In addition, ATMS versions 2.10 and later now have a My Reports Category selection. This selection allows the user to set up a subset of commonly used reports, for easy selection. A column named Favorites will be displayed on the Report overview screen show the user the selected reports.

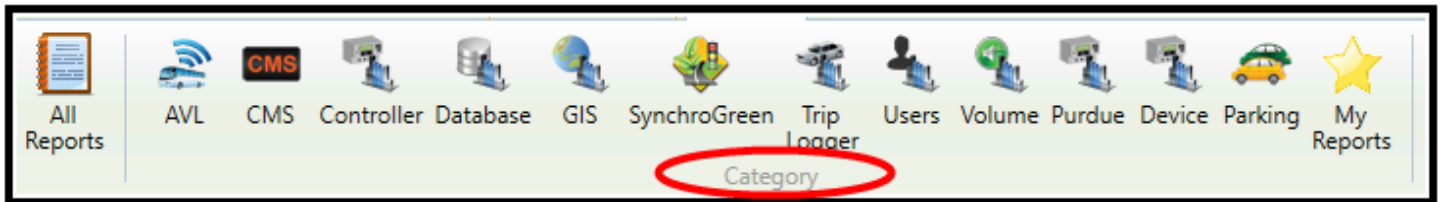


All functions that are displayed within **ATMS** are permitted for the user that is logged in. If a specific function for a user under *User Definitions* is not permitted for that user, then the item will not appear at all within **ATMS**.

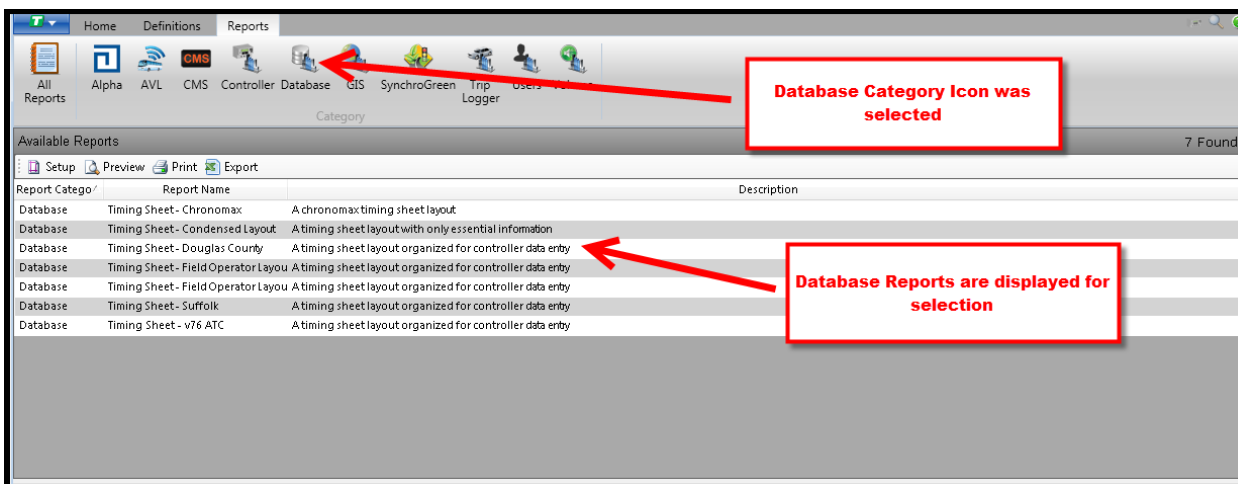
In order to perform functions within the Reports module, your user privileges need to be enabled under User Definitions.

## 7.1 Search Engine for Definitions Module

The list or specific report within the *Reports* module must be selected using the *Search* icons on the *Navigation* ribbon as shown below. The displayed *Reports* that the user can select, will be associated with the chosen category icon.

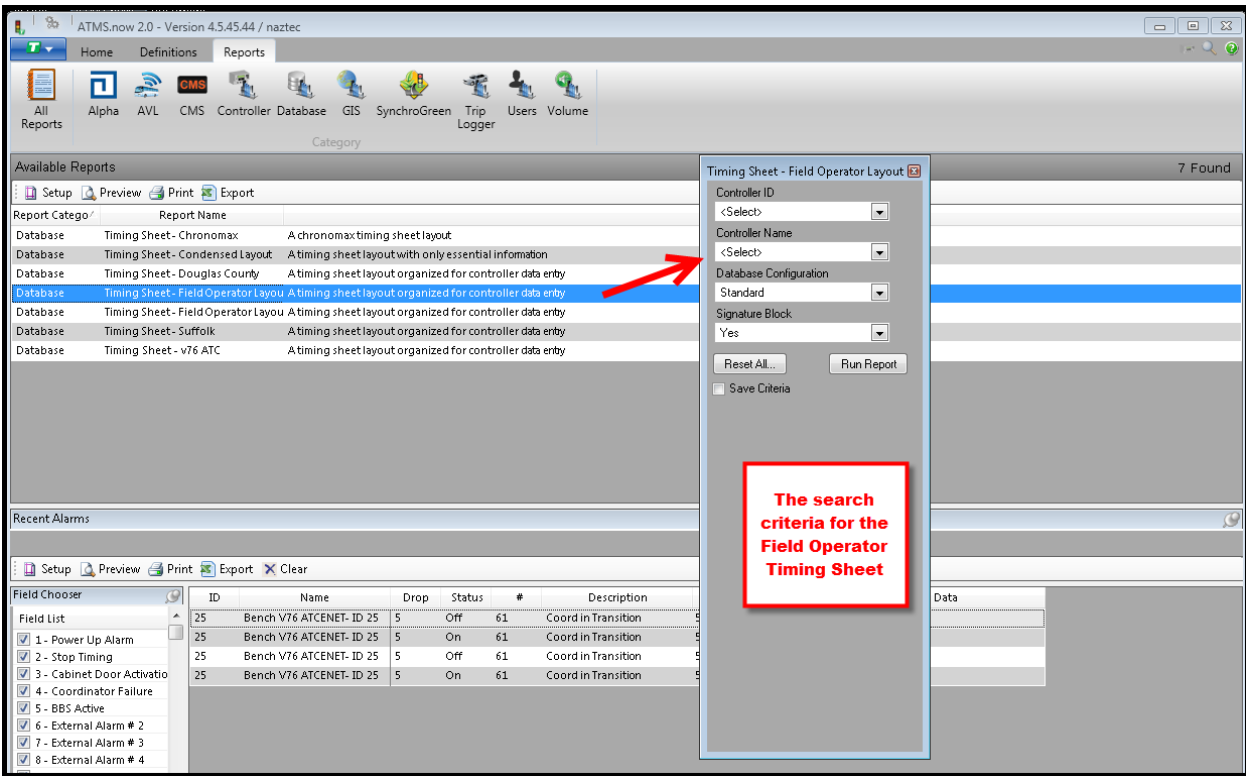


To navigate to the specific report type, select the category icon and then select the report that you would like to run via the list on the overview pane. A full list of the available *Reports* will be displayed on when selecting the *All Reports* icon..

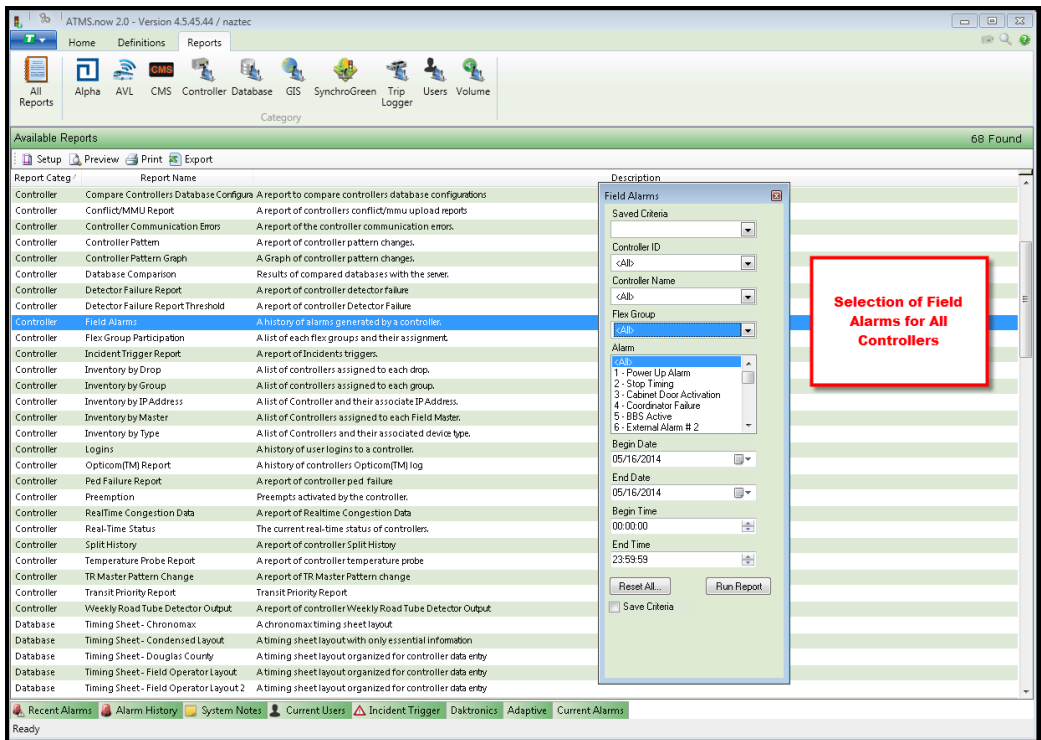


Select the desired report, and the specific report Search Engine window will be displayed. The user will fill out the parameters for their report.



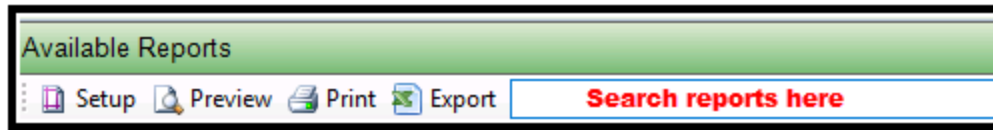


Based on the specific report, the report criteria search does not require that each field have a specific entry. The default “All” will allow the Search to be wide open for each parameter that has an “All” entry.



## 7.2 Report List Tools

When a report list is generated and displayed in the main *Overview* pane as shown above, a toolbar will be provided in the upper left corner of the pane. This toolbar will provide icons for the following actions:



**Page Setup** – Allows the specific setup of the printed page.



**Print Preview** – Allows the user to preview the appearance of the document.

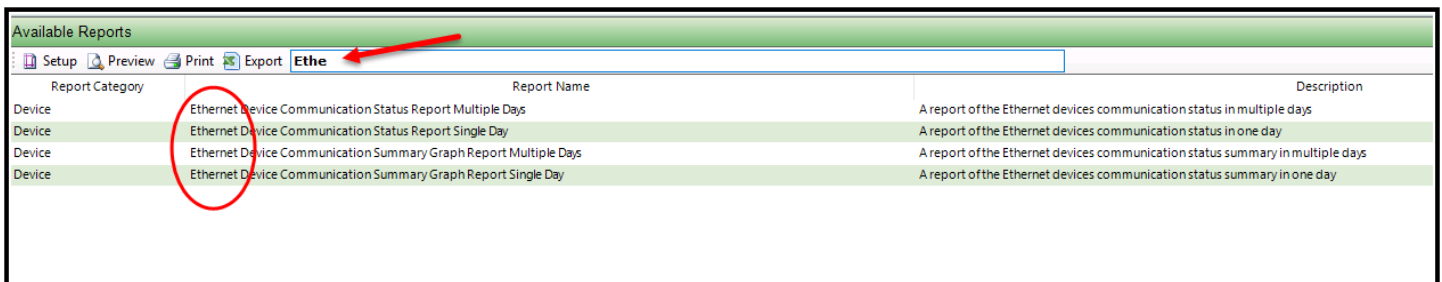


**Print** - Allows the displayed report list to print to a printer(s) that are configured to the computer.



**Export to Excel** – Allows the displayed list to be saved to disk as an Excel document.

There is also a search area on the for the user to Type in a report name. Reports will be displayed on the Report Overview pane using the typed search data.



Report Category	Report Name	Description
Device	Ethernet Device Communication Status Report Multiple Days	A report of the Ethernet devices communication status in multiple days
Device	Ethernet Device Communication Status Report Single Day	A report of the Ethernet devices communication status in one day
Device	Ethernet Device Communication Summary Graph Report Multiple Days	A report of the Ethernet devices communication status summary in multiple days
Device	Ethernet Device Communication Summary Graph Report Single Day	A report of the Ethernet devices communication status summary in one day

### 7.3 Generating A Specific Report

Select a report type from the Report List in the *Overview* pane. The *Report Criteria* search engine will display selection windows specific to the selected report type. The *Report Criteria* search for most report types include drop-down navigation by *Controller ID*, *Controller Name*, *Flex Groups*, *Groups*, *Master*, *Begin Date*, *End Date*, *Begin Time*, and *End Time*.

The Figure shown to the right illustrates the calendar that will appear when selecting a *Begin Date* or *End Date*. The **RED** circle marks the current day, which is supplied by the **ATMS** server. Use the arrows to navigate to the targeting Month and Year. Click on the specific day you need for the *Report* date. It will then appear with a **BLUE** highlight on the selected day.

Volume and Occupancy reports will also provide drop-down criteria selections for compass directions, detectors, detector types and Turing movements. The Volume/Occupancy, Volume/Occupancy per Lane and Turning Movement count reports provide additional drop-down criteria to print data for all controllers in a Flex Group.

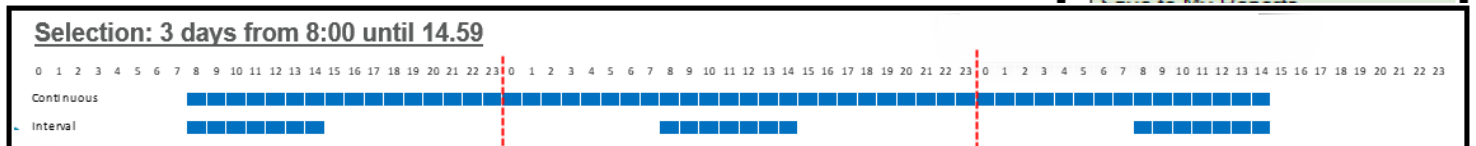
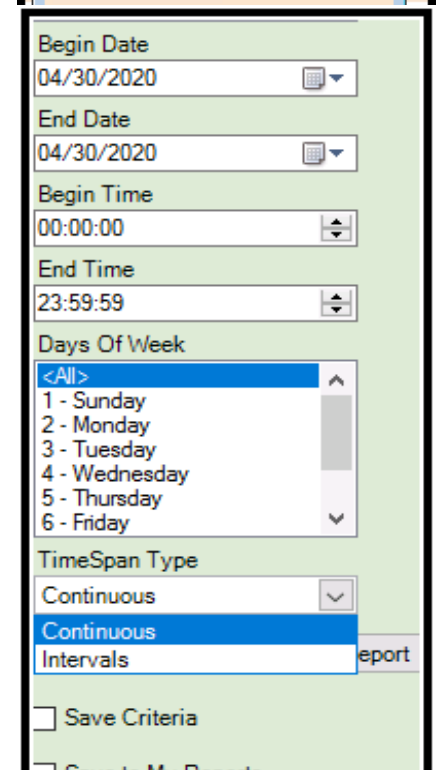
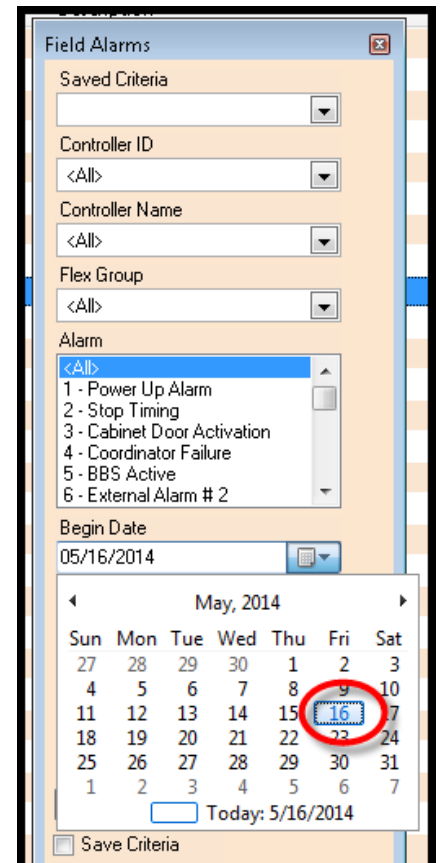
The Split reports provide additional drop-down criteria to print splits for all controllers in a Flex Group, by days of the week, via a continuous time span or a selected interval time span. In addition, minimum split, maximum split, split duration standard deviation and the 50th and 85th percentile values for the split duration are added in the summary table for each controller in Split History report.

The Field Alarms report as well as the Extension report also provides an option to report data as via a continuous time span or a selected interval time span.

When all of the *Report Criteria* parameters have been completed, select the “*Run Report*” button to generate the report. The new report will appear in the main *Overview* pane. If there is no data in the report when it is displayed, then there is no valid data on the server for the search parameters that were chosen.

For some reports such as Split History reports the requested data could be stored in one of the archived databases of ATMS. If so, the user first needs to select the appropriate database (Table) and then run the report again in order to see the report populated with data.

NOTE: When a report has the option for a displaying data based on an Interval time span, the user should program days that the data is to be collected and the Begin Date and End Date as separate values. The user must also program the Begin Time and End Time as a range to be reported. The chart below shows three days of data being collected continually and for the intervals between 8:00am to 14:59.



## 7.4 Report Criteria

To save the *Report Criteria* as a template for future use, check the “Save Criteria” box at the bottom of the *Search Engine*.

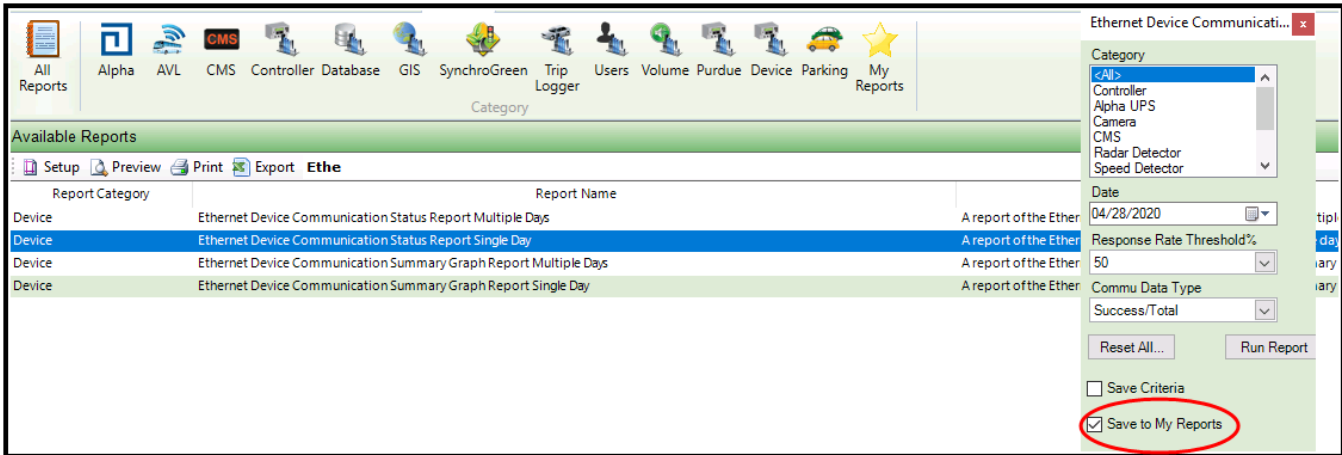
The screenshot displays the ATMS Search Engine interface. The main window shows a list of available reports under the 'Controller' category. The 'Field Alarms' report is selected. A configuration window for 'Field Alarms' is open on the right side. The configuration includes several dropdown menus for 'Saved Criteria', 'Controller ID', 'Controller Name', 'Flex Group', and 'Alarm'. The 'Alarm' dropdown is expanded, showing a list of alarm types. Below these are fields for 'Begin Date', 'End Date', 'Begin Time', and 'End Time'. There are also dropdowns for 'Days Of Week' and 'TimeSpan Type'. At the bottom of the configuration window, there are two checkboxes: 'Save Criteria' (which is checked and highlighted with a red circle) and 'Save to My Reports'.

Report Category	Report Name	Description
Controller	Compare Controllers Database Configurations	A report to compare
Controller	Conflict/MMU Report	A report of controlle
Controller	Controller Communication Errors	A report of the contr
Controller	Controller Pattern	A report of controlle
Controller	Controller Pattern Graph	A Graph of controlle
Controller	CSV Export	A report to export ra
Controller	Database Comparison	Results of compared
Controller	Detector Failure Report	A report of controlle
Controller	Detector Failure Threshold Report	A report of controlle
Controller	Extension Reports	A history of Ped or R
Controller	Field Alarms	A history of alarms g
Controller	Flex Group Participation	A list of each flex gro
Controller	Incident Trigger Report	A report of Incidents
Controller	Inventory by Drop	A list of controllers a
Controller	Inventory by Group	A list of controllers a
Controller	Inventory by IP Address	A list of Controller ar
Controller	Inventory by Master	A list of Controllers a
Controller	Inventory by Type	A list of Controllers a
Controller	Logins	A history of user logi
Controller	Opticom(TM) Report	A history of controlle
Controller	Ped Failure Report	A report of controlle
Controller	Preemption	Preempts activated l
Controller	RealTime Congestion Data	A report of Realtime
Controller	Split History with Max/Gap/Force Off	A report of controlle
Controller	Split Timeline History with Termination (M/G/F)	A report of the splits
Controller	Temperature Probe Report	A report of controlle
Controller	TR Master Pattern Change	A report of TR Maste
Controller	Transit Priority Report	Transit Priority Repo
Controller	Weekly Road Tube Detector Output	A report of controlle

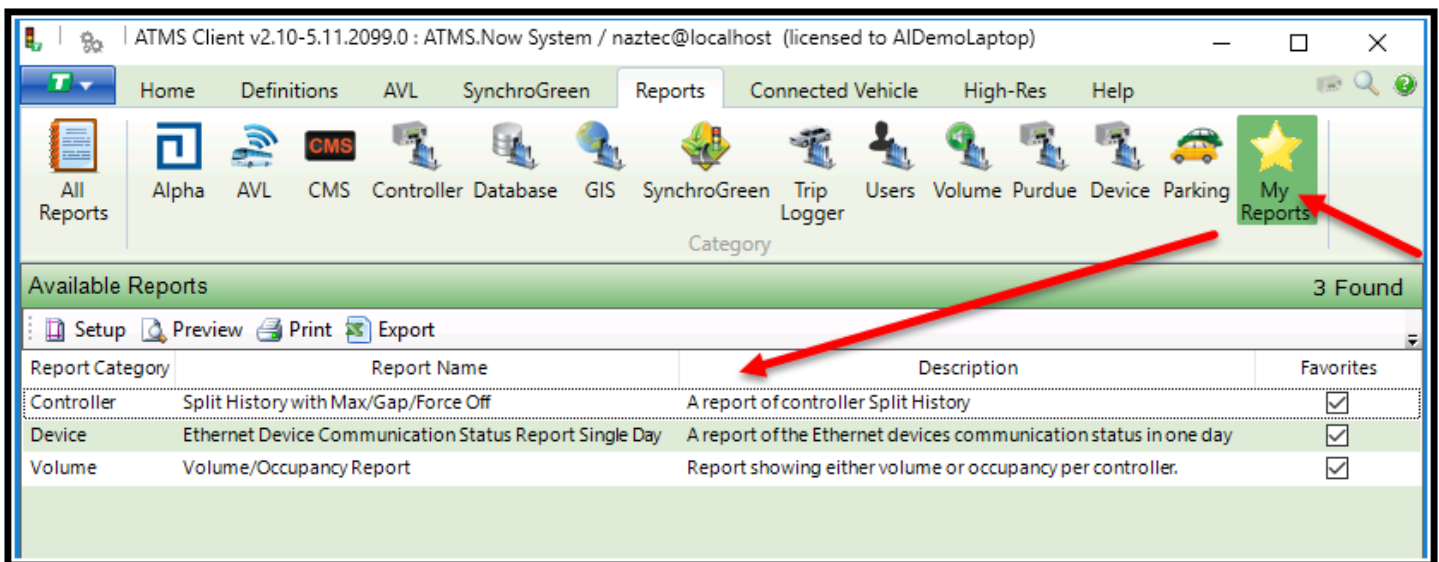
The criteria can be used to quickly generate a commonly used report.

## 7.5 Favorite Reports

To save a report as a “**Favorite**” and add it to the My Report List check the “Save to My Reports” box at the bottom of the search engine.



On the Report Action Bar the user can select the My Reports Icon to display their Favorite reports.



## 7.5.1 Scheduling reports using Report Criteria

When the “Run Report” button is selected, a dialog box will appear to name the *Report Criteria* template. You can set up e-mail notification so that the report can be e-mailed to the appropriate personnel once you set up the scheduler. Please insure that you set up a Criteria name and User or User Group that the report will be distributed to.

Field Alarms

Saved Criteria

Controller ID

Controller Name

Flex Group

Alarm

Begin Date

End Date

Begin Time

End Time

Days Of Week

TimeSpan Type

Reset All...

Run Report

Save Criteria

Save to My Reports

Report Criteria Details

Criteria Name: Daily Field Alarms for SH 6

Email Notification

User Distribution: Weekend Operations Group

OK Cancel

Now go to the scheduler and create a new schedule. By choosing Auto Reports, you will notice that an entry has been added that matches the newly created report criteria. You may schedule this so that the report is generated at the time scheduled and it will be e-mailed in .pdf format at the same time.

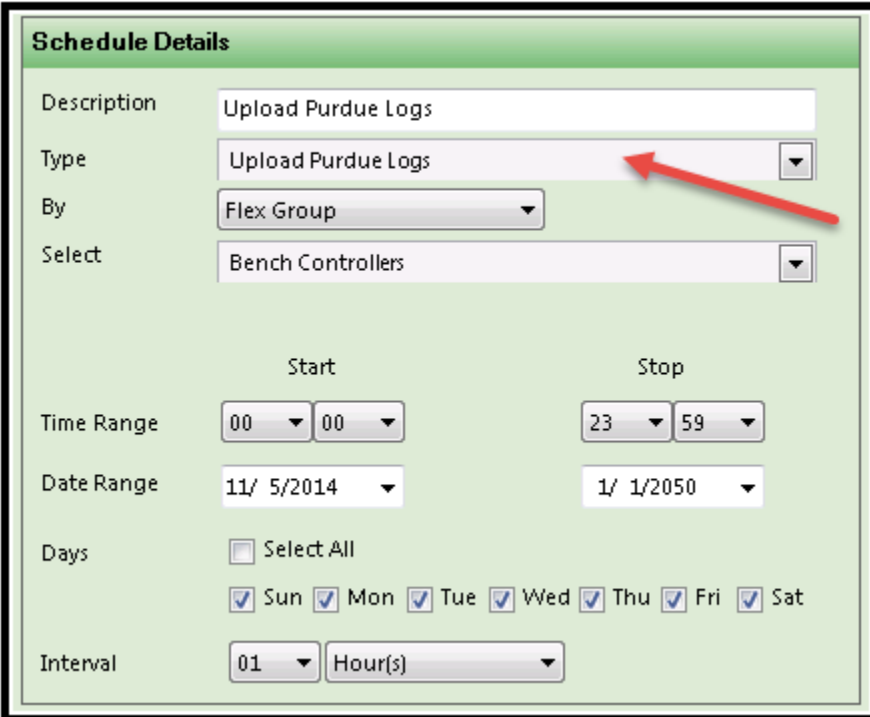
To reset your search parameters for the *Report Criteria* search, select “Reset All”. This resets the search parameters for both windows to “All”. From this point, new entries for the report can be entered.

## 7.6 High Resolution Data Logging (Purdue) Reports

Automated Traffic Signal Performance Measures are a series of aids that display the high-resolution data from traffic signal controllers. They are a valuable asset management tool, aiding technicians and managers in the control of both traffic signal hardware and traffic signal timing and coordination. They allow analysis of data collected 24 hours a day, 7 days a week, improving the accuracy, flexibility, and performance of signal equipment and the system as a whole. Cubic | Trafficware provides the high resolution logging facilities that will gather this data and report it to the **ATMS** central system. This logging needs the proper controller hardware for it to work, specifically the national standard Advanced Transportation controller (ATC). Once the data logging is turned on in an ATC, ATMS can gather the data.

High resolution logging also known as Purdue logging is set up to retrieve ATC logging data via a FTP transfer. In fact it is the primary way to retrieve data if you do not have the ATMS central system. The Purdue standard requires that the user be able to retrieve a proprietary data format file from the controller via FTP. The standard also requires a file naming convention that indicates the collection date and times of the file.

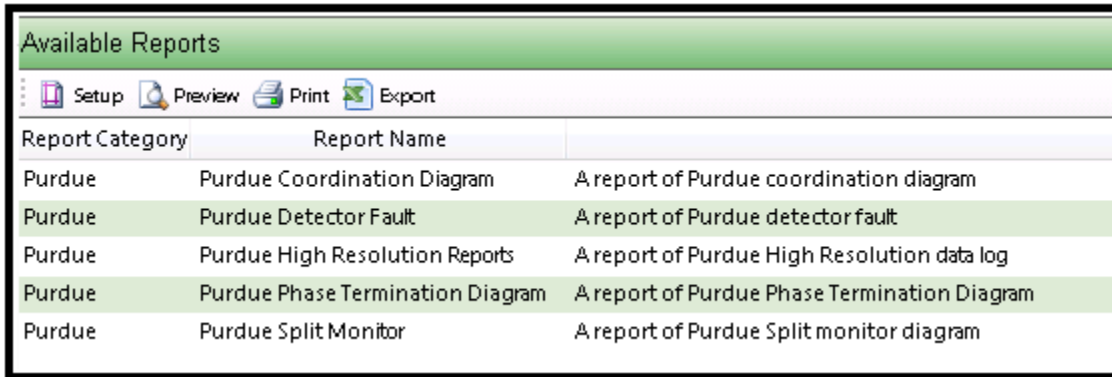
Cubic | Trafficware has automated this FTP retrieval task by adding an Item in the schedule to retrieve the data. Go to Definitions-> Scheduler and create a Purdue logging schedule as shown below:



The screenshot shows a 'Schedule Details' form with the following fields and values:

- Description: Upload Purdue Logs
- Type: Upload Purdue Logs (indicated by a red arrow)
- By: Flex Group
- Select: Bench Controllers
- Time Range: Start 00:00, Stop 23:59
- Date Range: 11/ 5/2014 to 1/ 1/2050
- Days:  Select All,  Sun,  Mon,  Tue,  Wed,  Thu,  Fri,  Sat
- Interval: 01 Hour(s)

The default logging period in the ATC is one hour, so we have matched the schedule to reflect this default. Once data gets logged, the user can utilize one of two Controller reports shown below:



The screenshot shows a web interface titled "Available Reports". At the top, there are icons for Setup, Preview, Print, and Export. Below this is a table with three columns: Report Category, Report Name, and a description. The table lists five reports, all under the "Purdue" category.

Report Category	Report Name	
Purdue	Purdue Coordination Diagram	A report of Purdue coordination diagram
Purdue	Purdue Detector Fault	A report of Purdue detector fault
Purdue	Purdue High Resolution Reports	A report of Purdue High Resolution data log
Purdue	Purdue Phase Termination Diagram	A report of Purdue Phase Termination Diagram
Purdue	Purdue Split Monitor	A report of Purdue Split monitor diagram

The High-resolution data is a user selectable feature in engine boards passed ATC's using V76\_8J or Scout.x using V6. The user can select to turn it on or off (default value) in each controller. When the data is turned on, it is stored in the controller and should be polled by the central each hour. Keep in mind that it is estimated that the High-Resolution Data for a single controller will account to 300,000 rows of data in the SQL database for each 24-hour period so the database size will grow exponentially and accommodations for disk space should be accounted for.

Beginning with ATMS 2.12 support for all Event Codes (Enumeration Values) defined in the High-Resolution Data Logger 2020 specification are available.



## 7.6.1 Purdue Coordination Diagram

Selection of this report will graphically chart the detection data against the GYR data in a graphical chart. Selecting this report will bring up the search bar, where the user can select the intersection along with the Coordination Phase, Start Color (start of cycle), Phase(s) and Detector(s), Date, Begin Time and End time.

The screenshot displays the 'Available Reports' window with a table of report options. The 'Purdue Coordination Diagram' report is highlighted. A configuration dialog box for this report is open, showing various search and filter criteria.

Report Category	Report Name	Description
Purdue	Purdue Coordination Diagram	A report of Purdue coordination diagram
Purdue	Purdue Detector Fault	A report of Purdue detector fault
Purdue	Purdue High Resolution Reports	A report of Purdue High Resolution data log
Purdue	Purdue Phase Termination Diagram	A report of Purdue Phase Termination Diagram
Purdue	Purdue Split Monitor	A report of Purdue Split monitor diagram

**Purdue Coordination Diagram Configuration:**

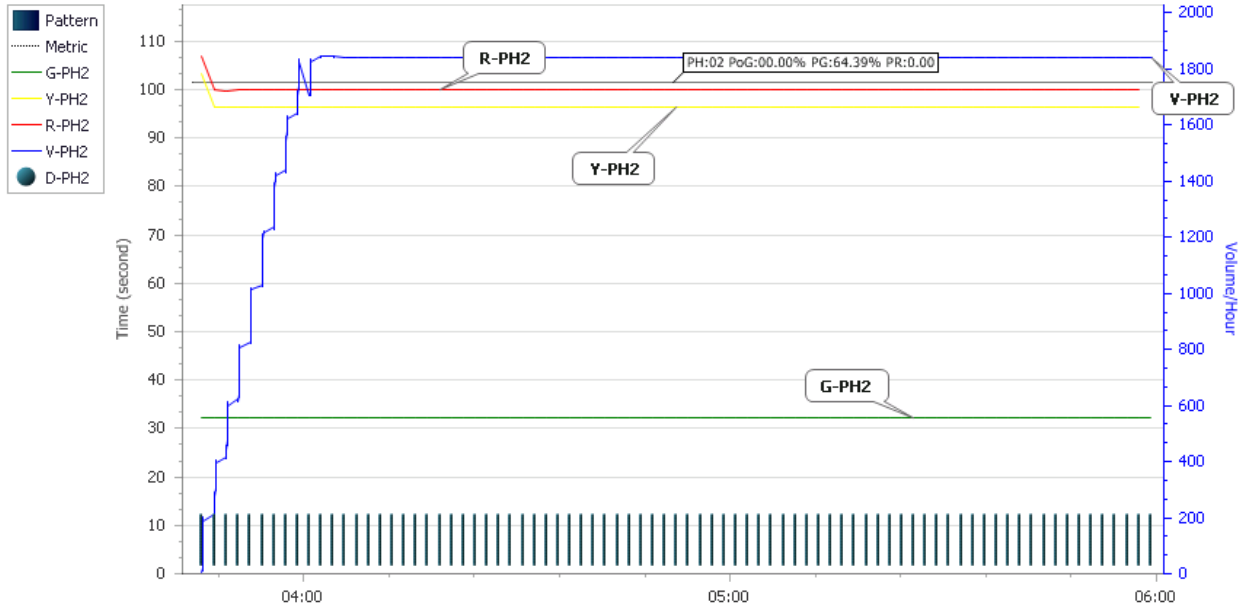
- Controller ID: <Select>
- Controller Name: <Select>
- Coord Phase/Overlap: PH2
- Start Color: Red
- Phases: <Nothing>, 1, 2, 3, 4, 5, 6
- Overlaps: <Nothing>, 1, 2, 3, 4, 5, 6
- Detectors (e.g. 2,4;7,8-10,12):
- Date: 06/24/2016
- Begin Time: 00:00:00
- End Time: 23:59:59
- Show Volume/Hour: Yes
- Show Label: No
- Show Metrics Tag: No
- Report Mode: Single report
- Buttons: Reset All..., Run Report
- Save Criteria:

The following is a screen shot from the generated report using the single report mode selection:

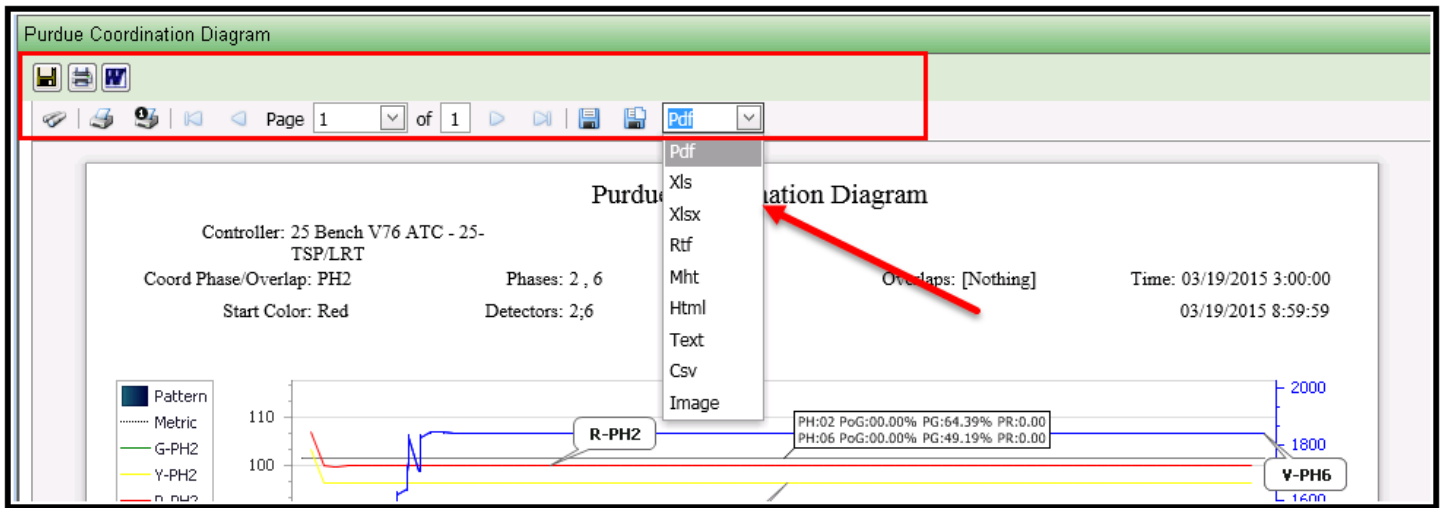


### Purdue Coordination Diagram

Controller: 25 Bench V76 ATC - 25-TSP/LRT  
Coord Phase/Overlap: PH2 Phases: 2 Overlaps: [Nothing] Time: 03/19/2015 3:00:00  
Start Color: Red Detectors: 2 03/19/2015 8:59:59

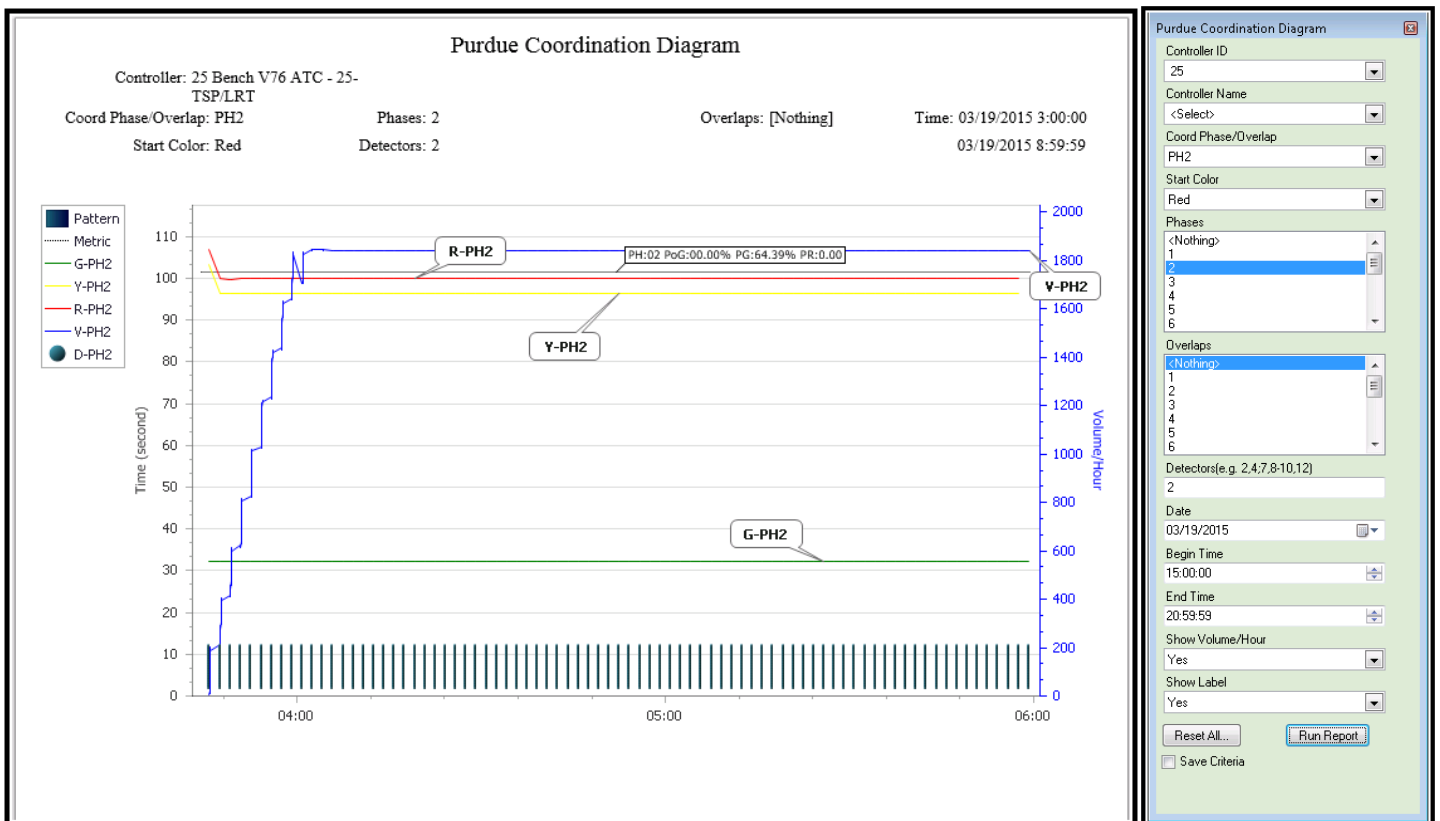


Multiple pages may be generated. If there are multiple pages they can be selected via the menu bar above the report display. The menu bar is also used to print data or save data to various formats using the icons on the menu bar above the report display.



## Reading the Chart

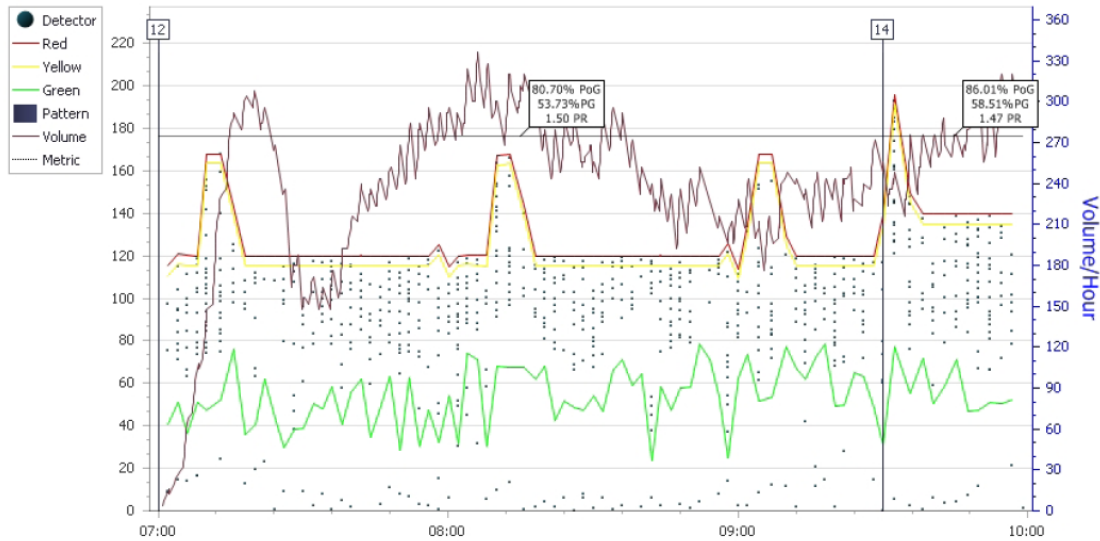
The chart below shows data for Phase 2 running during a 100 second Cycle with the coord reference point set to ENDGRN coordination. To match this selection set up the search window as shown to the right.



Below are samples of Purdue Coordination diagrams generated via an ATMS report.

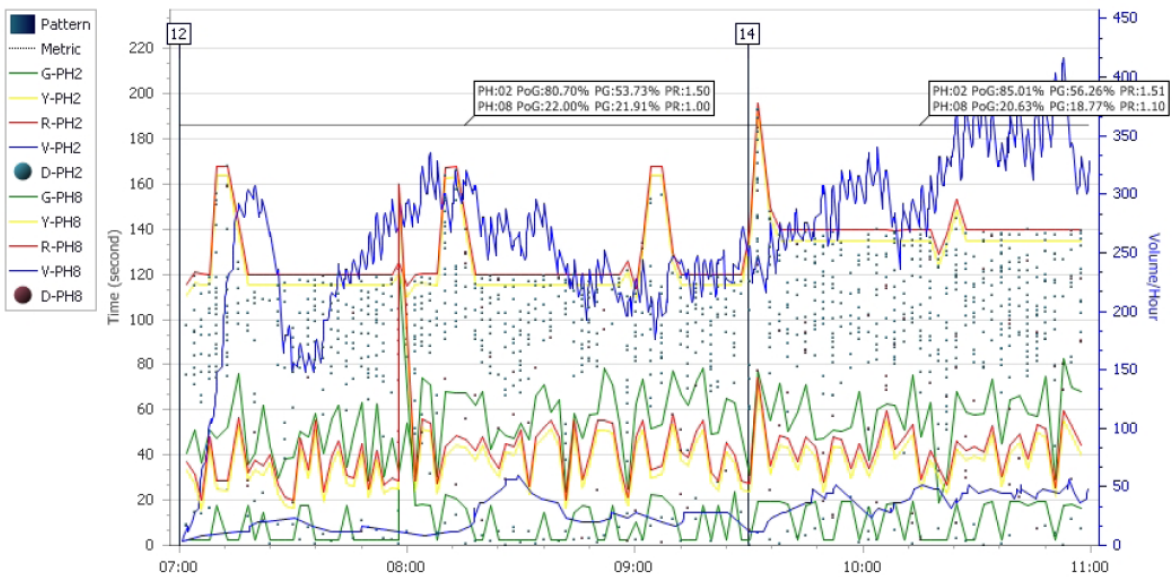
### Purdue Coordination Diagram

Controller: 2356 Purdue Controller  
 Phases Selected: 2  
 Detectors Selected: 2  
 Coord Phase: 2  
 Start Color: Red  
 Time: 12/01/2014 7:00:00  
 12/01/2014 9:59:59  
 Phase: 2



### Purdue Coordination Diagram

Controller: 2356 Purdue Controller  
 Coord Phase/Overlap: PH2  
 Start Color: Red  
 Phases: 2,8  
 Detectors: 2,4  
 Overlaps:  
 Time: 12/01/2014 7:00:00  
 12/01/2014 10:59:59



There is also a new selection criteria under report Mode to create a side by side report. This will generate reports for all used phases and overlaps (1 graph per phase and overlap) along with a metrics summary report. Below is a screen shot of one graph and the metrics summary.

**Purdue Coordination Diagram**

Controller ID: <Select>

Controller Name: <Select>

Coord Phase/Overlap: PH2

Start Color: Red

Phases: <Nothing>, 1, 2, 3, 4, 5, 6

Overlaps: <Nothing>, 1, 2, 3, 4, 5, 6

Detectors (e.g. 2,4;7,8-10,12):

Date: 06/24/2016

Begin Time: 00:00:00

End Time: 23:59:59

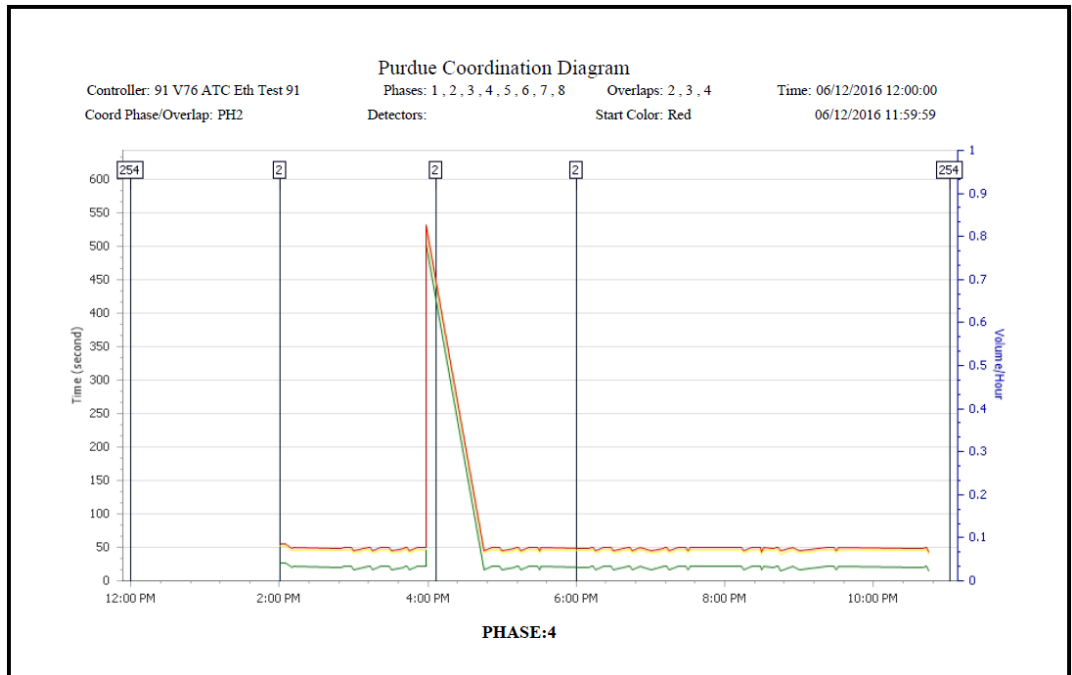
Show Volume/Hour: Yes

Show Label: No

Show Metrics Tag: No

Report Mode: Side by side report

Save Criteria



**Purdue Coordination Diagram**

Controller: 91 V76 ATC Eth Test 91      Phases: 1, 2, 3, 4, 5, 6, 7, 8      Overlaps: 2, 3, 4      Time: 06/12/2016 12:00:00  
 Coord Phase/Overlap: PH2      Detectors:      Start Color: Red      06/12/2016 11:59:59

**Metrics**

Name	From	To	Pattern	PoG%	PG%	PR
PH1	12:00:03	14:00:05	254	.00	.00	.00
PH1	14:00:05	16:06:19	2	.00	13.62	.00
PH1	16:06:19	18:00:04	2	.00	14.69	.00
PH1	18:00:04	23:01:39	2	.00	14.64	.00
PH1	23:01:39	23:01:39	254	.00	NaN	NaN
PH2	12:00:03	14:00:05	254	.00	.00	.00
PH2	14:00:05	16:06:19	2	.00	133.44	.00
PH2	16:06:19	18:00:04	2	.00	43.63	.00
PH2	18:00:04	23:01:39	2	.00	43.08	.00
PH2	23:01:39	23:01:39	254	.00	NaN	NaN
PH3	12:00:03	14:00:05	254	.00	.00	.00
PH3	14:00:05	16:06:19	2	.00	13.72	.00
PH3	16:06:19	18:00:04	2	.00	21.39	.00
PH3	18:00:04	23:01:39	2	.00	14.50	.00
PH3	23:01:39	23:01:39	254	.00	NaN	NaN
PH4	12:00:03	14:00:05	254	.00	.00	.00
PH4	14:00:05	16:06:19	2	.00	10.21	.00
PH4	16:06:19	18:00:04	2	.00	6.96	.00
PH4	18:00:04	23:01:39	2	.00	7.31	.00

## 7.6.2 Purdue High Resolution Reports

Data can also be displayed in a High Resolution Data Report. Again select the Report and fill out the search criteria.

Report Categ	Report Name	Description
Controller	Compare Controllers Database Config	A report to compare controllers database configurations
Controller	Conflict/MMU Report	A report of controllers conflict/mmu upload reports
Controller	Controller Communication Errors	A report of the controller communication errors.
Controller	Controller Pattern	A report of controller pattern changes.
Controller	Controller Pattern Graph	A Graph of controller pattern changes.
Controller	Database Comparison	Results of compared databases with the sever.
Controller	Detector Failure Report	A report of controller detector failure
Controller	Detector Failure Report Threshold	A report of controller Detector Failure
Controller	Field Alarms	A history of alarms generated by a controller.
Controller	Flex Group Participation	A list of each flex groups and their assignment.
Controller	Incident Trigger Report	A report of Incidents triggers.
Controller	Inventory by Drop	A list of controllers assigned to each drop.
Controller	Inventory by Group	A list of controllers assigned to each group.
Controller	Inventory by IP Address	A list of controller and their associate IP Address.
Controller	Inventory by Master	A list of Controllers assigned to each Field Master.
Controller	Inventory by Type	A list of Controllers and their associated device type.
Controller	Logins	A history of user logins to a controller.
Controller	Opticom(TM) Report	A history of controllers Opticom(TM) log
Controller	Ped Failure Report	A report of controller ped failure
Controller	Preemption	Preempts activated by the controller.
Controller	Purdue Coordination Diagram	A report of Purdue coordination diagram
Controller	Purdue Detector Fault	A report of Purdue detector fault
Controller	<b>Purdue High Resolution Reports</b>	<b>A report of Purdue High Resolution data log</b>
Controller	Purdue Phase Termination Diagram	A report of Purdue Phase Termination Diagram
Controller	RealTime Congestion Data	A report of Realtime Congestion Data
Controller	Real-Time Status	The current real-time status of controllers.
Controller	Split History	A report of controller Split History
Controller	Temperature Probe Report	A report of controller temperature probe
Controller	TR Master Pattern Change	A report of TR Master Pattern change
Controller	Transit Priority Report	Transit Priority Report
Controller	Weekly Road Tube Detector Output	A report of controller Weekly Road Tube Detector Output

The following is displayed via this report.

Date/Time	Enum	Color	Data	X-Coord	Y-Coord
03/19/2015 3:46:14.100	8	Green	2	03:45:41.900	32.20
03/19/2015 3:47:25.200	8	Yellow	2	03:45:41.900	103.30
03/19/2015 3:47:28.700	10	Red	2	03:45:41.900	106.80
03/19/2015 3:48:00.900	8	Green	2	03:47:28.700	32.20
03/19/2015 3:49:05.200	8	Yellow	2	03:47:28.700	96.50
03/19/2015 3:49:08.700	10	Red	2	03:47:28.700	100.00
03/19/2015 3:49:40.900	8	Green	2	03:49:08.700	32.20
03/19/2015 3:50:45.000	8	Yellow	2	03:49:08.700	96.30
03/19/2015 3:50:48.500	10	Red	2	03:49:08.700	99.80
03/19/2015 3:51:20.700	8	Green	2	03:50:48.500	32.20
03/19/2015 3:52:25.000	8	Yellow	2	03:50:48.500	96.50
03/19/2015 3:52:28.500	10	Red	2	03:50:48.500	100.00
03/19/2015 3:53:00.700	8	Green	2	03:52:28.500	32.20
03/19/2015 3:54:05.000	8	Yellow	2	03:52:28.500	96.50
03/19/2015 3:54:08.500	10	Red	2	03:52:28.500	100.00
03/19/2015 3:54:40.700	8	Green	2	03:54:08.500	32.20
03/19/2015 3:55:45.000	8	Yellow	2	03:54:08.500	96.50
03/19/2015 3:55:48.500	10	Red	2	03:54:08.500	100.00
03/19/2015 3:56:20.700	8	Green	2	03:55:48.500	32.20
03/19/2015 3:57:25.000	8	Yellow	2	03:55:48.500	96.50
03/19/2015 3:57:28.500	10	Red	2	03:55:48.500	100.00
03/19/2015 3:58:00.700	8	Green	2	03:57:28.500	32.20

Each page of the report depicts the specific Purdue data, including the coord phase, selected Phase, Output Color, Purdue enumeration data values, etc.



## Purdue High Resolution Reports

Controller: 25 Bench V76 ATC - 25-TSP/LRT

Coord Phase: 2

Time: 03/19/2015 3:00:00

Phase: 2

Start Color: Red

03/19/2015 3:59:59

Date/Time	Enum	Color	Data	X-Coord	Y-Coord
03/19/2015 3:46:14.100	1	Green	2	03:45:41.900	32.20
03/19/2015 3:47:25.200	8	Yellow	2	03:45:41.900	103.30
03/19/2015 3:47:28.700	10	Red	2	03:45:41.900	106.80
03/19/2015 3:48:00.900	1	Green	2	03:47:28.700	32.20
03/19/2015 3:49:05.200	8	Yellow	2	03:47:28.700	96.50
03/19/2015 3:49:08.700	10	Red	2	03:47:28.700	100.00
03/19/2015 3:49:40.900	1	Green	2	03:49:08.700	32.20
03/19/2015 3:50:45.000	8	Yellow	2	03:49:08.700	96.30
03/19/2015 3:50:48.500	10	Red	2	03:49:08.700	99.80
03/19/2015 3:51:20.700	1	Green	2	03:50:48.500	32.20
03/19/2015 3:52:25.000	8	Yellow	2	03:50:48.500	96.50
03/19/2015 3:52:28.500	10	Red	2	03:50:48.500	100.00
03/19/2015 3:53:00.700	1	Green	2	03:52:28.500	32.20
03/19/2015 3:54:05.000	8	Yellow	2	03:52:28.500	96.50
03/19/2015 3:54:08.500	10	Red	2	03:52:28.500	100.00
03/19/2015 3:54:40.700	1	Green	2	03:54:08.500	32.20
03/19/2015 3:55:45.000	8	Yellow	2	03:54:08.500	96.50
03/19/2015 3:55:48.500	10	Red	2	03:54:08.500	100.00
03/19/2015 3:56:20.700	1	Green	2	03:55:48.500	32.20
03/19/2015 3:57:25.000	8	Yellow	2	03:55:48.500	96.50
03/19/2015 3:57:28.500	10	Red	2	03:55:48.500	100.00
03/19/2015 3:58:00.700	1	Green	2	03:57:28.500	32.20
03/19/2015 3:59:05.000	8	Yellow	2	03:57:28.500	96.50
03/19/2015 3:59:08.500	10	Red	2	03:57:28.500	100.00
03/19/2015 3:59:40.700	1	Green	2	03:59:08.500	32.20

## 7.6.3 Purdue Phase Termination Diagram

Phase terminations can also be charted via this report. In particular Gap Outs, Max Outs, Force Off's and Pedestrians can be plotted as shown below.

Available Reports

Setup Preview Print Export

Report Category	Report Name	Description
Controller	Compare Controllers Database Configurations	A report to compare controllers database configurations
Controller	Conflict/MMU Report	A report of controllers conflict/mmu upload reports
Controller	Controller Communication Errors	A report of the controller communication errors.
Controller	Controller Pattern	A report of controller pattern changes.
Controller	Controller Pattern Graph	A Graph of controller pattern changes.
Controller	Database Comparison	Results of compared databases with the sever.
Controller	Detector Failure Report	A report of controller detector failure
Controller	Detector Failure Report Threshold	A report of controller Detector Failure
Controller	Field Alarms	A history of alarms generated by a controller.
Controller	Flex Group Participation	A list of each flex groups and their assignment.
Controller	Incident Trigger Report	A report of Incidents triggers.
Controller	Inventory by Drop	A list of controllers assigned to each drop.
Controller	Inventory by Group	A list of controllers assigned to each group.
Controller	Inventory by IP Address	A list of Controller and their associate IP Address.
Controller	Inventory by Master	A list of Controllers assigned to each Field Master.
Controller	Inventory by Type	A list of Controllers and their associated device type.
Controller	Logins	A history of user logins to a controller.
Controller	Opticom(TM) Report	A history of controllers Opticom(TM) log
Controller	Ped Failure Report	A report of controller ped failure
Controller	Preemption	Preempts activated by the controller.
Controller	Purdue Coordination Diagram	A report of Purdue coordination diagram
Controller	Purdue Detector Fault	A report of Purdue detector fault
Controller	Purdue High Resolution Reports	A report of Purdue High Resolution data log
Controller	Purdue Phase Termination Diagram	A report of Purdue Phase Termination Diagram
Controller	RealTime Congestion Data	A report of Realtime Congestion Data
Controller	Real-Time Status	The current real-time status of controllers.
Controller	Split History	A report of controller Split History
Controller	Temperature Probe Report	A report of controller temperature probe
Controller	TR Master Pattern Change	A report of TR Master Pattern change
Controller	Transit Priority Report	Transit Priority Report
Controller	Weekly Road Tube Detector Output	A report of controller Weekly Road Tube Detector Output

Purdue Phase Termination Diagram

Controller ID: 25

Controller Name: <Select>

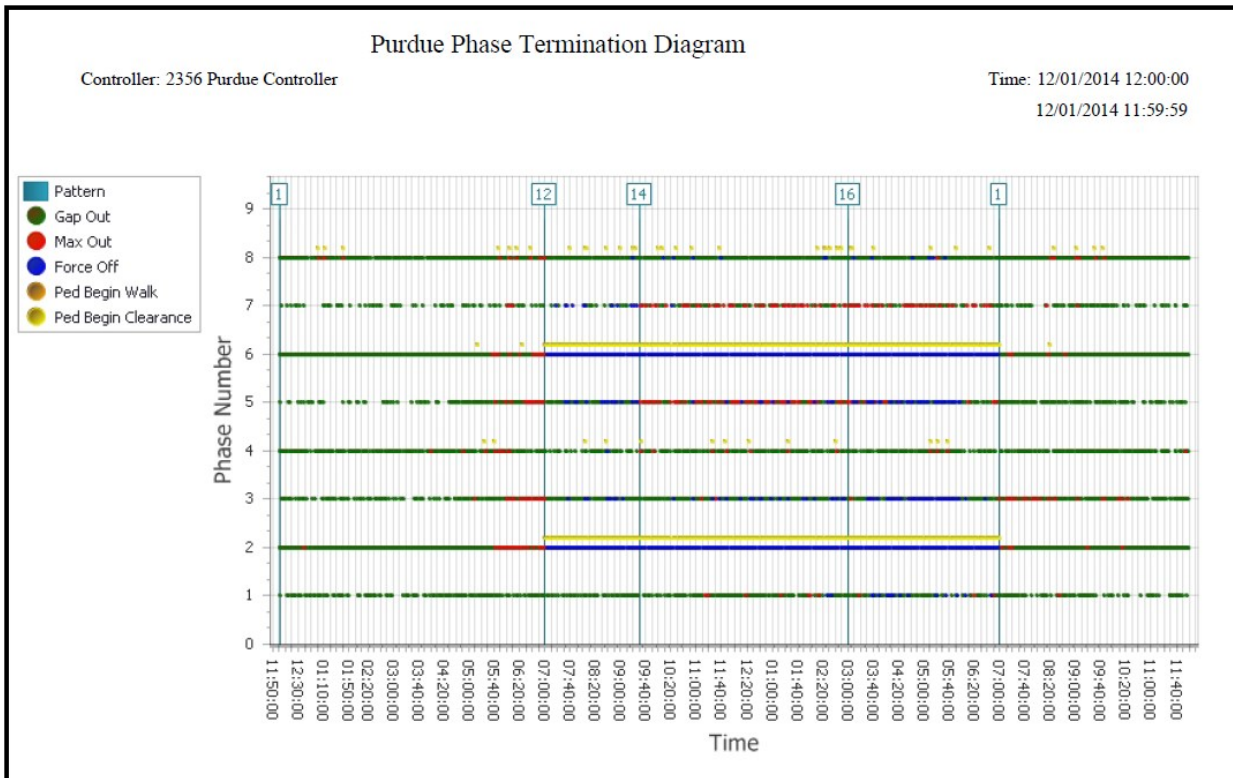
Date: 03/19/2015

Begin Time: 15:00:00

End Time: 18:59:59

Reset All... Run Report

Save Criteria



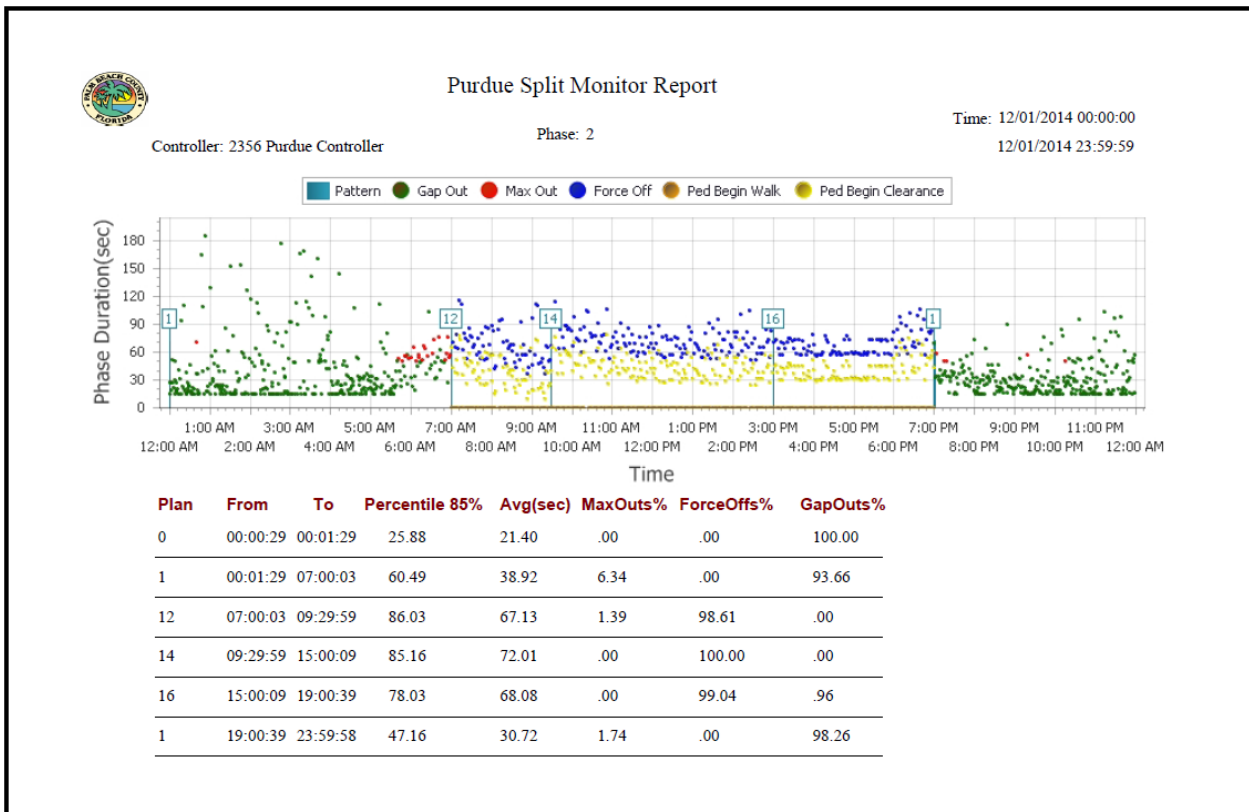


## 7.6.4 Purdue Split Monitor Report

Split Data is displayed in this report. Select the Report and fill out the search criteria.

The screenshot shows the 'Available Reports' window with a table of report categories. The 'Purdue Split Monitor' report is highlighted. A search criteria dialog box is open, allowing the user to filter reports by Controller ID, Controller Name, Date, Begin Time, and End Time. The 'Run Report' button is visible at the bottom of the dialog.

This report will be generated for each phase. Below is report showing the Split Monitor for Phase 2.



## 7.7 Summary of Report Types

The table below provides a summary of available *Reports* available in **ATMS**. (Please note that some reports are only available with added modules or hardware interfaces.).

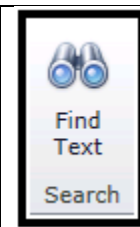
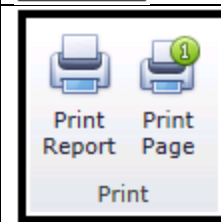
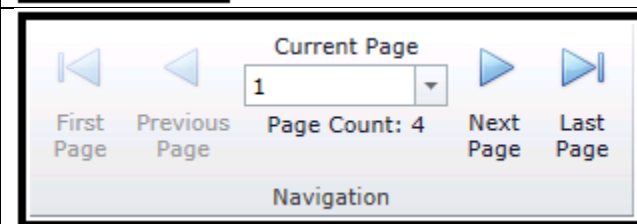
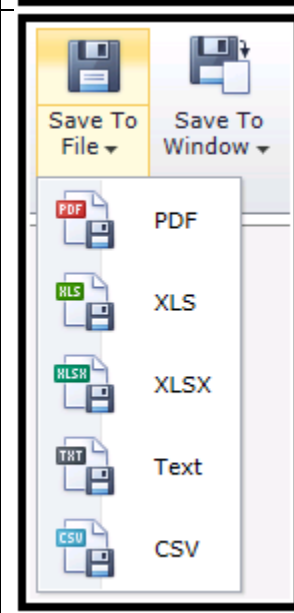
Report Category	Report Name	Description
AVL	AVL Location	A history of vehicle locations based on GPS data..
AVL	AVL Speed	A history of vehicle speeds based on GPS data.
AVL	Detected Speed	A report of vehicle speed as detected in the field.
AVL	Vehicle Classification	A report of vehicle classification.
AVL	Vehicle Travel Time Report	A report of vehicle travel time between fences
AVL	Vehicle Trigger Status Report	A report of vehicle trigger status
AVL	Virtual Priority Report	A report of controller priority requests
CMS	Daktronics CMS Sign Report	A report of the messages downloaded to the CMS
Controller	Compare Controllers Database Configurations	A report to compare controllers database configurations
Controller	Conflict/MMU Report	A report of controllers conflict/MMU upload reports
Controller	Controller Communication Errors	A report of the controller communication errors.
Controller	Controller License Report	A report to show all license modules in the controller
Controller	Controller Pattern	A report of controller pattern changes.
Controller	Controller Pattern Graph	A Graph of controller pattern changes.
Controller	CSV Export	A report to export raw data in CSV format
Controller	Database Comparison	Results of compared databases with the server.
Controller	Detector Failure Report	A report of controller Detector Failures
Controller	Detector Failure Report Threshold	A report of controller Detector Failures using threshold data
Controller	Extension Reports	A history of Ped or Red extension events generated by the controller
Controller	Field Alarms	A history of Alarms and Events generated by a controller.
Controller	Flex Group Participation	A list of each flex groups and their assignment.
Controller	Incident Trigger Report	A report of Incidents triggers.
Controller	Inventory by Drop	A list of controllers assigned to each drop.
Controller	Inventory by Group	A list of controllers assigned to each group.
Controller	Inventory by IP Address	A list of Controller and their associate IP Address.
Controller	Inventory by Master	A list of Controllers assigned to each Field Master.
Controller	Inventory by Type	A list of Controllers and their associated device type.
Controller	Logins	A history of user logins to a controller.
Controller	Opticom(TM) Report	A history of the Opticom (TM) log (Data transferred via the controller)
Controller	Ped Failure Report	A report of controller ped failure
Controller	Preemption	Preempts activated by the controller.
Controller	RealTime Congestion Data	A report of Realtime Congestion Data

Controller	Split History with Max/Gap/Force Off	A report of controller Split History
Controller	Split Timeline History with Termination (M/G/F)	A report of the splits during a period of time.
Controller	Temperature Probe Report	A report of controller temperature probe
Controller	TR Master Pattern Change	A report of TR Master Pattern change
Controller	Transit Priority Report	Transit Priority Report
Controller	Weekly Road Tube Detector Output	A report of controller Weekly Road Tube Detector Output
Database	Timing Sheet - Chronomax	A standardized Chronomax timing sheet layout
Database	Timing sheet - COH	A standardized timing sheet layout organized for controller data entry
Database	Timing Sheet - Condensed Layout	A standardized timing sheet layout with only essential information
Database	Timing Sheet - Douglas County	A standardized timing sheet layout organized for controller data entry
Database	Timing Sheet - Field Operator Layout	A standardized timing sheet layout organized for controller data entry
Database	Timing Sheet - Field Operator Layout 2	A standardized timing sheet layout organized for controller data entry
Database	Timing Sheet - Suffolk	A standardized timing sheet layout organized for controller data entry
Database	Timing Sheet - v76 ATC	A standardized timing sheet layout organized for controller data entry
Device	Ethernet Device Communications Status Report- Multiple Days	A report of a selected Ethernet device's communications status in multiple Days
Device	Ethernet Device Communications Status Report- Single Day	A report of a selected Ethernet device's communications status for a single day
Device	Ethernet Device Communications Summary Graph- Multiple Days	A graphical report of a selected Ethernet device's communications status for a single day
Device	Ethernet Device Communications Summary Graph- Single Day	A graphical report of a selected Ethernet device's communications status in multiple Days
Device	UPS Report	A report of UPS alarms, faults and events
GIS	CAD Incident Report	A report of CAD Accident/Construction Incidents.
GIS	Incident Report	A report of Accident/Construction Incidents.
Parking	Parking Facility Vehicle Accumulation Report	A report of the accumulation for a Parking Facility with total traffic in and out of the garage/lot
Parking	Parking Facility Vehicle Accumulation Report By Gate	A report of the accumulation for a Parking Facility with total traffic in and out of a selected gate
Purdue	Purdue Coordination Diagram	A report of Purdue coordination diagram
Purdue	Purdue Detector Fault	A report of Purdue detector fault
Purdue	Purdue High Resolution Reports	A report of Purdue High Resolution data log
Purdue	Purdue Phase Termination Diagram	A report of Purdue Phase Termination Diagram
Purdue	Purdue Split Monitor	A report of Purdue Split monitor diagram
SynchroGreen	Controller Error Report	A report of Controller Errors
SynchroGreen	Controller Status Change Report	A report of controller Status Change
SynchroGreen	Green Utilization Report	A report of controller green utilization

SynchroGreen	SSM Error Report	A report of SSM Errors
SynchroGreen	SSM Status Change Report	A report of SSM Status Change
SynchroGreen	Target Utilization Report	A report of controller green utilization
Trip Logger	Trip Comparison Report	A report of the Trip Comparison
Users	Audit Log	A report that shows Users database actions
Users	Logins	A history of user logins to the server.
Users	Transactions	A history of user downloads to the controller.
Volume	External Detector Report	External Detector Report
Volume	LOS Average by Day	A report of controllers LOS average by day
Volume	LOS Hourly Day Graph	A report of controller LOS hourly day Graph
Volume	LOS Multi Day Graph	A report of controller LOS Multi day Graph
Volume	Turning Movement Volume/Occupancy Graphic	Graphic of turning movement volume/occupancy per controller per intervals from 5 to 60 minutes.
Volume	Turning Movement Volume/Occupancy Report	Report of turning movement volume/occupancy per controller per intervals from 5 to 60 minutes.
Volume	Volume In/Out per Day	Chart that plots intersection throughput within a 24-hour period
Volume	Volume In/Out per Multiple Days	Chart that plots intersection throughput during a multi-day period
Volume	Volume/Occupancy per Day Graph	Graph of volume/occupancy per day.
Volume	Volume/Occupancy per Lane Graphic	Graphic of volume/occupancy per lane per intervals from 5 to 60 minutes.
Volume	Volume/Occupancy per Lane Report	Report of volume/occupancy per lane per intervals from 5 to 60 minutes.
Volume	Volume/Occupancy per Multiple Days Graph	Graph of volume/occupancy over multiple days.
Volume	Volume/Occupancy Report	Report showing either volume or occupancy per controller per intervals from 5 to 60 minutes.
Volume	Volume/Occupancy Report BTS	Report showing either volume or occupancy per controller from the Berkley Transportation Systems interface per intervals from 5 to 60 minutes.

When a specific report is generated and displayed in the main *Overview* pane, a toolbar will be provided in the upper left corner of the pane. This toolbar will provide icons for the following actions:



	<p>Allows the user to search the report document</p>
	<p>Allows the report to print to a printer(s) that are configured to the computer.</p>
	<p>Allows the user to navigate through each page of the generated report</p>
	<p>Allows the report to be saved as a .Pdf, .XLS, .XLSX, .TXT, or .CSV or Image.</p>

## 8 Troubleshooting

This section consists of possible operational challenges and a recommended approach to dealing with them. If you encounter issues not described in this section, please contact your Cubic | Trafficware representative.

Cubic | Trafficware is not responsible for changes in network and file write settings made after the initial installation that adversely affect system operation. Diagnosis and repair of adverse changes to the system could be billable.

Problem	Solution
My Username and Password does not work.	<p>-Your login Username and Password has changed. Contact the System Administrator.</p> <p>-The Username and Password was not entered in the correct case-sensitive format.</p>
The <b>ATMS</b> Client does not launch.	-The network connection between the Workstation and the Server has been lost.
While operating the Client, one of the following messages appears and the Client shuts down: 1) "Dataset is Null" 2) "XIPC Error: Invalid Target Specification"	-The connection between the Workstation and the Server was lost (temporarily or permanently) while the application was running.
I can "ping" a controller but it will not communicate with <b>ATMS</b> .	<p>-It is not defined as the proper controller type.</p> <p>-It is not assigned to the correct communication "Drop".</p> <p>-The controller is not programmed for the correct "Port" as assigned for that Drop in the Communications Server.</p> <p>-If the controller is a 980/981 series, the host IP must match the Server IP address. When changes are made on the controller IP screen (MM&gt;6&gt;5), "Enable" must be toggled "Off" and "On" to register changes.</p> <p>-Controller is assigned to the "Offline List".</p>
I cannot perform an action because it is "Grayed Out".	-The action cannot be performed because the proper dataset selection has not been performed.
I cannot edit a controller database because the option to "Edit" is "Grayed Out".	-Simultaneously editing databases of different database types cannot be performed. Re-select the controllers to a matched database type and the option to "Edit" will appear.
I cannot get the List View to show all of the controllers in the system again.	-From the Search Engine, select "Reset All", then "Find Now". This will reset the search parameters and restore the entire database for view.
How do I define new Controllers, Cameras, Switches and other items to the system?	-Controllers are defined in the Home Module under "Configuration". All other system components are defined in the Definitions Module under "Devices".

Problem	Solution
I cannot edit a GIS Preset view.	-GIS Presets cannot be edited once created. If they are not correct, they need to be deleted and re-created.
I cannot see the desired layer on the GIS map.	-There are no objects defined to that layer type. -The box for the corresponding GIS layer has not been checked. -View and Control privileges for that layer are disabled for your user account under User Definitions.
I can see the desired GIS layer but cannot control the devices on it.	-The circular button for the corresponding GIS layer has not been checked.
When I am working in the Definitions Module, the Search Engine does not always appear.	-The specific section of the Definitions Module that you are using does not require the Search Engine to find the parameters.
How do I print timing sheets in <b>ATMS</b> ?	-Select the “Print” option while editing a database. The option to select any specific section of the database will appear. - Multiple timing sheet formats are available in the Reports Module. Select each intersection with the Search Engine. -Utilize a custom Excel Timing Sheet through the Excel Export Utility.
How do I turn off the audible alarm?	-The option to turn off the audible alert for alarms is available under User and User Group definitions.
The controller that I want to edit is “Grayed Out”.	-The controller is not assigned to the Jurisdiction that you are a member of.
When I created a new controller, it is “Grayed Out” and not available to use.	-When a controller is created, it does not belong to any Jurisdiction, shielding it from all users until it is assigned. Navigate to Jurisdictions in the Definitions Module and assign it to the appropriate Jurisdictions.
A controller(s) is not showing active communication status on the List or GIS map and it should.	-The controller has not been assigned to a Group or Flex Group that is polling for “Full Status” in the Scheduler.
A controller(s) is showing active communication status (Online or Offline) but it is not assigned for “Full Status”.	-Select “Clear Comm Status” function in the Home Module or “Clear the Comm Buffer” under “Setup” on the Communications Server.
I tried to assign a controller to a second Group and the system will not let me.	-A controller can only belong to one Group. “Flex Groups” are available for additional grouping with no limitations.
After running a report, I cannot get the full report list to appear for running a new report type.	-Use the Report Type Search Engine in the upper left of the Reports Module. Select “Reset All”, then “Find Now”. This will refresh the report lookup parameters and all of the reports will appear.

Problem	Solution
<p>Upload and Download functions appear to be working, but Full Status, Alarms, and Scans do not work.</p>	<ul style="list-style-type: none"> <li>-The Administrator program on the Server has been shut down or has closed.</li> <li>-The controller has not been assigned to a Group or Flex Group that is polling for “Full Status” in the Scheduler.</li> </ul>
<p>When I generate a report, the report template appears but there is no data on the report.</p>	<ul style="list-style-type: none"> <li>-There is no data in the SQL database for the search parameters that you have chosen, such as the date and time for a specific controller. Verify or widen your search parameters.</li> <li>-The Communication Server and/or Administrator was not running at the time the data was available for retrieval.</li> </ul>
<p>Scout definition is not polling.</p>	<p>Make sure the Scout definition is not sharing a drop with other software versions.</p>



# 9 Client Installation Notes

This section outlines the typical installation steps in installing a Client workstation.

## 9.1 Requirements

### 9.1.1 Hardware Requirements

RAM: 8 GB

Hard disk space: at least 5GB free

### 9.1.2 Software Requirements

Windows 10/11

Windows Server 2016/2019/2022

Microsoft .NET 4.8

Microsoft Visual C++ 2013 Redistributable (x86)

Microsoft Visual C++ 2015-19 Redistributable (x86)

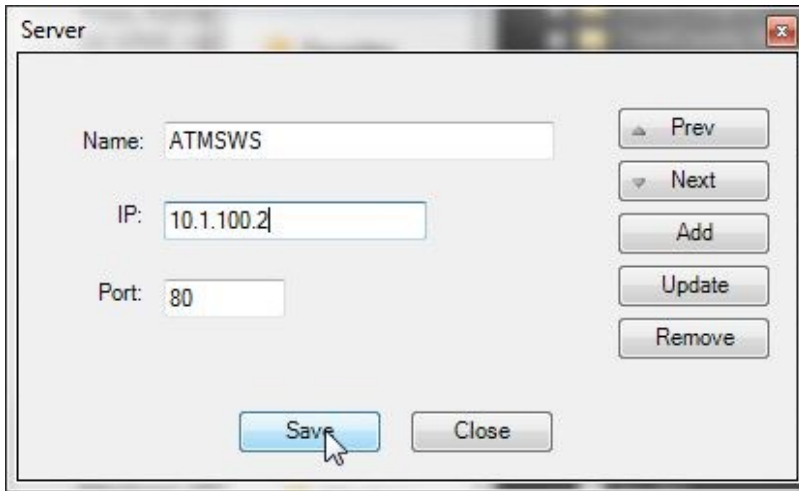
## 9.2 Upgrade installed Client

Restart client

Verify IP address of server at logon prompt by clicking on “Server:”




Enter in a Name, IP Address, and Port (default is 80). Click update to change existing entry or add to add new entry. Click Save.



### 9.3 Fresh Install – Download Installers

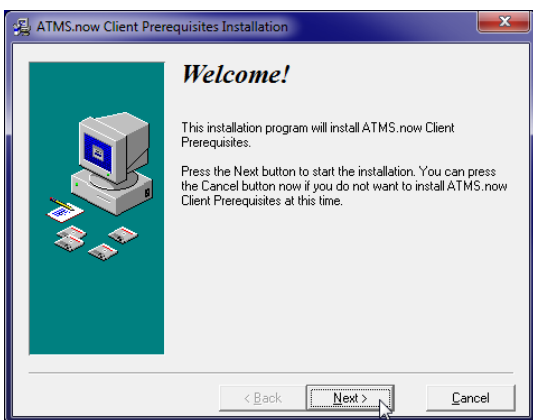
Open up a web browser and enter in the URL bar the ATMS server’s IP address followed by /streetwise2ws/default.aspx

	
ATMS Central Software - Online Resources	
Build	5.16.54.1
Prerequisites Installation	<a href="#">Microsoft .NET 4.8</a> (v4.8 or above required) <a href="#">Or Download from Microsoft</a> <a href="#">ATMS Workstation Prerequisites</a> (required) <a href="#">Microsoft Visual C++ 2013 Redistributable (x86)</a> (required) <a href="#">Or Download from Microsoft</a> <a href="#">Microsoft Visual C++ 2015 Redistributable (x86)</a> (required) <a href="#">Or Download from Microsoft</a> <a href="#">Microsoft Visual C++ 2017 Redistributable (x86)</a> (required) <a href="#">Or Download from Microsoft</a> <a href="#">AXIS Media Control 7.20</a> (when Axis camera used) <a href="#">AXIS Media Control 7.3.10.1</a> <a href="#">TLS 1.2</a> <a href="#">ReadMe</a> <a href="#">Microsoft® OLE DB Driver 18</a> (required) <a href="#">Or Download from Microsoft</a> <a href="#">IISCrypto Tool</a>
Workstation Installation	<a href="#">ATMS Start Setup</a> (ATMS Start installs ATMS Client if new version is available, and then launches ATMS Client. It also supports multiple agencies switching) <a href="#">ATMS Client Setup</a> (install ATMS Client when ATMS Start doesn't work for some reasons)
Utilities	<a href="#">ATMS Diagnostics</a> <a href="#">Mail Diagnostics</a> <a href="#">Refresh ATMSWS Configuration</a> (when dbo.config changes) <a href="#">Reset ATMSWS Log System</a> Nimble connection state: 127.0.0.1:88 <b>connected</b> (it must be connected before any applications starting)
External Device Configurations	<a href="#">BlueTOAD Devices Initialization</a> (click the link above when first time to use BlueTOAD module or new BlueTOAD devices installed)

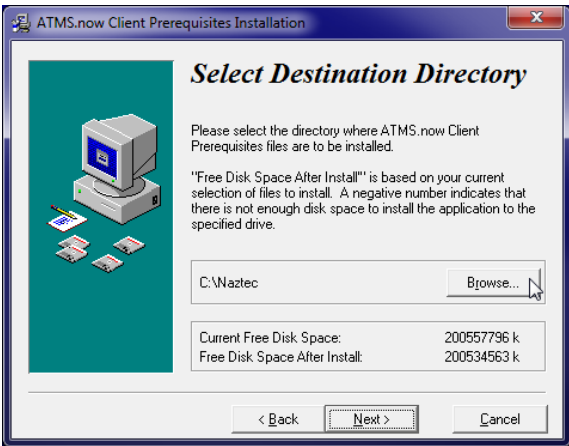
- Download Microsoft .NET 4.8 Runtime
- Download ATMS Workstation Prerequisites
- Download Microsoft Visual C++ 2013 Redistributable (x86)
- Download Microsoft Visual C++ 2015 Redistributable (x86)
- Download Microsoft Visual C++ 2017 Redistributable (x86)
- Configure ATMS to use Transport Layer Security (TLS 1.2) Support Tools (Optional)
- Download ATMS Start Setup
- Download ATMS Client Setup

### 9.3.1 Install Prerequisites

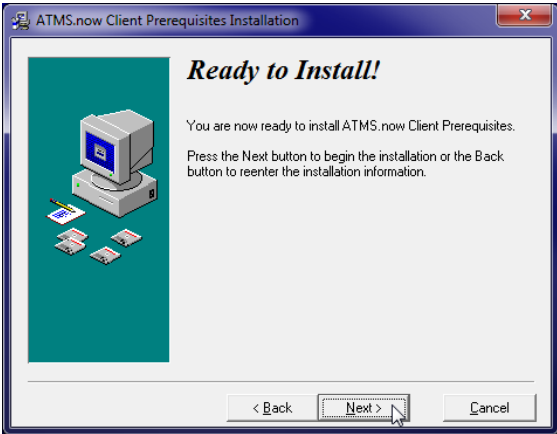
- Run “NDP452-KB2901907-x86-x64-AllOS-ENU.exe” to install .NET Runtime
- Run Microsoft Visual C++ 2013 Redistributable (x86)
- Run Microsoft Visual C++ 2015 Redistributable (x86)
- Run Microsoft Visual C++ 2017 Redistributable (x86)
- Run “ATMSClientPrerequisites.EXE” to install Workstation Prerequisites and click Next



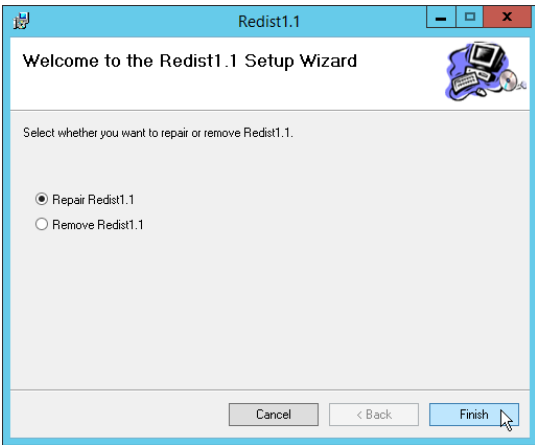
Select Naztec folder path for Destination Directory and click Next



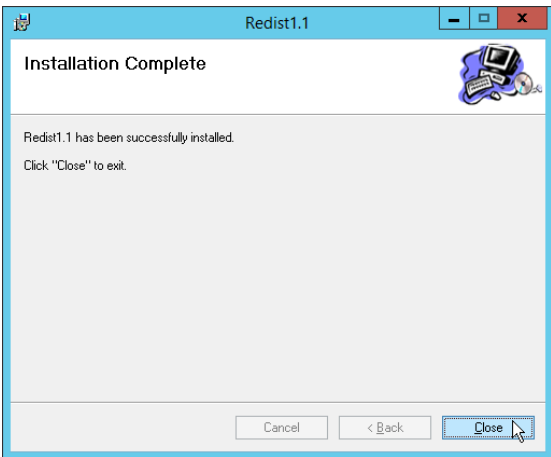
Click Next to install



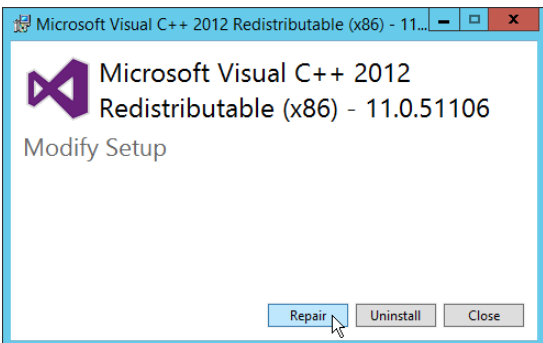
When prompted to install or repair Redistr1.1 click install/repair and click Finish



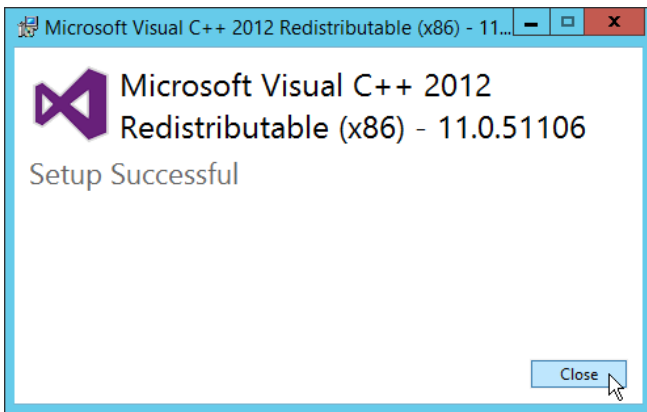
Click Close



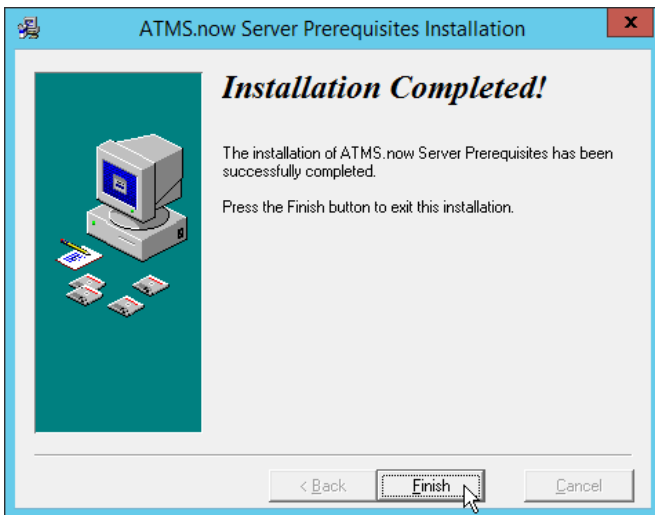
When prompted to install or repair Microsoft Visual C++ click install/repair for all Redistributable selections (2012, 2015,2017. The follow two screens show the 2012 Visual C++ Redistributable install:



Click Close

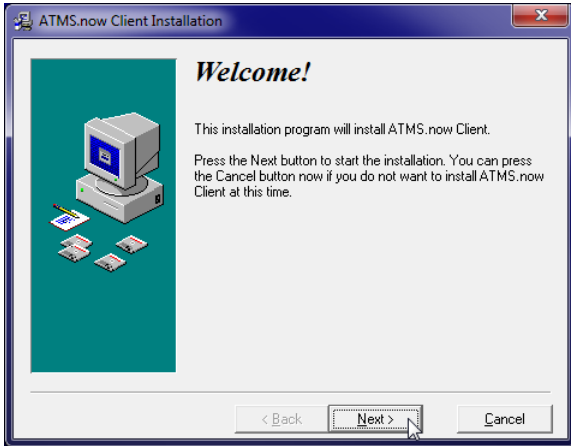


Click Finish

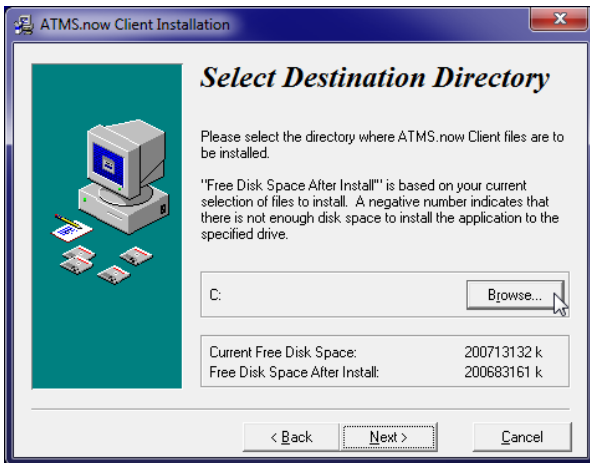


## 9.3.2 Install Client

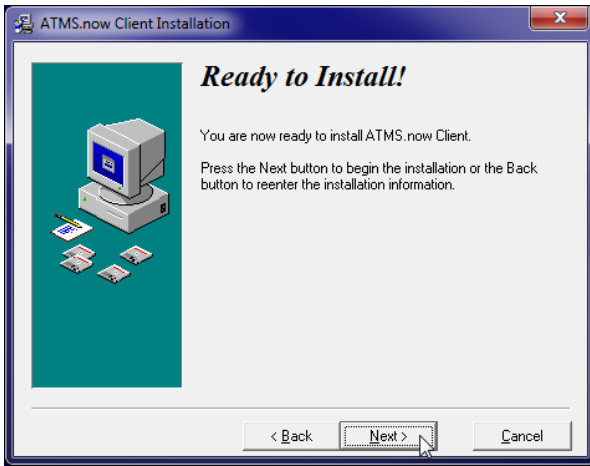
Run ATMSClient.exe and click Next



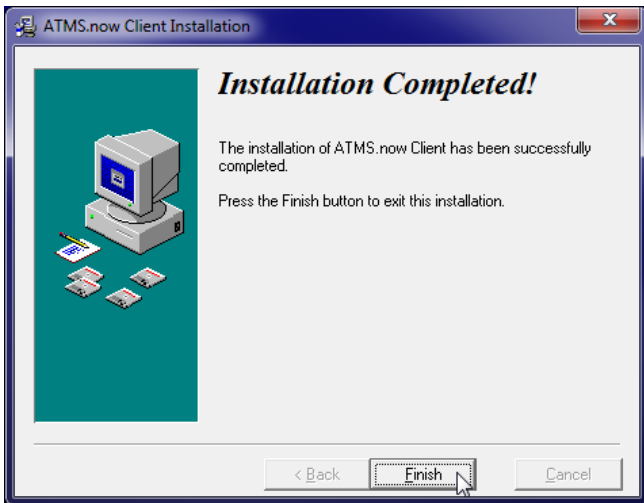
Select installation directory and click Next



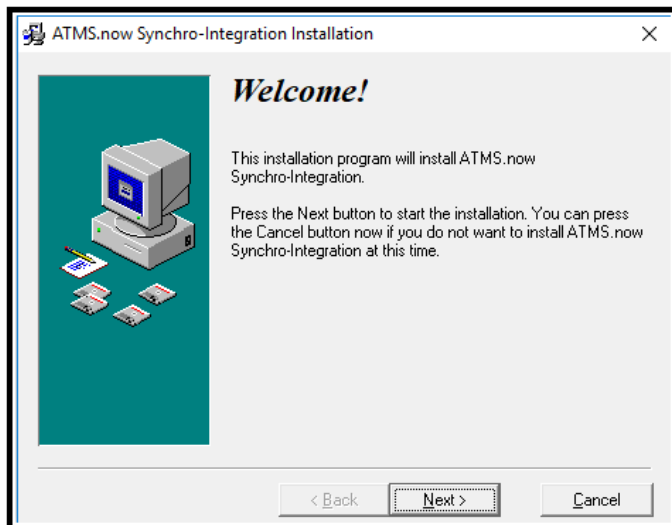
Click Next to Install



Click Finish

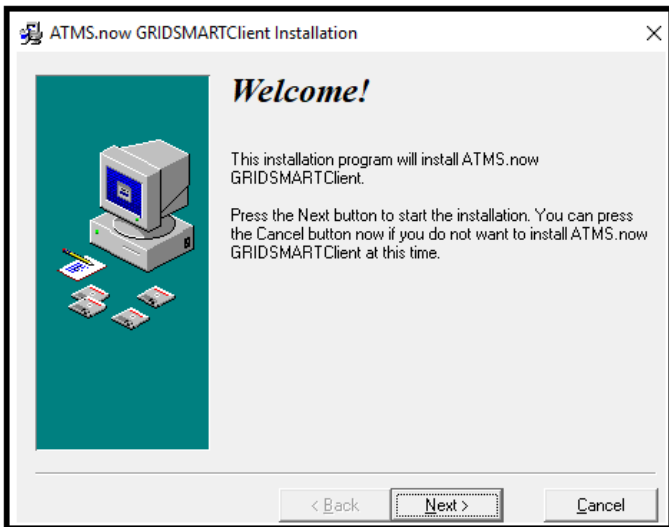
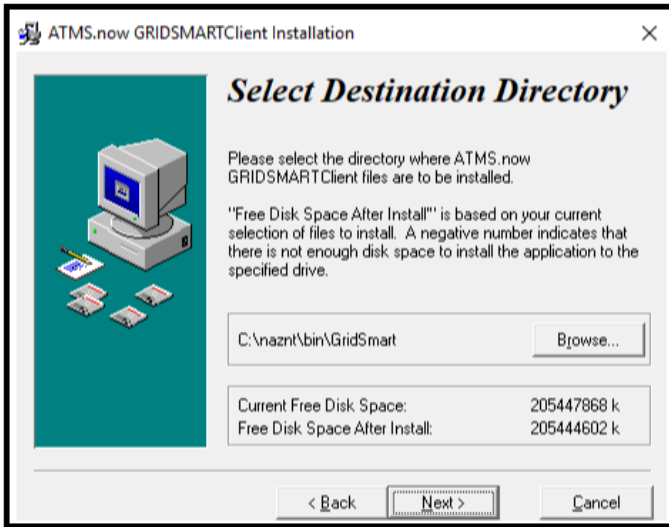
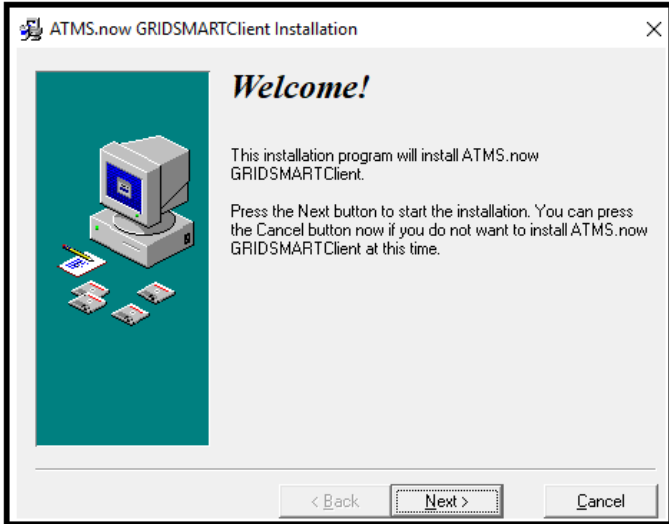


Next the Synchro Integration program will be installed. The following screen will be shown.



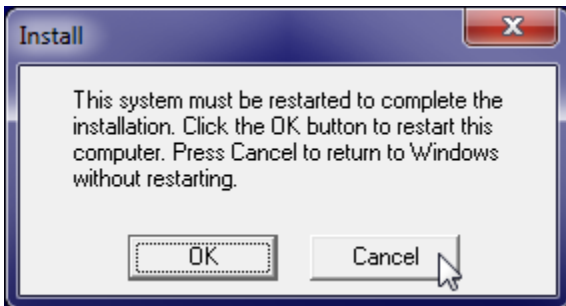


Next the Gridsmart program will be installed. The following screens will be shown:

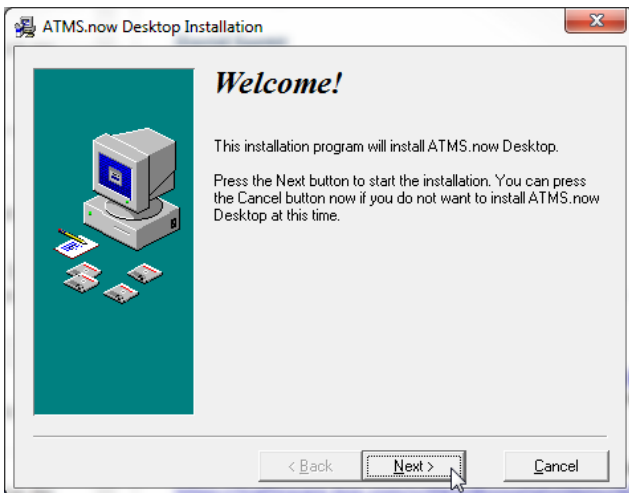




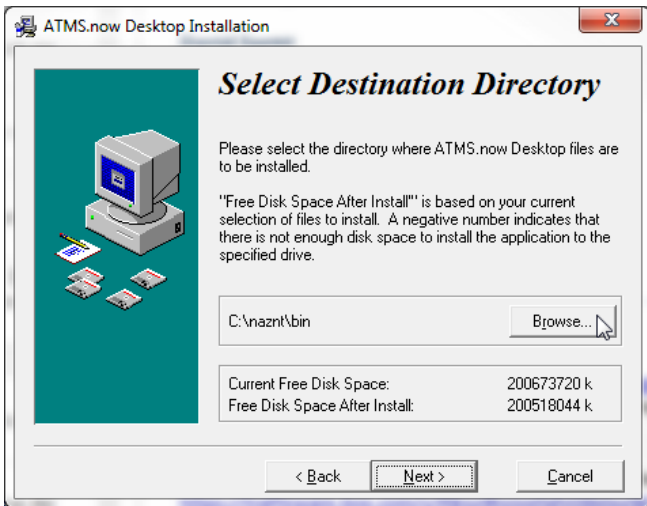
Click Next to install and Finish to complete the installation. Then click Cancel when prompted to restart



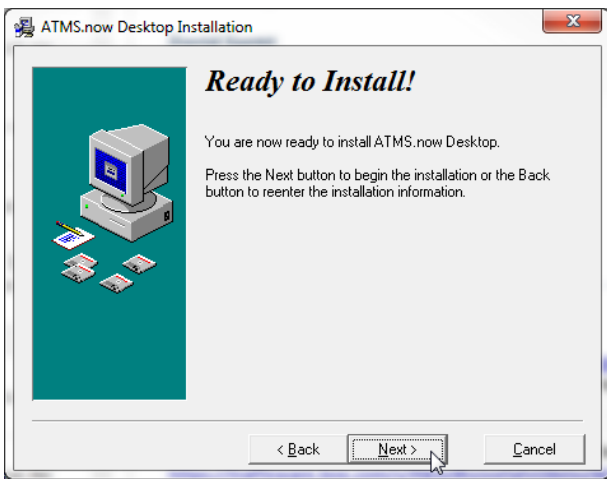
Execute ATMS.Streetwise2App.EXE and click Next



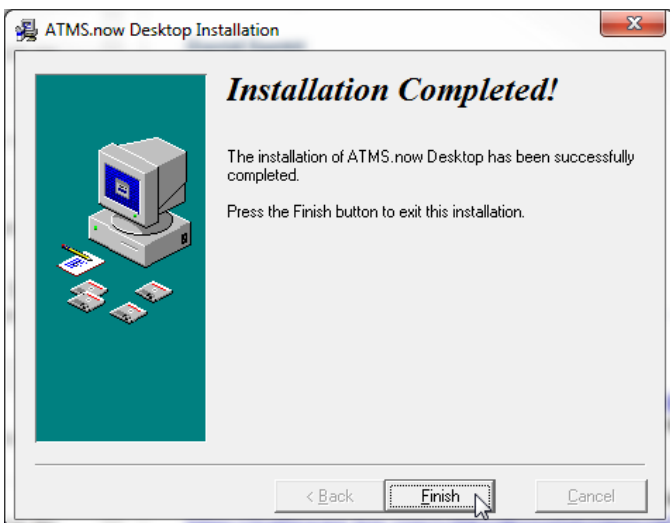
Select correct path of naznt/bin folder and click Next



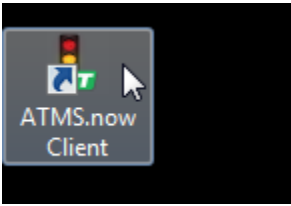
Click Next to Install



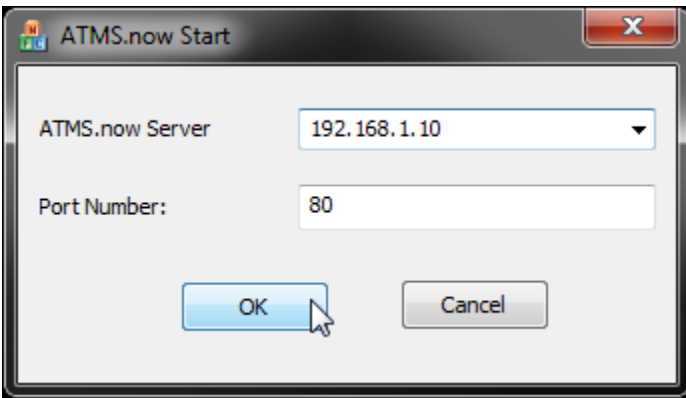
Click Finish



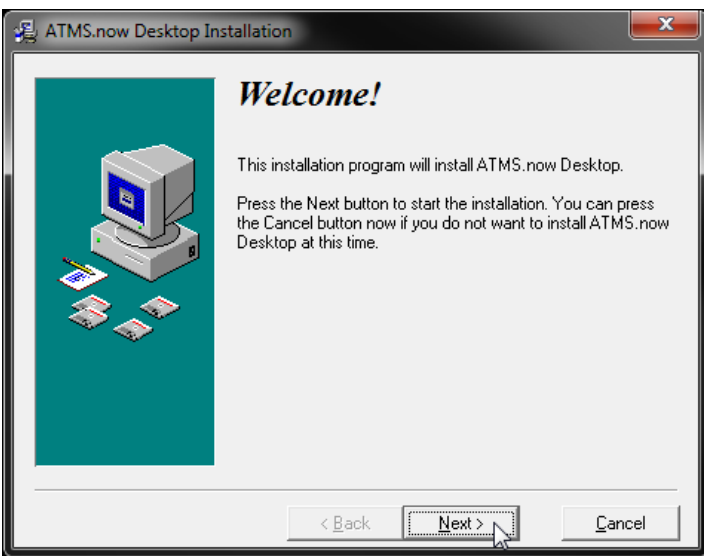
Run ATMS Client by double clicking icon on desktop



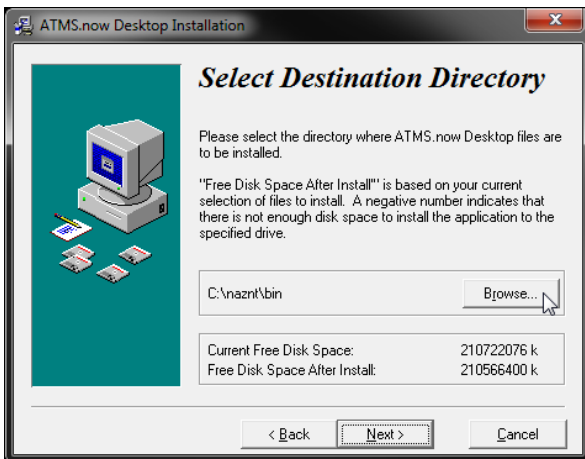
Enter in IP and Port number of ATMS server (*Steps 14-18 do not apply to upgrades*)



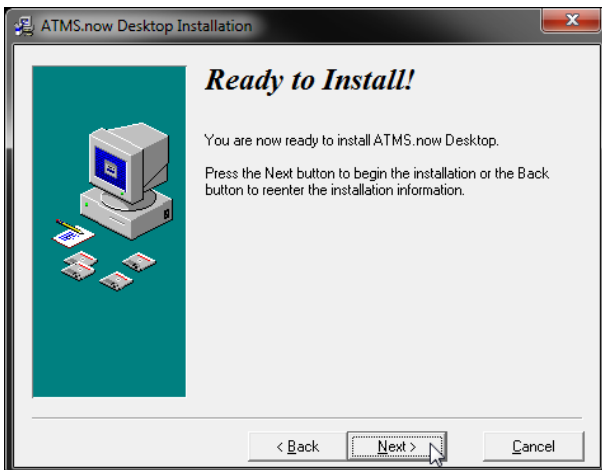
Click Next



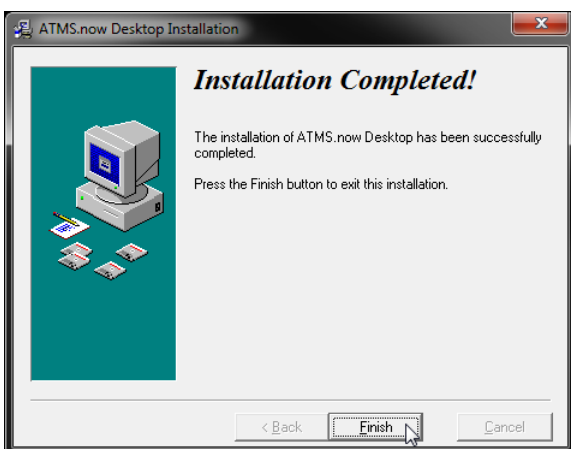
Select correct path of naznt/bin folder and click Next



Click Next to Install



Click Finish



### PROBLEM:

Client won't start after login.

Possible Errors:

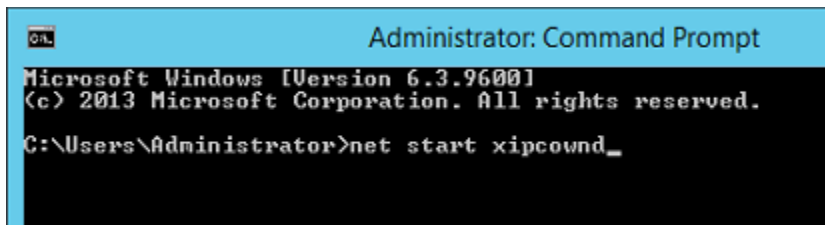
Error: System.NullReferenceException: Object reference not set to an instance of an object.

### SOLUTION:

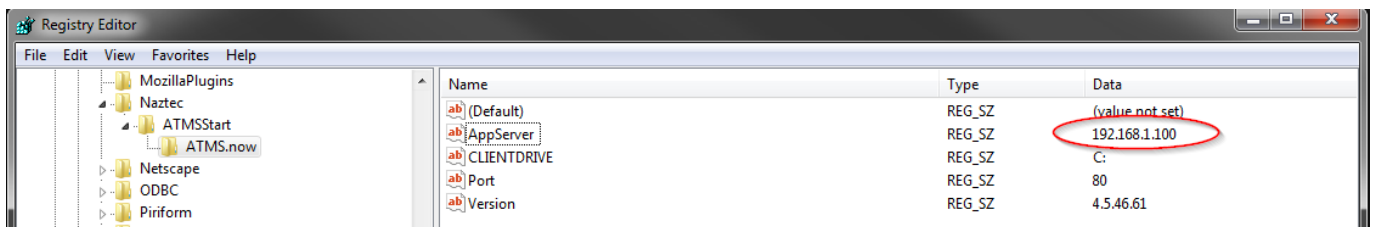
**\*\*Before launching ATMS client after performing steps make sure all streetwise processes are killed in task manager.**

Troubleshooting steps on client workstation machine:

1. Verify XIPC service is started in Windows Services. Open command prompt in admin mode and run `>net start xipcownd`



2. Verify server IP address in [HKEY\_CURRENT\_USER\Software\Naztec\ATMSStart\ATMS]



3. Verify server IP address in “\naznt\bin\StreetWise2Setup.exe.cfg” (v4.5.46.50 and up) on client side

```
StreetWise2WPF.exe.cfg -
File Edit Format View Help
/*****
 *
 *   ATMS.Now user configuration file for StreetWise2WPF
 *
 *****/
StreetWise2.Web.Host = "192.168.1.100"
StreetWise2.Web.Port = 80;

Logger.Outputfile = @"c:\log\StreetWise2WPF.log";
Logger.Options = "ERROR,PROFILE,SCAN";
Logger.Enabled = true;
Logger.Stacktrace = true;
```

4. Make sure all StreetWise processes are killed in task manager. Then startup the client.

5. Verify Ports below are open on ATMS server and not blocked by a firewall.

xipcetc 4000/udp

xipcetc 4000/tcp

xipeserv 4001/tcp

### PROBLEM:

Unable to download install files. Can't reach Streetwise website.

### SOLUTION:

The client install files are located on the ATMS server under \Naztec\ATMSWS\Setup\

Install files listed below:

1. ndp48-x86-x64-allos-enu.exe
2. vcredist\_x86.exe (2013 Visual C++ Run-time)
3. vc\_redist.x86.exe (2015-2019 Visual C++ Run-time)
4. ATMSClientPrerequisites.EXE
5. ATMS.nowClient.exe
6. ATMS.Streetwise2App.EXE

# 10 Glossary

This section consists of an explanation of commonly used terms within this manual regarding the use of **ATMS**:

Term	Definition
Administrator or “Admin”	Software application that controls the priority of inbound and outbound field communications. It also executes all Scheduler programming for the system. This program also resides on the main <b>ATMS</b> server hardware.
Alarm	A field Event that has occurred in the controller and has been programmed to be reported immediately to the <b>ATMS</b> system. They can be set to notify users.
Alarm History	Consists of the last 100 incoming alarms to the system. This tab is populated each time a login occurs and is updated as new alarms are received. Shown as a tab in the main user interface.
Archive Database	Trim an older portion of the database to reduce the file size and store it for later retrieval.
Backup Database	Create a copy to store in case of server failure.
BBS	Battery Back-up System
CCTV	Closed Circuit TV (Video)
Central Master	A “virtual” controller within <b>ATMS</b> that performs the same management and control tasks as an on-street Master Controller. (Sold Separately)
Client	The main software interface on each workstation.
CMS	Changeable Message Sign
Communications Server or “Comm Server”	Software application that resides on the main <b>ATMS</b> server. It controls the utilization of all inbound and outbound communications to the controllers and what method each uses such as FSK, Dial-Up, etc.
Definitions Module	Section of the user interface where all of the setup is done with the exception of the controllers.
Device	Any <b>ATMS</b> equipment that is not a Controller or Chronomax.
Event	Also known as an “Incident”.
Field Chooser	Acts as a view filter to hide/show the desired data to the user.
Flex Group	A user-defined set of controllers that have no limitations to how many or which controllers. A controller can belong to a limitless number of Flex Groups to serve a multitude of tasks.



Term	Definition
Full Status	An automated polling task in the Scheduler program that is executed once-per-second by the Administrator program. Full Status collects all dynamic field data including status and alarms, in the assigned controller(s).
GIS	Geographical Interface System. Operates as the base mapping system for <b>ATMS</b> and establishes a graphical reference point for ATMS devices on the interface.
GIS Preset	A pre-determined zoom level in the GIS that is set by the user for repetitive use.
Group	A user-defined set of controllers. A controller can belong to only one group in the system. For advanced applications use Flex Grouping.
GUI	Graphical User Interface
Home Module	Section of the user interface where the system control and monitoring is performed. Controller definition and setup is also done in the Home Module.
Hover Balloon	Also known as a “Tool-Tip” in Microsoft programs. When the mouse is positioned over an object, its data appears in a dynamic window.
Instant Report	Gives the ability to instantly perform an activity that is usually programmed in the Scheduler for a specific time.
Jurisdiction	A named department or agency that operates within specific control authorization.
Local Controller	Controller that operates an intersection at the lowest level of control. It can run independently as programmed, or accept override commands from a Master controller or <b>ATMS</b> .
LOS	Level of Service ( <b>ATMS</b> uses Circular 212)
Master Controller	Controller that can operate an intersection, as well as issue commands to assigned Local Controller such as time, pattern, etc.
Navigator Pane	Located on the Left Side of each module of <b>ATMS</b> . Consists of the control Actions, Search Engine, and Module selection.
Offline Controller	A controller that is kept outside of the online system so it doesn't produce communication failures to the system.
Permanent Database	The official record copy of the database that is or should be running in the controller on the street.
PTZ Camera	Pan/Tilt/Zoom Camera
Recent Alarms	Alarms that have been received since login. Shown as a tab in the main user interface.
Replicate Database	Create a copy of selected sections of the database for Export.

Term	Definition
Reports Module	Section of the user interface where reports can be generated from the systems SQL Database.
Scan Screen	An informational graphic screen that illustrates the status of the incoming intersection data.
School Zone Manual Flash	An override command for the TBC operation of a Cubic   Trafficware Chronomax Time Clock.
Search Engine	Software application in the main user interface that provides quick data filtering.
Special Databases	<b>ATMS</b> provides 5 full databases for special use. These are named as Special 1-5.
SQL	Microsoft “Structured Query Language” is a relational model database server format that <b>ATMS</b> utilizes.
Standard Database	The working copy of the database that is edited before downloading.
System Administrator	The person(s) in charge of setting the level of access and control for all users in the system.
Upload Database	The last database copy that was uploaded from the field.
Verify Database	A function of <b>ATMS</b> that compares the newly uploaded database to the database that is supposed to be in the field. This acts to protect from database contamination or unauthorized changes during downloads.
VU COM	Cubic   Trafficware video communication card

**THANK YOU  
FOR YOUR BUSINESS!**

