BELL CANADA

TELEPOD

USER MANUAL

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This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The vehicle-mount antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.
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2 INTRODUCTION

2.1 PRODUCT RELEASE OVERVIEW

Telematics is a fairly new technology that combines computers with telecommunications. In recent years, telematics has primarily been used in conveying vehicle information through various telecommunication mediums. This information can be manipulated into different formats in order to support a number of different purposes and uses.

TelePod was developed in-house by Bell Canada Fleet Services and was originally named the PICCI (Personal In Car Computer Interface). The TelePod is essentially a miniature computer. It has all the physical characteristics of a computer, for example, COM ports, USB ports, Ethernet port, etc. This device is essentially a hub to a wealth of information and data, which can be passed through several mediums such as 1xRTT, satellite, and Ethernet.

This release of the product will include not only the hardware (ie. TelePod), but the applications located on the TelePod which will collect the vehicle information and transport it to the Bell Fleet application system. Fleet managers will find this product useful in the field to gather performance reports and provide more efficient methods of dispatching work orders.

The initial intent of this release is to provide real-time dispatch for technicians, location based services and vehicle performance statistics.

2.2 OVERVIEW

The TelePod user interface is currently being modified. This document is a living document and will be revised as soon as the new user interface has been completed. There are a number of steps that require manual input of data directly into the database in order for the Telematics application to see it.

The current window to data is through Autovision, Bell Canada Fleet Services' vehicle fleet management system. There are two major functions that will be discussed in this document. The first is **Scheduling** and second, **Report Search**. These two functions form the major end-user applications for initial release of the system, and hence are documented here for public instruction.

2.3 ASSUMPTIONS

The assumptions made are for the current product for telematics. In order for the Telematics Server to see the vehicle, there must be a vehicle ID (that is valid) associated to a vehicle in Autovision. Every vehicle ID must have a unique ID which is generated by the SQL Server. This ID is used to identify the vehicle once it registers with the Telematics Server.

Under Autovision, there is a sub-section named Telematics which enables users to view scheduling information and reports. The user is assumed to have this access. Access is granted the Administrator of Autovision (ie. Superuser).

3 DEVICE INSTALLATION

3.1 MOUNTING

Mounting of the device should be in a location at least 20 cm from the driver and passengers. Suggest mounting locations include:

- Vehicle cab wall divider
- Trunk compartment

Remember to check for:

- Routing and length of cabling to fuse panel, OBD connector, dashboard for GPS receiver.
- Exposure to elements such as salt, water and dirt from floor/doors

3.2 POWER AND IGNITION INPUT

Identify two fuses: One that is constant 12V irrespective of key position and a second that is powered only on accessory position.

Run the TelePod power cable from the mounting location to the fuse panel.

Connect:

- Red wire to constant 12V fuse leg
- Orange wire to accessory switched 12V fuse leg
- Black wire to vehicle grounding point

Remember to check for ignition and constant power using a voltmeter to ground. Don't forget to cycle through Off, Ignition and Accessory to ensure the system is supplying voltages at the correct key positions!

3.3 GPS RECEIVER

The GPS Receiver is a separate isolated device from the TelePod and connects via Serial Port.

Connect:

- DB9 serial connector to the TelePod COM Port 2
- Red wire to accessory switched 12V fuse leg
- Black wire to vehicle grounding point.

Place the receiver on the dash with a clear view to the sky. A 120 degree horizontal clearance is required.

3.4 OBD II Adapter Cable

The OBD cable attaches to the vehicle engine computer. Run the OBD II cable from the OBD II serial port of the TelePod to the vehicle diagnostic connector, usually below the dash. You may wish to relocate the connector if the cable gets in the way of driver ingress and egress.

3.5 Glass Mount Cellular Antenna

The APDM928S glass antenna is affixed to both sides of the windshield. Attach it in a place that does not obstruct the driver's view of the road, such as a top corner, and route the cable to the TelePod mounting location.

The antenna attaches with a SMA screw mount connector.

4 Software Scheduling

4.1 Introduction

The scheduling function allows users to schedule events. For example, if users want to find out the vehicle speed every hour, he/she would schedule an event of "vehicle speed" to fire every hour.

There are a number of events which can be selected. They are:

1. Engine Speed
2. Vehicle Speed
3. Throttle Position
4. Odometer
5. Idle Time
6. Idle Time Counter
7. Engine Temperature
8. DTC Codes $3 (Engine)
9. DTC Code $7 (Body)
10. MIL (Maintenance Indicator Light) Light
11. GPS (Ping location)

These can be scheduled in intervals of:

1. Immediately
2. 1 minutes
3. 1 Hour
4. Daily
5. Weekly
6. Monthly

Future versions of this system will further restrict the interval based on customer agreements, such as five minute intervals for the majority of users.

Schedules can be created at a number of different levels, depending on customer needs. The basic schedule is called an Enterprise Schedule, and defines a baseline set of events to report on for a given customer. Additional events are overlaid onto the Enterprise Schedule for individual TelePods that a customer owns.

Additional events at the individual TelePod level may be for diagnostics of a intermittent problem on one vehicle or investigation of suspicious activity.

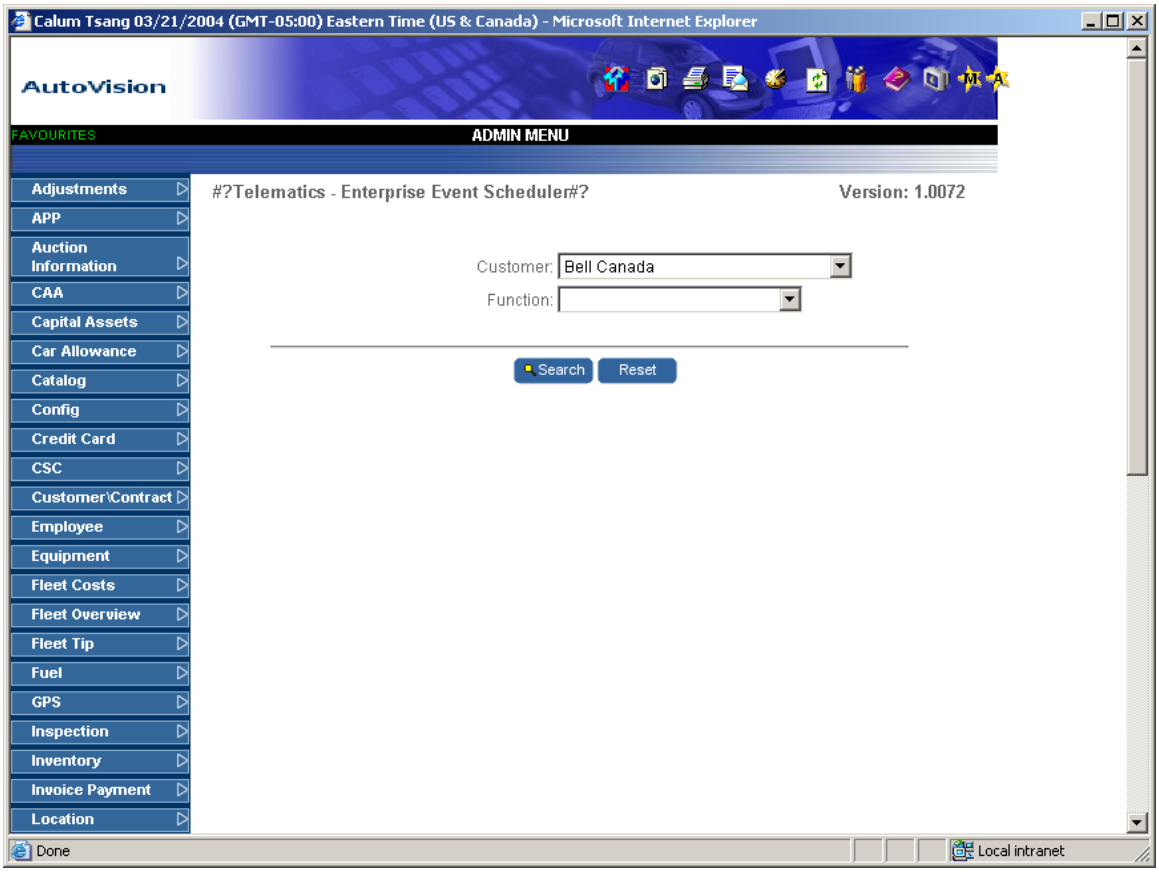
4.2 USAGE

The user must first log into an account on AutoVision with the appropriate security permissions set for Telematics screen usage.

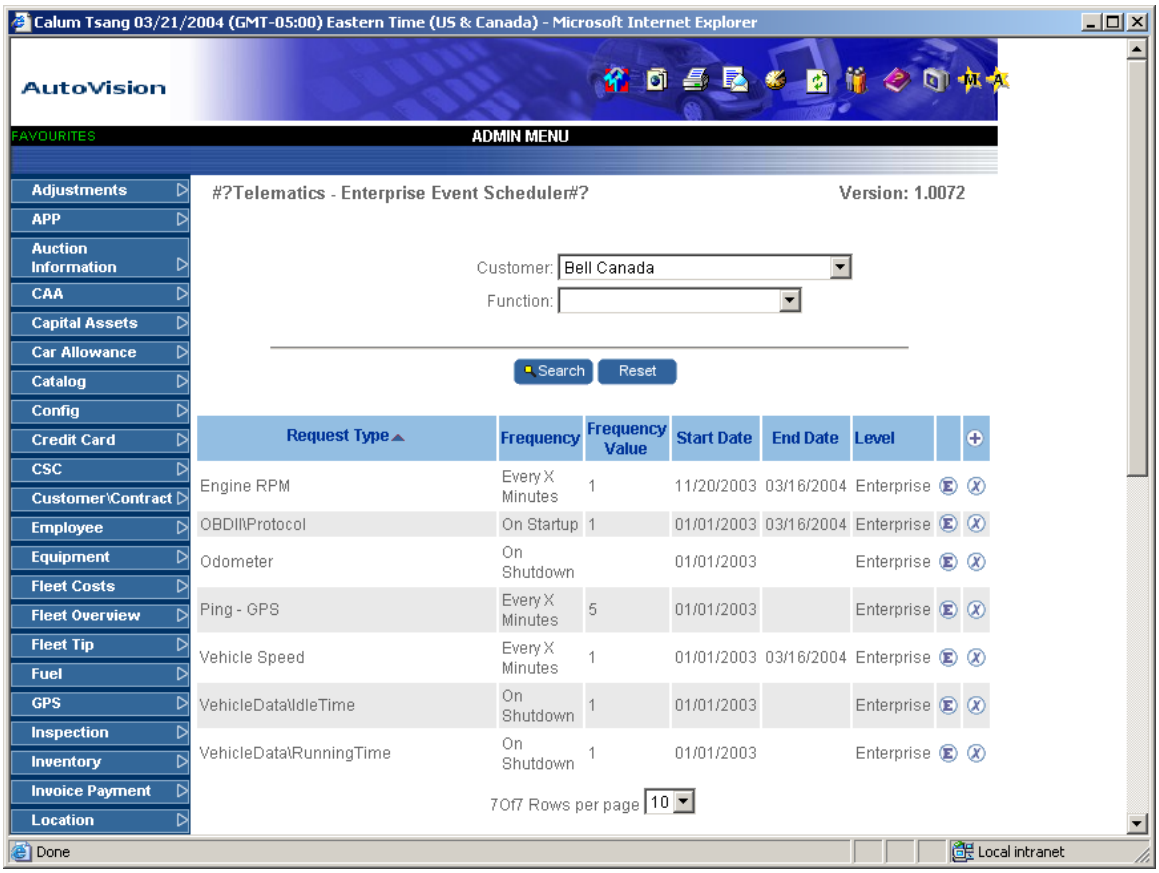
4.2.1 VIEW SCHEDULED EVENTS (ENTERPRISE)

To view the scheduled events for a given customer:

1. Click on the **Telematics** menu entry on the left side of the AutoVision window. A number of subentries will appear.
2. Select **Enterprise Schedule** and a screen should appear similar to the one below:



3. Select a Customer and click **Search**. A display of events for the requested customer will appear like this:



4. The user has several options.
    a. The user can delete a scheduled event by selecting the **X** button.
    b. The user can edit a scheduled event by selecting the **E** button.
    c. The user can add another event by inputting information and selecting the **+** button.
    d. The user can go back to previous screen to select another Customer by clicking the **Reset** button.

4.2.2 DELETE SCHEDULED EVENT (ENTERPRISE)

While viewing an Enterprise Schedule:

1. Click on the **X** button to the right of the desired event.
2. Confirm the deletion.

The system will delete the event from the schedule. The next time each TelePod contacts the server, it will resynchronize their internal schedules based on this change.

4.2.3 EDIT SCHEDULED EVENT (ENTERPRISE)

While viewing an Enterprise Schedule:

1. Click on the **E** button to the right of the desired event. A new screen will appear for that event:

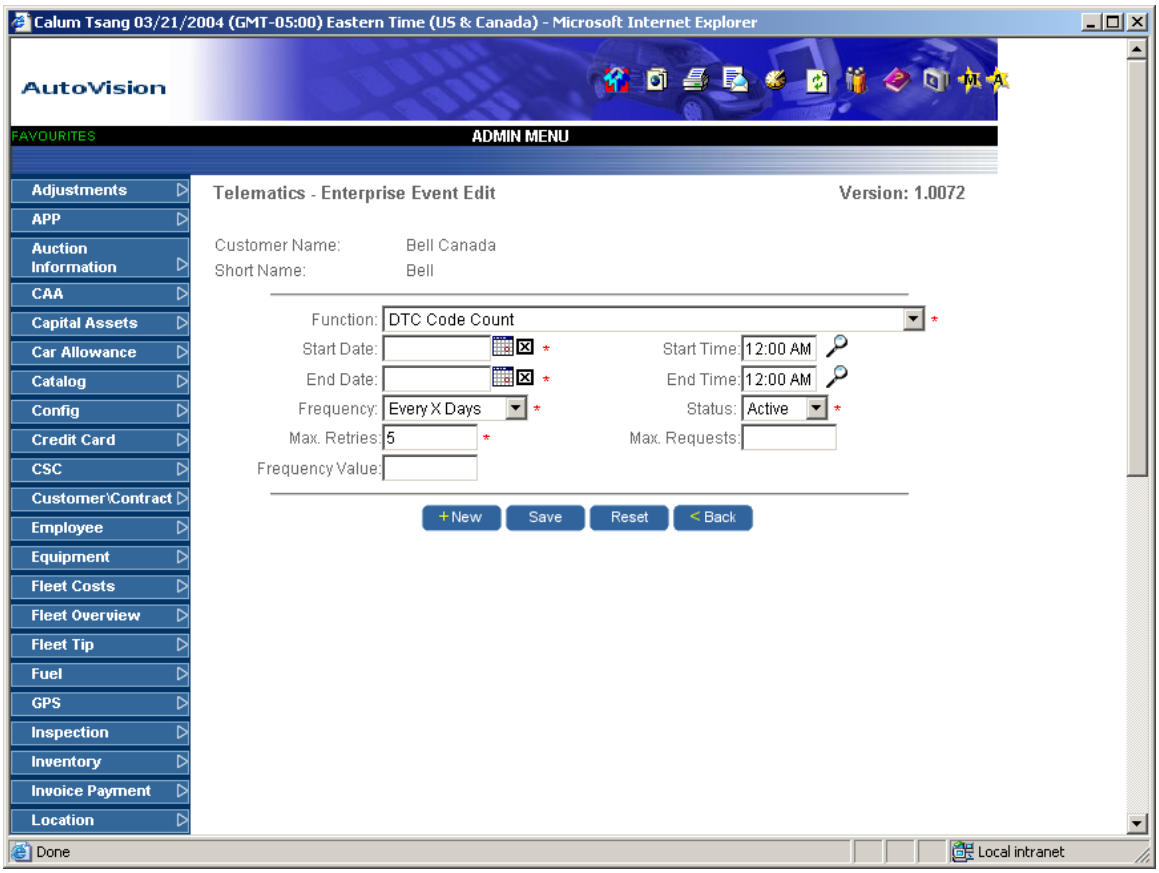
2. Select the **Function** required. This is the type of event requested from the TelePod and includes engine functions, GPS location and diagnostic requests.
3. Pick the Start **Date/Time, End Date/Time** for the beginning and length of this event. Clicking the calendar icon will pop a small selection window open for you to make a choice.
4. Pick a **Frequency** for the events to occur. This can be based on driver events (Ignition: Startup, Shutdown) or on a time (Every X Minutes, Every Week etc).
5. Set the **Status** to Active for the event to be processed.
6. Enter the maximum number of retries in **Max. Retries** for the event to be attempted. This is a throttling safeguard to discourage useless data to be transmitted if the subsystem is unavailable.
7. Click **Save**.

The changed event entry will be updated to reflect your modifications.

4.2.4 ADD SCHEDULED EVENT (ENTERPRISE)

While viewing an Enterprise Schedule:

1. Click on the **+** button at the top right of the event listing. A new screen will appear for that event:



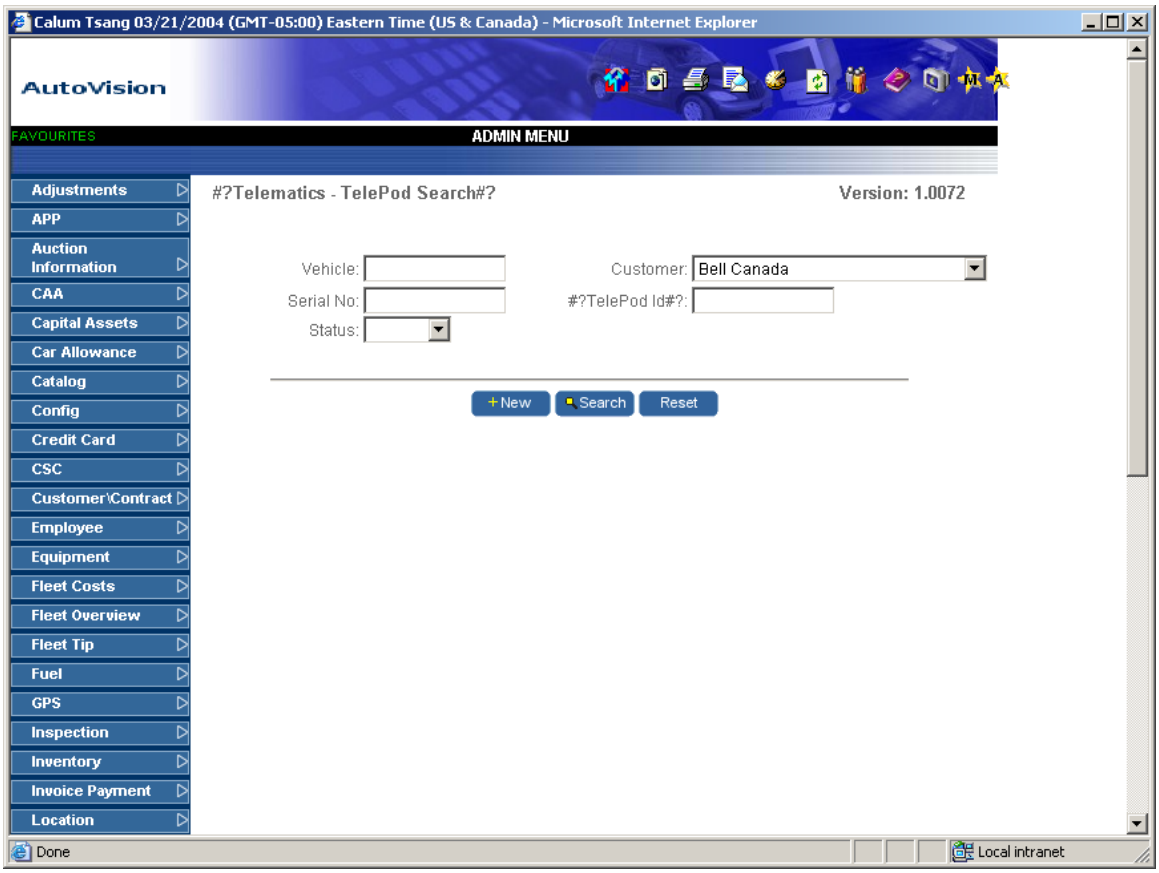
2. Select the **Function** required. This is the type of event requested from the TelePod and includes engine functions, GPS location and diagnostic requests.
3. Pick the Start **Date/Time, End Date/Time** for the beginning and length of this event. Clicking the calendar icon will pop a small selection window open for you to make a choice.
4. Pick a **Frequency** for the events to occur. This can be based on driver events (Ignition: Startup, Shutdown) or on a time (Every X Minutes, Every Week etc).
5. Set the **Status** to Active for the event to be processed.
6. Enter the maximum number of retries in **Max. Retries** for the event to be attempted. This is a throttling safeguard to discourage useless data to be transmitted if the subsystem is unavailable.
7. Click **Save**.

The event schedule will be updated to reflect your addition.

4.2.5 VIEW SCHEDULED EVENTS (INDIVIDUAL)

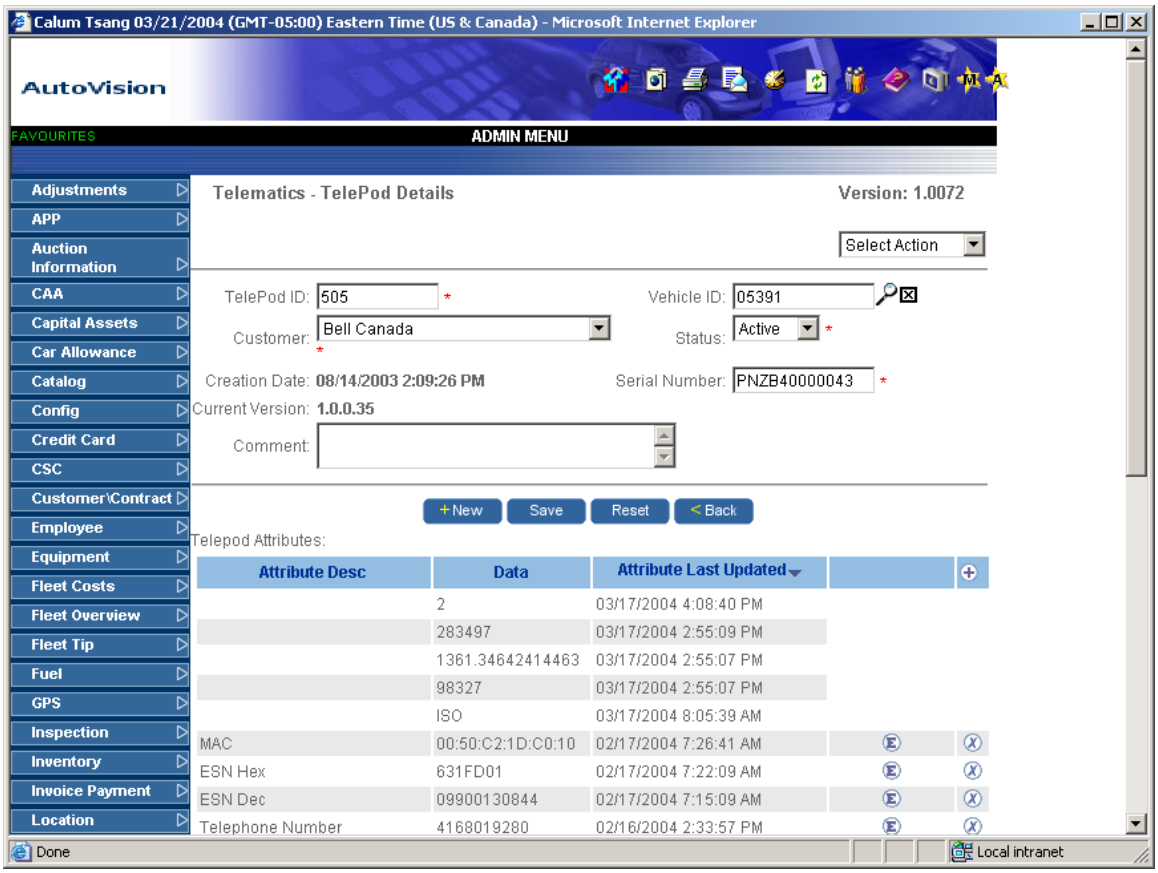
To view the scheduled events for a given TelePod:

1. Click on the **Telematics** menu entry on the left side of the AutoVision window. A number of subentries will appear.
2. Select **TelePod** and a screen should appear similar to the one below:

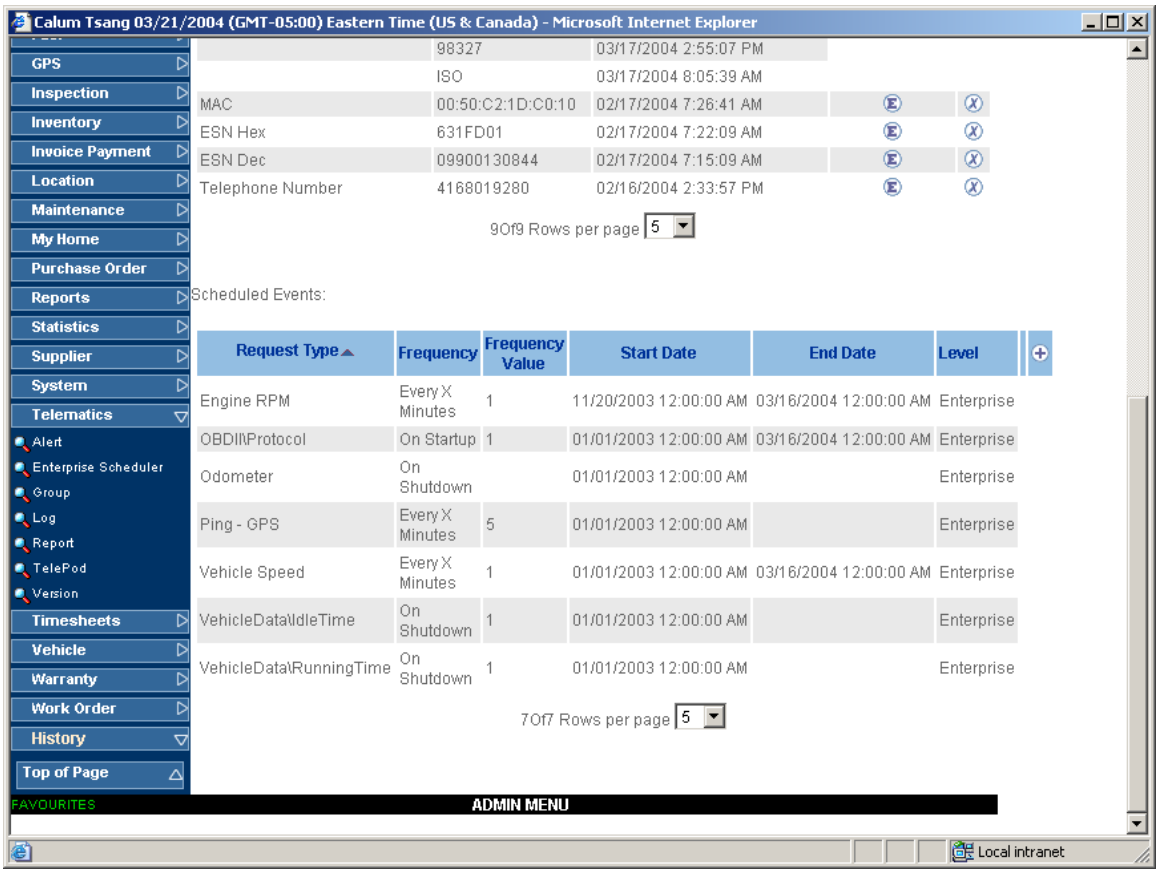


3. Enter in identifying characteristics of the individual TelePod you wish to modify: **Vehicle ID** describes the AutoVision Fleet Vehicle number that the TelePod is assigned to, **Serial Number** describes the manufacturing serial code stamped on the bottom of the hardware device, and **TelePod ID** is the unique device identifier for the Pod itself. The **Customer** filter only appears for users configured with multiple companies and fleets to administer, most customers will only have their own company to search. Once finished, click **Search**. A list of matching TelePod appear:

4. Choose an individual TelePod by clicking on its **Serial Number** on the right. A new screen, TelePod Details will appear:



5. Scroll down the screen and the Schedule Events for this TelePod will appear. They include the overarching Enterprise Schedule set for the customer this TelePod belongs to:



6. With this screen:

    a. The user can delete a scheduled event by selecting the **X** button.
    b. The user can edit a scheduled event by selecting the **E** button.
    c. The user can add another event by inputting information and selecting the **+** button.
    d. The user can go back to previous screen to select another Customer by clicking the **Back** button.

Note, Enterprise Schedule events cannot be deleted from an individual TelePod. Similarly, Enterprise events cannot be changed either. Only those events added to the given Pod can be modified or discarded from this screen.

4.2.6 DELETE SCHEDULED EVENT (INDIVIDUAL)

While viewing an individual schedule on the TelePod Details screen:

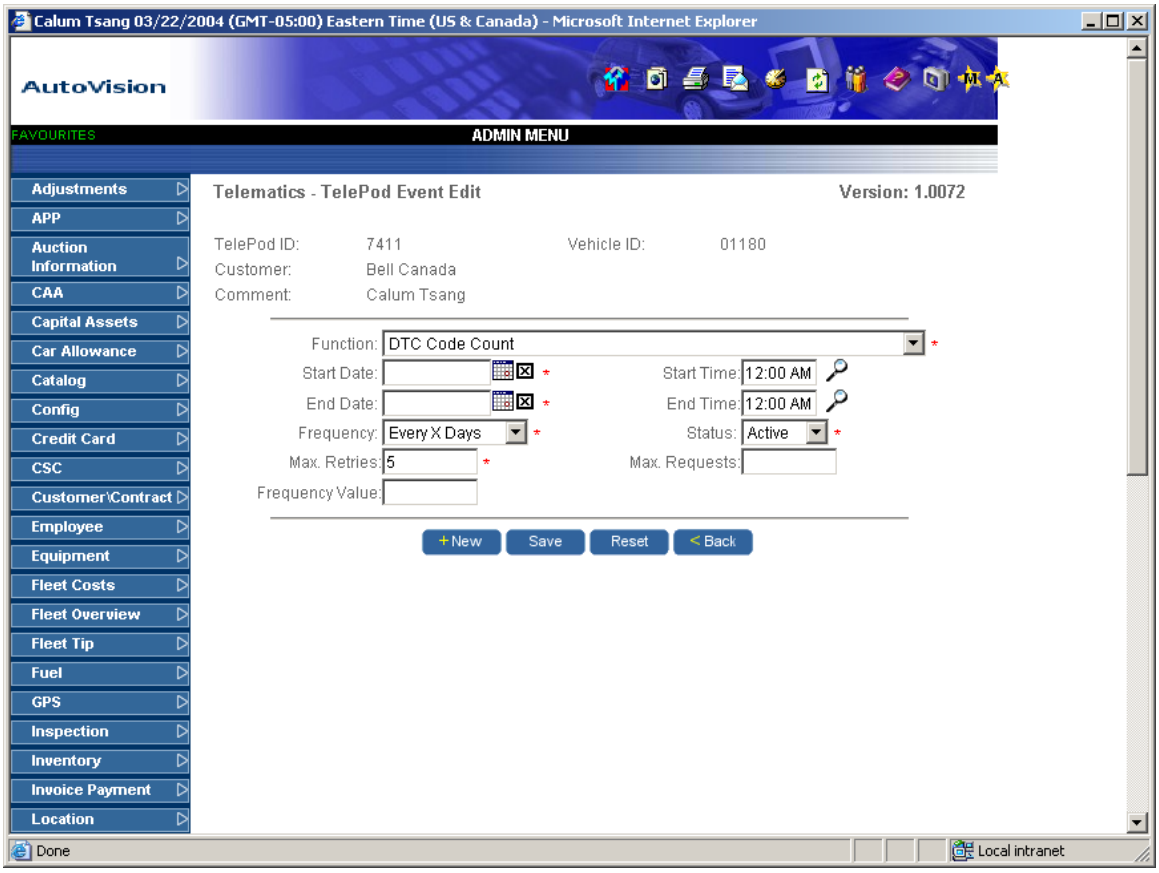
1. Click on the **X** button to the right of the desired event.
2. Confirm the deletion.

The system will delete the event from the schedule. The next time each TelePod contacts the server, it will resynchronize their internal schedules based on this change.

4.2.7 EDIT SCHEDULED EVENT (INDIVIDUAL)

While viewing an individual schedule on the TelePod Details screen:

8. Click on the **E** button to the right of the desired event. A new screen will appear for that event:



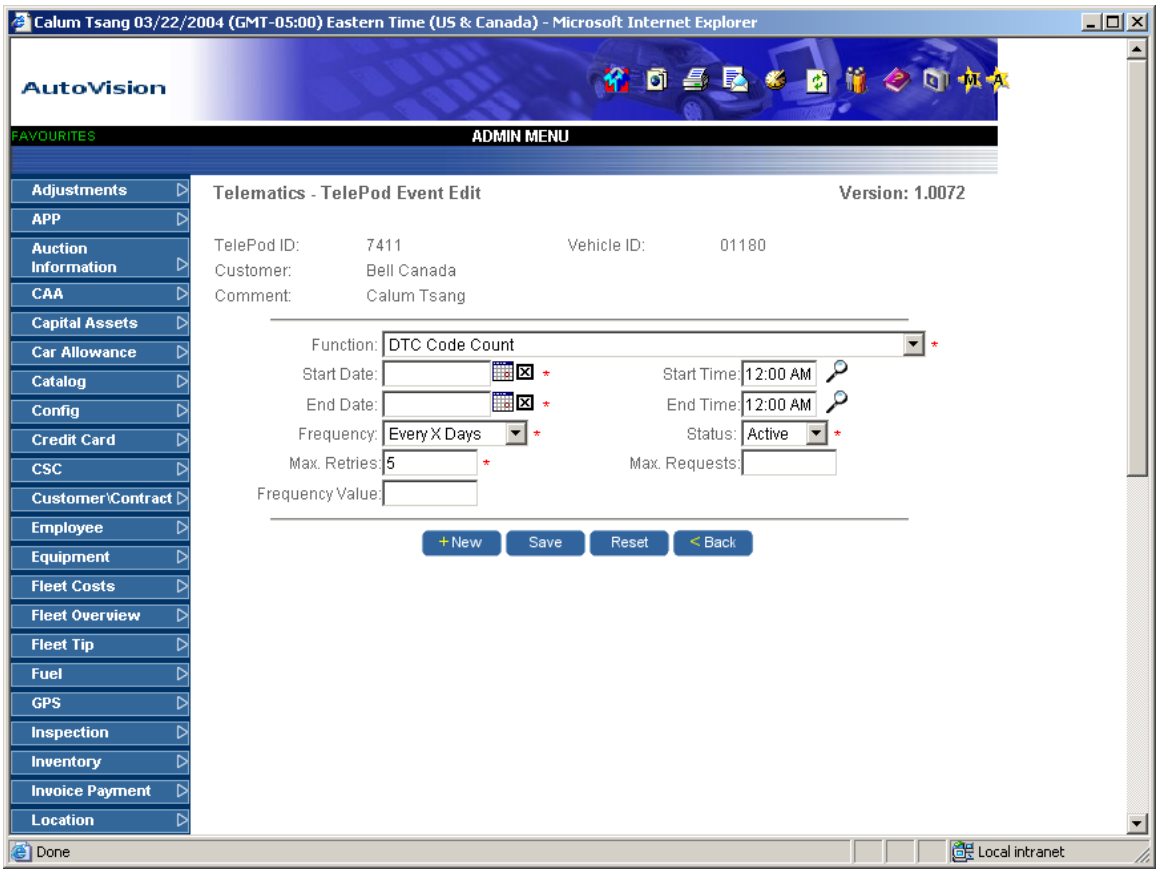
9. Select the **Function** required. This is the type of event requested from the TelePod and includes engine functions, GPS location and diagnostic requests.
10. Pick the Start **Date/Time, End Date/Time** for the beginning and length of this event. Clicking the calendar icon will pop a small selection window open for you to make a choice.
11. Pick a **Frequency** for the events to occur. This can be based on driver events (Ignition: Startup, Shutdown) or on a time (Every X Minutes, Every Week etc).
12. Set the **Status** to Active for the event to be processed.
13. Enter the maximum number of retries in **Max. Retries** for the event to be attempted. This is a throttling safeguard to discourage useless data to be transmitted if the subsystem is unavailable.
14. Click **Save**.

The changed event entry will be updated to reflect your modifications.

4.2.8 ADD SCHEDULED EVENT (INDIVIDUAL)

While viewing an individual schedule on the TelePod Details screen:

8. Click on the **+** button at the top right of the event listing. A new screen will appear for that event:



9. Select the **Function** required. This is the type of event requested from the TelePod and includes engine functions, GPS location and diagnostic requests.
10. Pick the Start **Date/Time, End Date/Time** for the beginning and length of this event. Clicking the calendar icon will pop a small selection window open for you to make a choice.
11. Pick a **Frequency** for the events to occur. This can be based on driver events (Ignition: Startup, Shutdown) or on a time (Every X Minutes, Every Week etc).
12. Set the **Status** to Active for the event to be processed.
13. Enter the maximum number of retries in **Max. Retries** for the event to be attempted. This is a throttling safeguard to discourage useless data to be transmitted if the subsystem is unavailable.
14. Click **Save**.

The event schedule will be updated to reflect your addition.

5 SOFTWARE REPORT SEARCH

5.1 INTRODUCTION

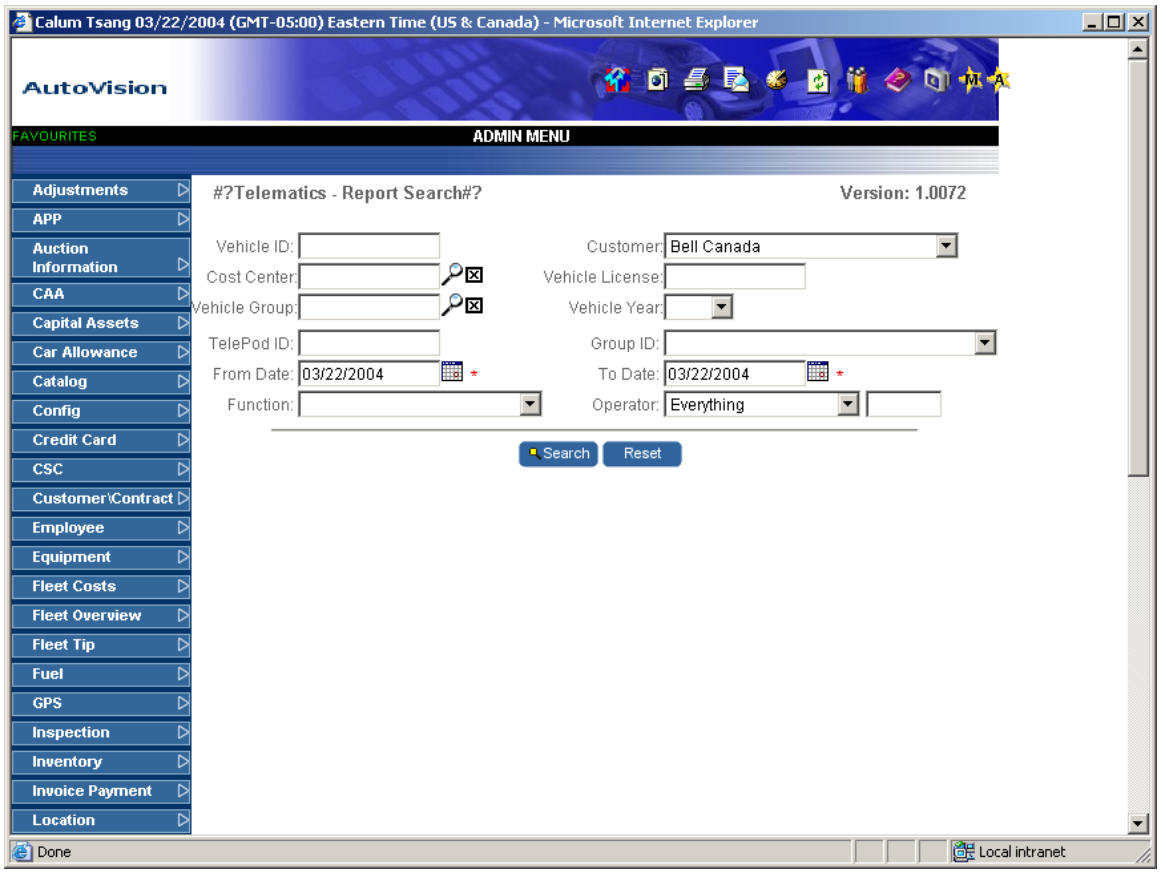
The Report Search function allows users to view reports of a vehicle by a specified time period.

5.2 USAGE

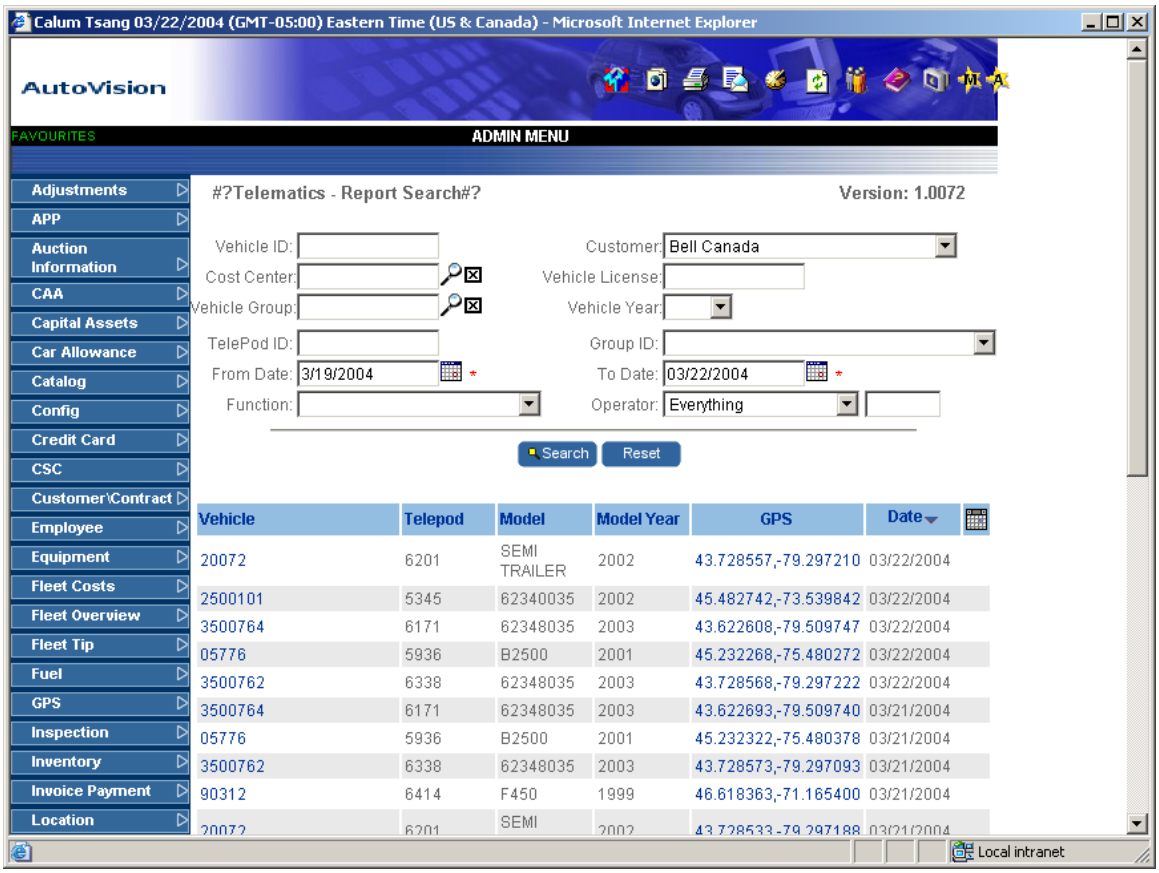
The user must first log into an account on AutoVision with the appropriate security permissions set for Telematics screen usage.

5.2.1 SEARCH REPORTS

1. Click the **Telematics** menu entry at the left side of the AutoVision screen. Next, click the **Report** submenu entry. A new screen will appear:



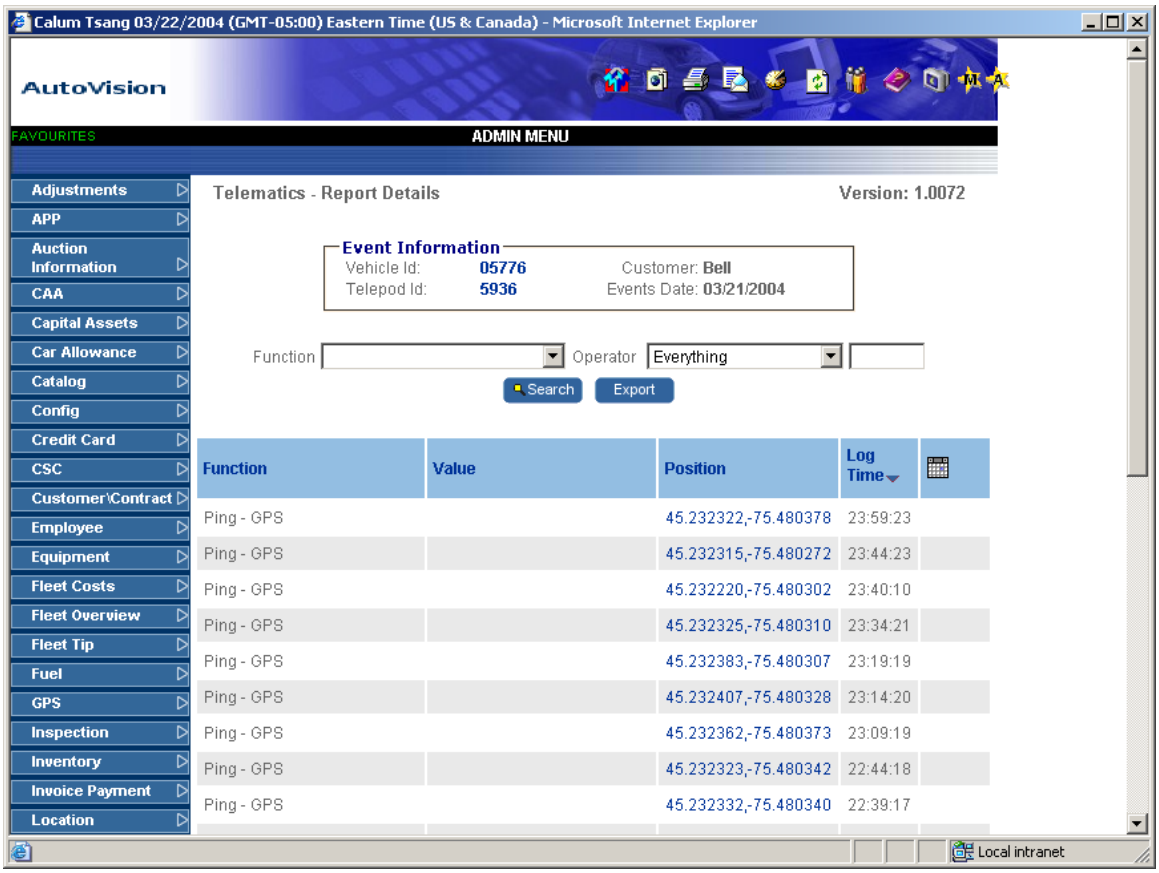
2. Input the desired report criteria. If the specific **TelePod** or **Vehicle ID** is known, enter them directly. If not, the use of multiple criteria can help dwindle the selection to a handful of Pods.
3. Input the **From Date** and **To Date**. The date range is important: use this to select the time period you wish to see Reports from. Use the pop-up calendar to select the date by clicking on the calendar icon. To select only one day, make **From** and **To** the same day.
4. Select **Search**. The user will see a screen similar to the one below:



5. A list of vehicles with reports matching the criteria entered will appear at the bottom of the screen. Additionally, you can sort the columns based on Vehicle Number, TelePod ID, Model Year or Date (Default).

5.2.2 VIEW REPORTS

1. Click on the **Vehicle** number to the left of the screen. A report similar to the one below will appear:

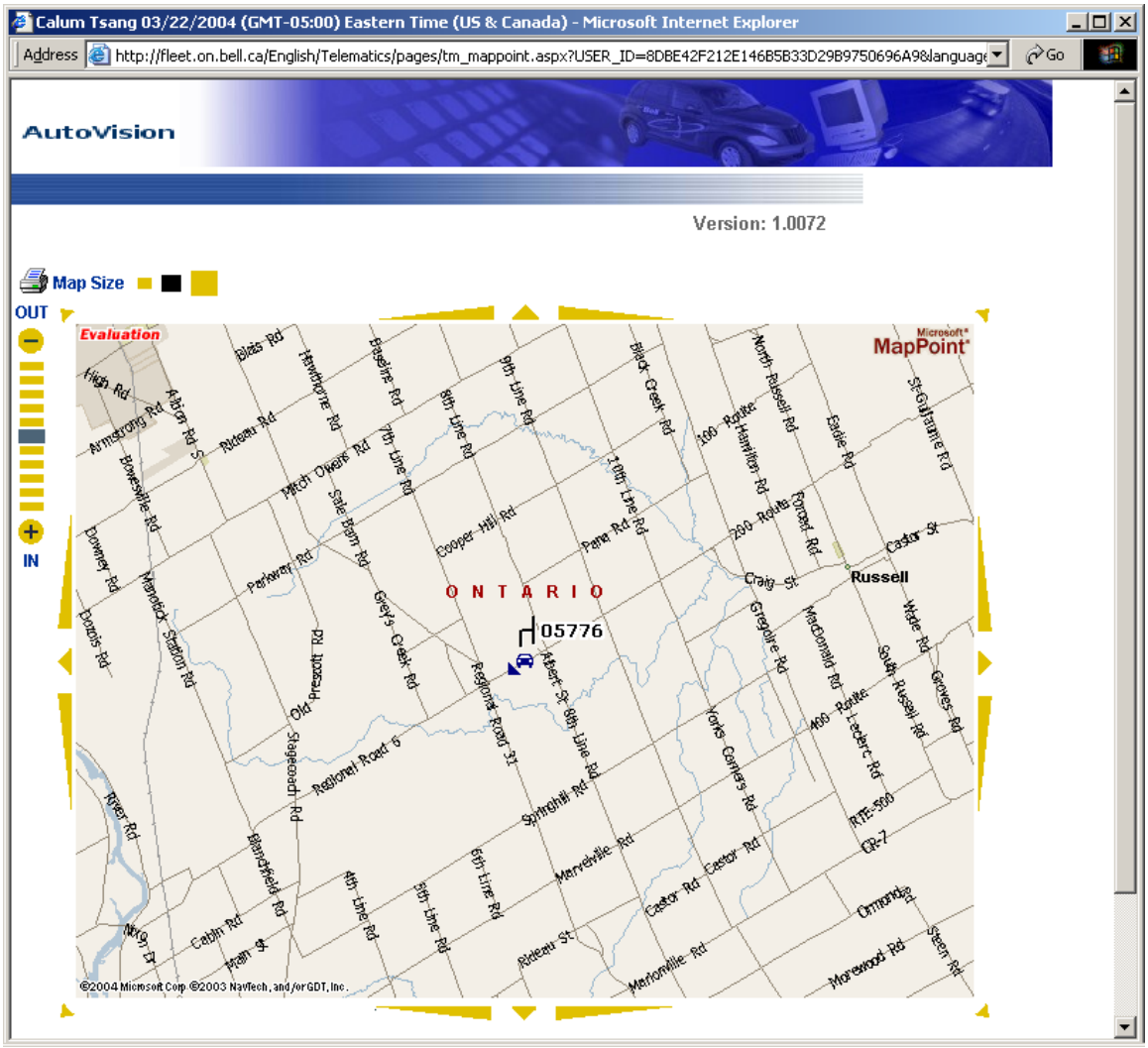


2. To review the data presented, you can use the **page forward and back controls** at the bottom of the page. By default, the results of scheduled events are shown in order of the logged time.

5.2.3 View Map Location

Every scheduled event lays down a position value. To see the position of the vehicle at the logged time of the event:

1. Search and View a Report, bringing the Report Details screen up.
2. Click the Position coordinates on the right side of the event entry. A new window will open, showing an interactive map:

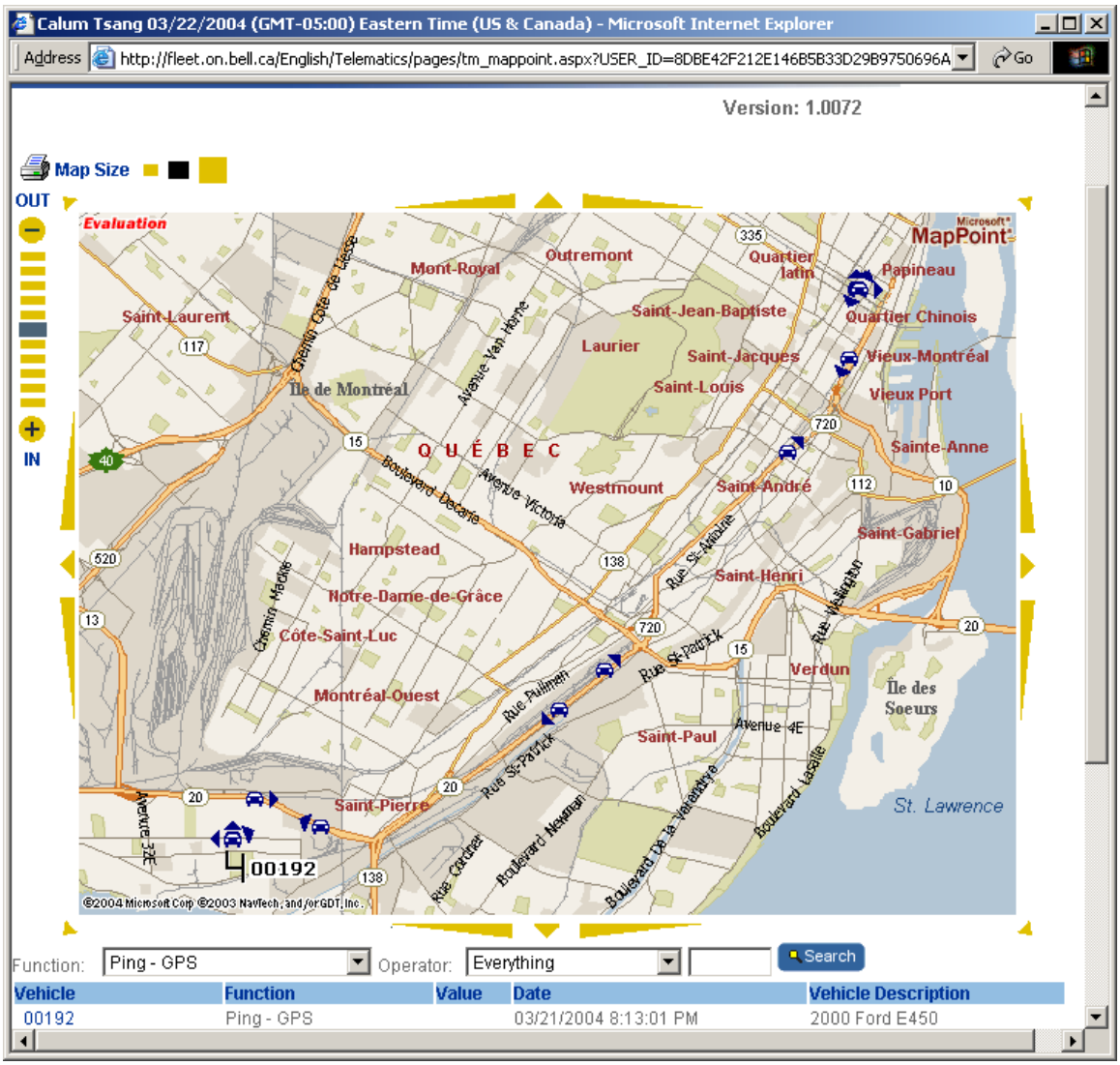


3. The **car icon** shows the location of the vehicle at the time of the event entry. The number near the car is the Vehicle ID of the unit in question. A small **arrowhead** shows the direction the vehicle was traveling in.
4. Use the **map arrows** at the edge of the screen to pan the map around. To increase or decrease the **map magnification**, use the buttons on the zoom control to the top right. The size of the map can be controlled with the **map size** buttons at the very top of the screen.

5.2.4 View Vehicle Route

Every scheduled event lays down a position value. These form a trail of GPS locations that show where a driver traveled. To see the last 30 points driven:

1. Search and View a Report, bringing the Report Details screen up.
2. Click the **Route Map** icon at the top right of the report details. A new window will open, showing an interactive map:



3. The **car icons** show where the vehicle location and direction at each of the recorded events on the TelePod.
4. Use the **map arrows** at the edge of the screen to pan the map around. To increase or decrease the **map magnification**, use the buttons on the zoom control to the top right. The size of the map can be controlled with the **map size** buttons at the very top of the screen.