

Software Version 6.1.5
I-Track Vehicle Management System
User Guide



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Part One - **I-Track Overview**

Chapter 1 - Welcome

Congratulations on your purchase of the I-Track vehicle tracking system. I-Track uses a personal computer and radio data link to let you track a fleet of vehicles in real time from a single base station computer and over a computer network using TCP/IP protocols. Using I-Track you can watch vehicle movements on your computer screen, retrieve vehicle history, and verify that vehicles traveled along routes you define **.

** This latter feature is not supported in version 6.1.5

1.1 Viewing Real-Time Data

With I-Track you can view data:

- ? As vehicle position and track history overlaid on Microsoft MapPoint land cartography data, customised for your selected area.
- ? In tabular form using standard Windows data viewing software such as Microsoft Excel or Microsoft Access.
- ? Over a network connection using TCP/IP protocols.

1.2 Historical Database

The system keeps a historical database of vehicle data, giving you the ability to review current and past vehicle movement, route activity ** and status information for each vehicle equipped with an IC-F1610 radio and GPS receiver. At the start of each day, I-Track automatically saves the data from the previous day in its own file to simplify management and decrease the demand on computer resources.

** Route activity is not fully implemented in version 6.1.4 of I-Track.

1.3 Software

The system uses a combination of software applications to manage vehicle data:

- ? I-Track Server
- ? I-Track Control Center
- ? I-Track Client

The I-Track Server is the heart of the I-Track system. In addition to maintaining the historical database of the vehicle data received, it handles all

data and administrative functions for the entire system. Part Three - page 26 of this manual discusses the I-Track Server in detail.

The I-Track Client is the main user interface to the I-Track system. It displays vehicle data graphically and allows you to administer vehicles, communication channels and users. The I-Track Client can be installed either on the computer that houses the Server (Base Station Computer) or on a separate computer connected to the Base Station via a network (See Part Five - I-Track Client on page 41).

The I-Track Control Center is a separate program allowing a system administrator to configure the communication channels, set properties and timings for the radio channel(s) and view serial data communications between the server and the base station radio. (See Chapter 7 -, Control Center, on page 30).

1.4 Vehicle Hardware

The GPS receiver calculates the vehicle's position, and passes this data via the RS232 lead to the IC-F1610 mobile radio. In turn the vehicle position and any other data required are passed to the IC-F1610 base station using FFSK signaling. The equipment installed in each vehicle includes:

- ? An I-Track GPS (Global Positioning System) black box receiver.
- ? An IC-F1610 PMR (Private Mobile Radio) radio, programmed with FFSK mobile software.
- ? A combination GPS/PMR fixed antenna.

1.5 Requirements

1.5.a I-Track Server

(See Part Three - I-Track Server, page 26 for further information)

Hardware:

	Minimum	Recommended
CPU	Pentium II-300 MHz	Pentium II-400 MHz
RAM	64 Mb	128 Mb
Hard Drive	2 Gb	4 Gb
Network	Network adapter 10/100Mbps	
Other	1 COM port	At least 2 COM ports
Other	1 Parallel port	1 Parallel port

Software:

I-Track Server requires:

- ? Microsoft Windows 2000, NT 4.0 (SP5 or later) or XP Professional.

? TCP/IP network protocols

1.5.b I-Track Client

(See Part Five - I-Track Client, page 41 for further information)

Hardware:

	Required	Recommended
CPU	Pentium III-300 MHz	Pentium III-700 MHz
RAM	128 Mb	256 Mb
Hard Drive	2 Gb	
Network	Network adapter 10/100 Mbps	
Other	4 Mb Video Card 17" monitor 1 Parallel port	8 Mb Video Card 19" monitor 1 Parallel port

Notes:

- ? The entire I-Track system may be run from one PC. As a minimum the I-Track system will require at least one server specification PC. Additional client computers may be added to the system at or above the I-Track client PC specification.
- ? For best results, set a 17" monitor (minimum), 19" monitor (recommended) to a resolution of 1024x768 16 bit (minimum), 1280x1024 recommended, 1600x1200, 24 bit (optimum).

Software:

I-Track Client requires:

- ? Microsoft Windows 2000, NT 4.0 (SP5 or later) or XP Professional
- ? TCP/IP network protocols

1.6 System Overview

Figure 1 below illustrates the I-Track system structure.

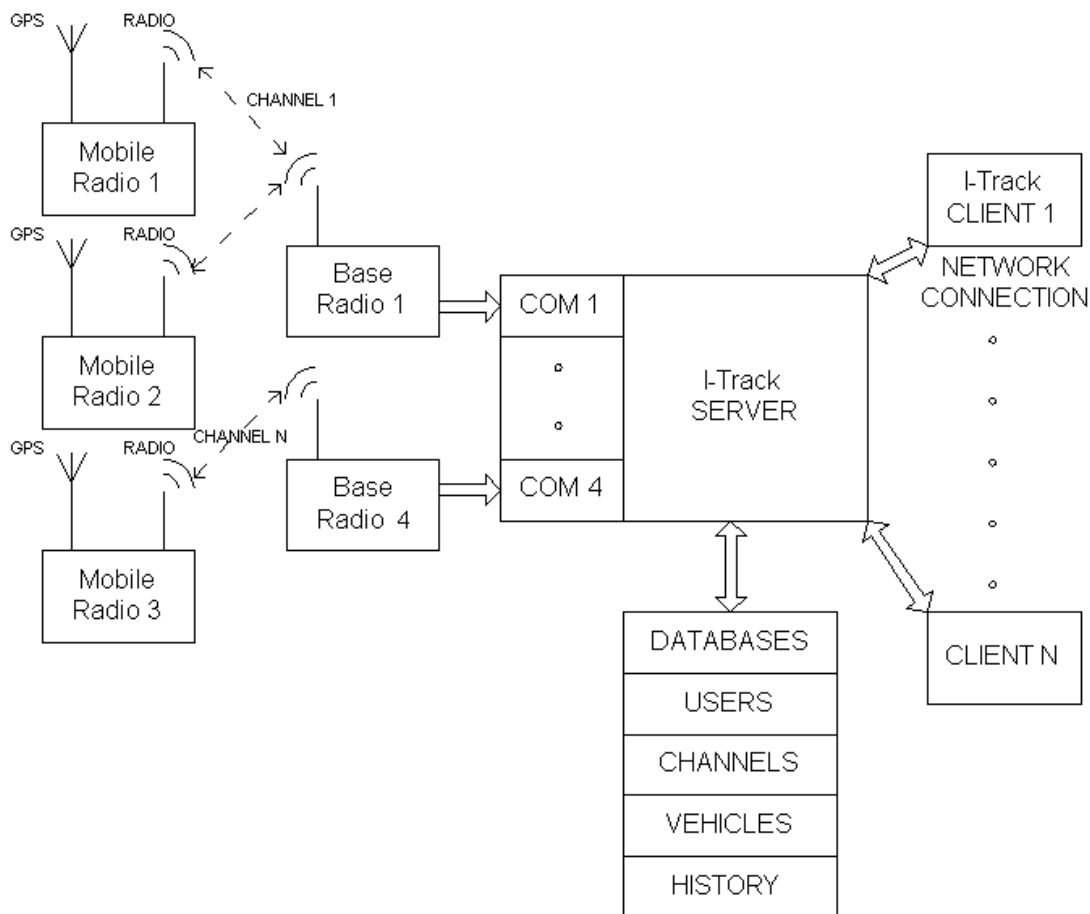


Figure 1. The I-Track system structure.

The vehicle GPS calculates position and transmits data back to the base via the IC-F1610 radio. The Server receives the data from the IC-F1610 base radio and sends the information to the Client software for visual display. The Server also manages Users, Channels, Vehicles, and History databases. The I-Track History Manager displays historical information from the databases.

1.7 Important information about using GPS for vehicle tracking

The Global Positioning System (GPS), developed by the US Department of Defense, is a constellation of twenty-four satellites that orbit the Earth twice a day. They continuously transmit radio signals with precise time and positioning information to anywhere on the globe 24 hours a day.

By using the position of three or four satellites and calculating the time difference between their transmitted signals, a GPS receiver can determine its present position anywhere on Earth. By comparing position data from

one instance to the next, the GPS receiver can also calculate its speed and heading.

Until May 2nd, 2000, the US Department of Defense introduced an artificial error called " Selective Availability" (SA) into GPS signals for civilian use. SA caused GPS readings to be accurate only to within 100 metres. With the US government' s removal of SA from that date, the accuracy of GPS position signals has improved to 10 to 15 metres.

Despite this dramatic improvement, the inherent inaccuracy of GPS signals is such that vehicles tracked with GPS technology may occasionally appear to move unexpectedly. Such movements are due to the GPS signals themselves and not to driver or software error. This behavior is a limitation of current satellite technology and for most systems should not prove to be problematic.

Users who require greater accuracy may purchase an optional Differential GPS beacon receiver. DGPS provides a signal to the GPS receiver from a known, static position; this additional signal is used in the position calculation to produce a more accurate result. The extent to which DGPS improves accuracy is dependent on the quality of the DGPS receiver purchased. For most applications, DGPS is not necessary.

1.8 Installing I-Track Software

The I-Track system software is provided on a single CD.

The Microsoft MapPoint data and software is supplied on a separate CD.

Before installation please read the ' Read-me' file on the I-Track CD for any late breaking information relating to the software or system.

To install the software simply insert the I-Track CD into a suitable drive on the Server. Run ' Setup.exe' from one or more of the three directories: Server; Client; and Center, as appropriate.

1.8.a To install all software on a single machine

If the entire I-Track system is to be run on a single computer, run 'Setup.exe' from each of the three directories.

1.8.b To install Server software on a dedicated machine

Run 'Setup.exe' from the Server folder on the CD. Optionally, if you wish to administer the system from the Server machine, you may install the Center software from the Center folder by running 'Setup.exe' from that folder.

1.8.c To install Client software on a Client-only machine

Run 'Setup.exe' from the Client folder on the CD. Optionally, if you wish to administer the system from one or more of these Client machines, you may install the Center software from the Center folder by running 'Setup.exe' from that folder.

1.8.d To complete any of the three installation types above

Follow the on-screen set up instructions to complete the installation of the software.

See later in this manual for a detailed discussion of the ITrack Installation and setup (Chapter 3 -, Installation, on page 13).

Chapter 2 - Hardware

The I-Track vehicle hardware is a GPS black box receiver which receives the satellite signals to calculate position data. The IGF1610 is used for all forms of communication with the base radio (voice, status, text messaging and GPS positions).

2.1 System Components

2.1.a Vehicle Hardware

- ? IC-F1610 radio programmed with mobile FFSK software.
- ? Vehicle Antenna.
- ? GPS Black Box Receiver.

2.1.b Base Station Hardware

- ? IC-F1610 radio programmed with base FFSK software.
- ? Server/Client PC(s).
- ? Dongle (connected to parallel port needed to run protected software).

Part Two - **Getting Started**

Chapter 3 - Installation

The I-Track system is installed in two stages.

Install I-Track software, comprising:

- ? Control Center.
- ? Server
- ? Client

Install Microsoft MapPoint software, comprising:

- ? Program
- ? MapPoint Data

It may be necessary to restart your computer after or during the installation of each stage.

Note: On Windows NT systems (and possibly others) the boot partition (usually drive C:) size is typically a maximum of 4GB. Applications are generally installed to drive C: by default, which can quickly fill this drive. It is recommended, particularly for the Microsoft MapPoint software, which contains a very large database, that you install to another drive, if available. To do so, when prompted with the "C:\Program Files..." prompt, you should take the "Browse" option and change the "C:" to "D:" or whatever drive letter is appropriate.

3.1 Installation method –I-Track

Insert the I-Track CD into your CD drive.

3.1.a To install all software on a single machine

If the entire I-Track system is to be run on a single computer, run 'Setup.exe' from each of the three directories on the CD and follow the on screen prompts and instructions.

3.1.b To install Server software on a dedicated machine

Run 'Setup.exe' from the Server folder on the CD. Optionally, if you wish to administer the system from the Server machine, you may install the Center software from the Center folder by running 'Setup.exe' in that folder. Follow the on screen prompts and instructions.

3.1.c To install Client software on a Client-only machine

Run 'Setup.exe' from the Client folder on the CD. Optionally, if you wish to administer the system from one or more of these Client machines, you may install the Center software from the Center folder by running 'Setup.exe' from that folder. Follow the on screen prompts and instructions.

Note: All three setup programs must be run on some combination of computers for the I-Track software to be correctly installed. The Server software must be installed on the computer physically connected to the Icom base station.

The dongle supplied must be connected to the PC's parallel port, otherwise the protected software will not run. The following message is displayed if the dongle is not connected.

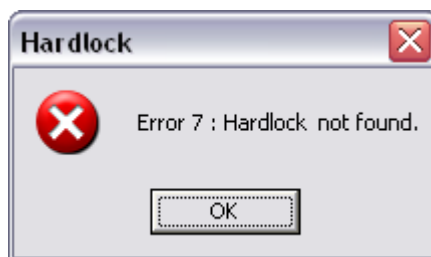


Figure 2. Hardlock error window

3.2 Installation Method –MapPoint

MapPoint must be installed on all machines running Client software.

Note: A MapPoint License is required for each Client machine.

Important

If MapPoint 2004 is used a delay timer must be set, this is in View menu - MapPoint Properties - Real time delay. See I-Track Client View section for more details.

Insert the MapPoint CD into your CD drive.

Run the ' Setup.exe' program and follow the on screen prompts and instructions.

Important. When asked, select the option to "Copy all map data files to the local hard drive" (Full Installation) on the workstation.

Note: On Windows NT systems (and possibly others) the boot partition (usually drive C:) size is typically a maximum of 4GB. Applications are generally installed to drive C: by default, which can quickly fill up this drive. It is recommended, particularly for the Microsoft MapPoint software, which contains a very large database, that you install to another partition or hard disk, if available. To do so, when prompted with the "C:\Program Files..." prompt, you should take the "Browse" option and change the "C:" to "D:" or whatever drive letter is appropriate.

Chapter 4 - Initial Setup

After installation and restarting your computer, the I-Track system must be configured to your requirements.

This should be done in the following order.

Before any other activity can take place on the system, the I-Track Server must be running.

4.1.a To start the I-Track Server

Click the Windows **Start** button, then click **Programs**.

Click **AvMap**, **Server** and **Server** again to launch the program. The following window is displayed.

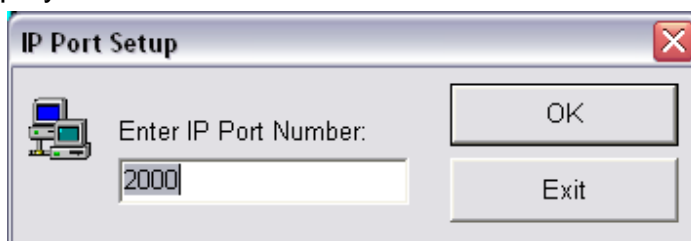


Figure 3. IP Port Setup window

Enter an IP Port number of 2000 and then Click **OK**.

Note: Port 2000 is recommended but any other port number, currently unused on your system, could be chosen.

The Server program will then start. The following window is displayed.

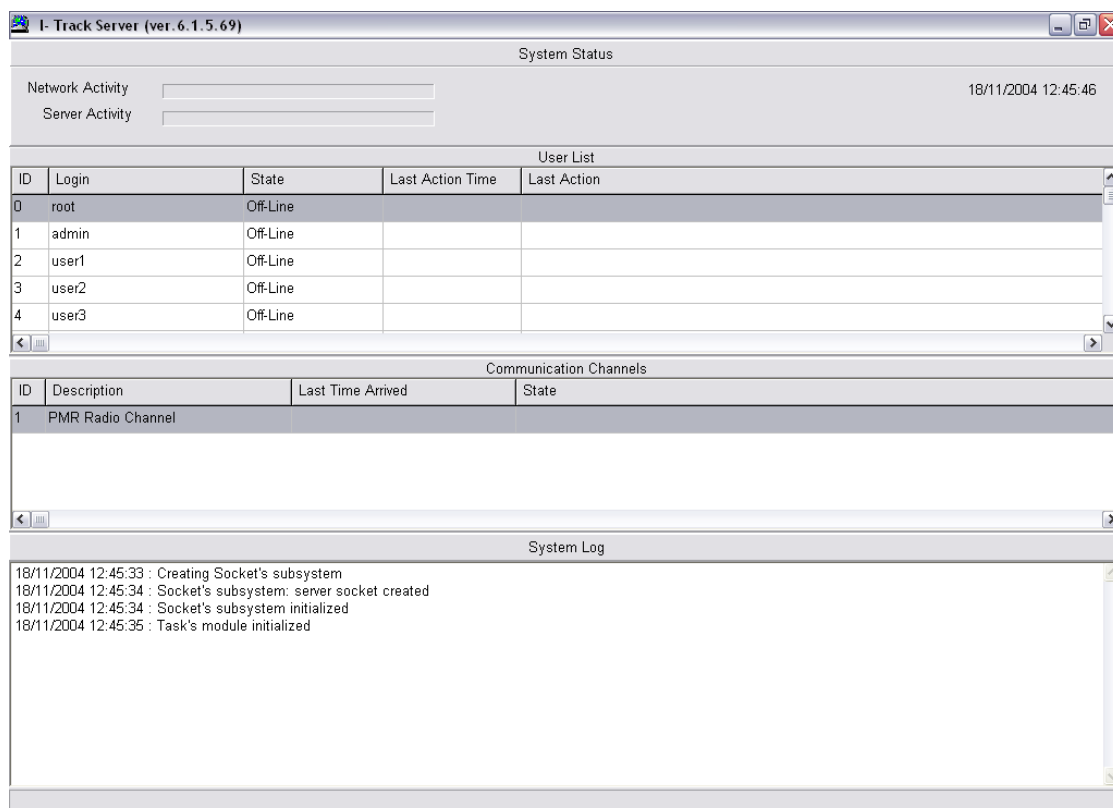


Figure 4. Server Status window

Click on the I-Track Server windows' minimise button to move the Server program to the task bar.

4.1.b To start the I-Track Control Center

Click the Windows **Start** button and then click **Programs**.

Click the **AvMap** button, then click **Center** button and then **Center** again to launch the program.

The following window is displayed when the program is started.

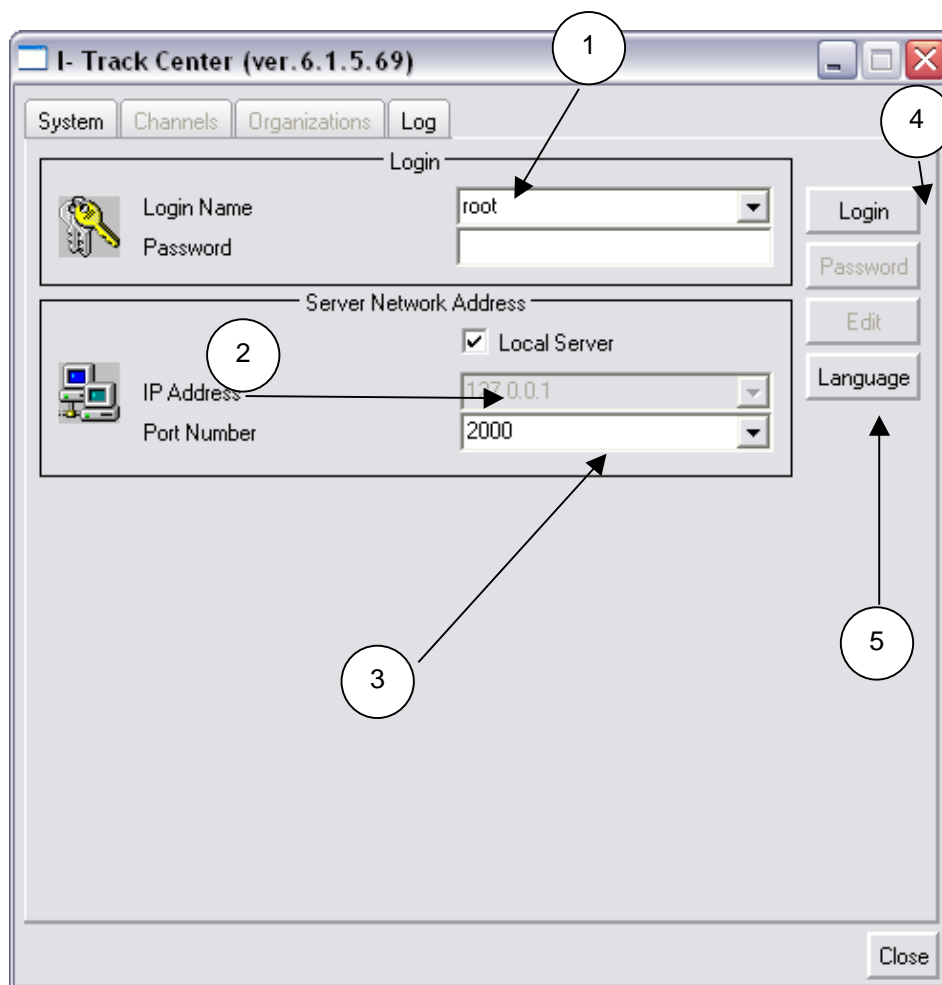


Figure 5. I-Track Center System window (not logged in).

Enter “ root” (1) as Login Name, then click tick box (2) “ Local Server”, then enter (3) Port Number 2000 as above.

Note: "Local Server" means "This machine". If you installed the Server software on another machine and therefore want to connect to the Server via the network, **do not** tick “ Local Server”. Instead, enter the IP Address of the machine running the I-Track Server software.

To change the language of the I-Track Control Centre click the **Language** button (5) the following window will be displayed



Figure 6. Select Language window

Select a language from the languages available in the drop down box. Click **OK** to save new language, the following window is displayed.

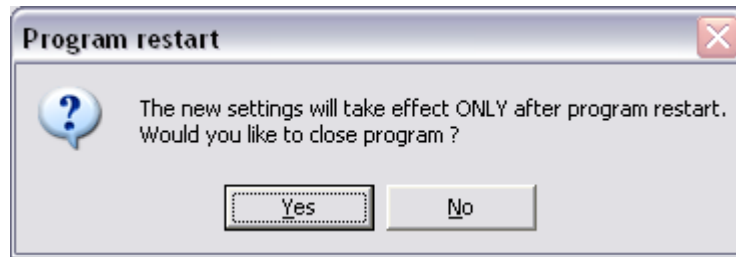


Figure 7. Program restart window.

Click **Yes** to restart program, the I-Track control centre will then be shut down and need to be restarted. When restarted, the control centre interface will be displayed with the language selected.

Click the **Login** button (4). The following window will be displayed.

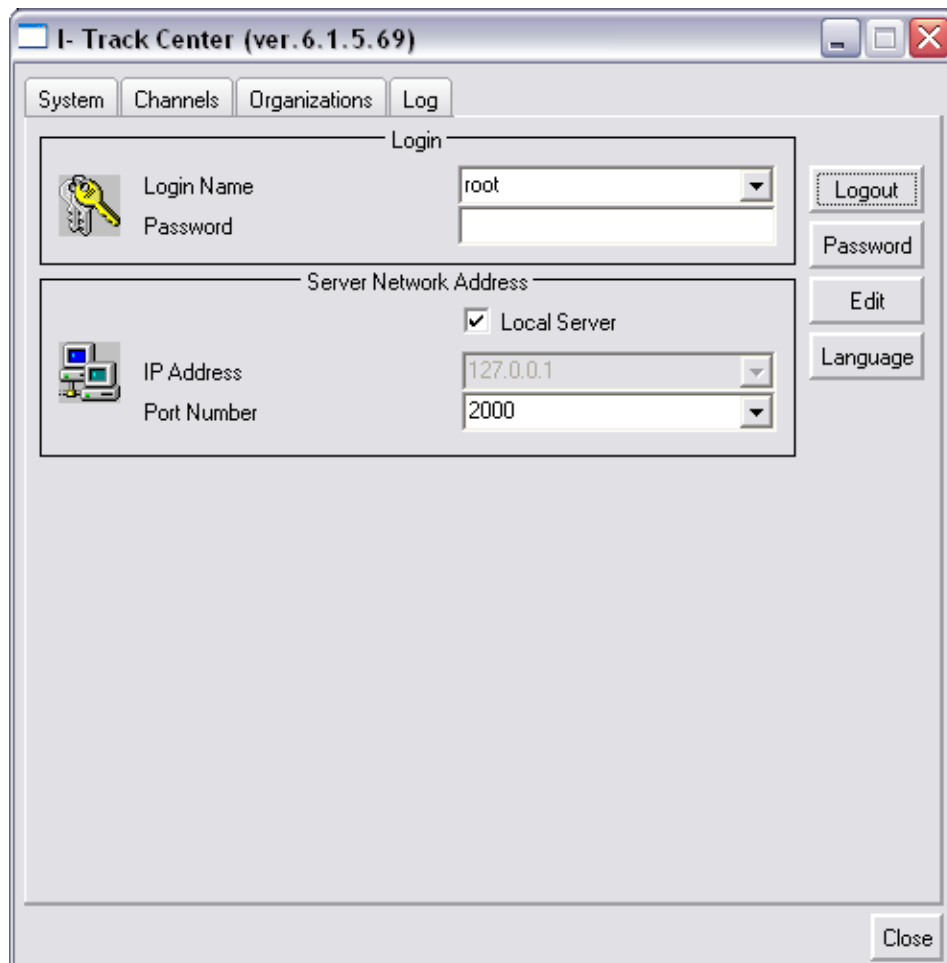


Figure 8. I-Track Center System window (Logged in)

4.1.c To change the system Supervisor's password

Click the **System** tab (if necessary) and click **Password**. Enter a new password (up to 16 characters, case sensitive) and enter it again in the Confirm box. Click **OK**.

***** IMPORTANT NOTE: "root" is supplied with a blank password. It is highly recommended that you choose a secure password for "root" and keep a record of that password in a secure location.**

4.1.d To add an Organisation and its Administrator

Click the **Organisations** tab, then click the **Add** button. The following window will be displayed.

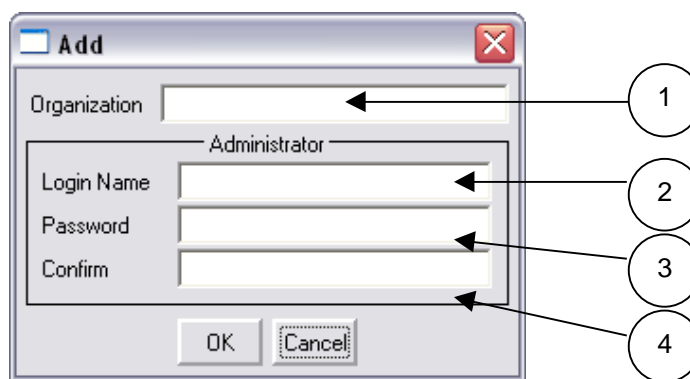


Figure 9. Add Organisation window.

Enter a name for your Organisation in the text box (1), up to 15 characters. This field is case sensitive.

Enter a User Name for the Administrator of this Organisation in the Login Name text box (2), up to 15 characters. This field is case sensitive.

Enter a password in the Password text box (3), up to 15 characters. This field is also case sensitive.

Re-enter password in the Confirm text box (4).

Click the **OK** button to save.

By default, a PMR radio channel is enabled on Com port 1.

The Channel can be edited or a new channel added.

4.1.e To add a Channel

Select the **Channels** tab. The following window will appear.

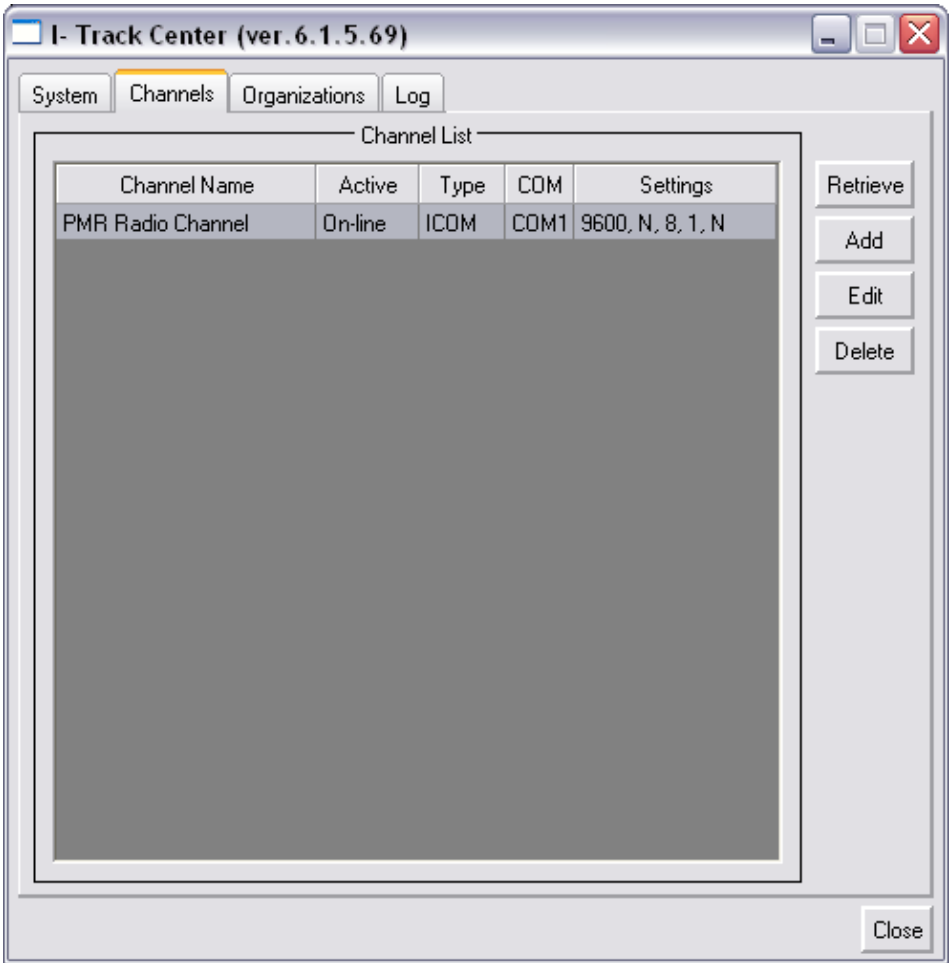


Figure 10. Channels window.

Click the **Add** button. The following window will appear.

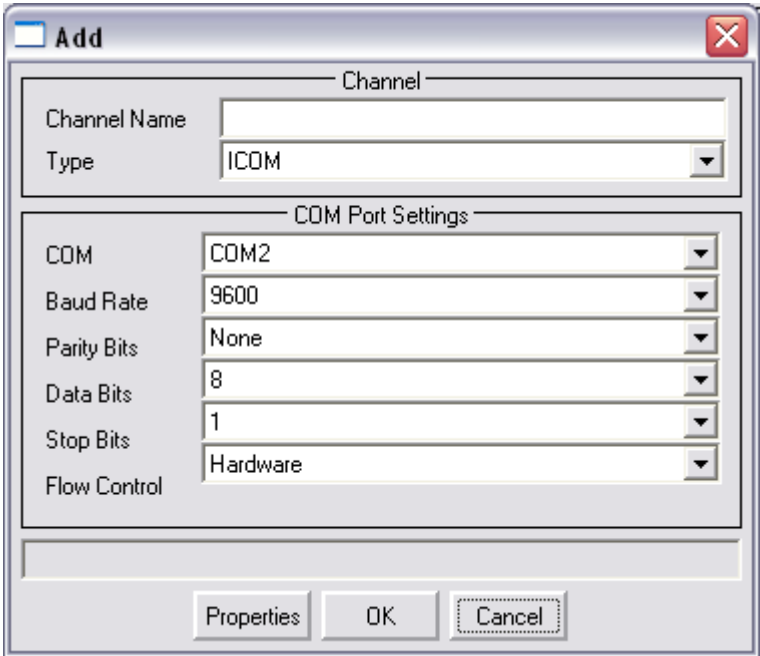


Figure 11. Channel Add window.

Enter a name for the channel in the Channel Name field, e.g. "PMR channel", "Channel One" or "BloggsCorp-Ch1" (without quotes) as appropriate.

The "Type" must always be set to "Icom" if the base station is an Icom IC-F1610.

Select the PC Com port to which the base station radio equipment is connected.

The default Com Port Settings do not need to be changed.

Click **OK** to save changes.

If using more than one base station, repeat the above instructions for each. Each base station requires its own Com port.

By Default, an Administrator "Admin" has been assigned to an organisation "Org" which has PMR radio channel assigned.

An administrator can be edited or a new one added to the channel.

4.1.f To add a Channel to an Organisation

Click the **Organisations** tab. You should see the organisation and administrator entered earlier in the Add Organisations section of this chapter (4.1.d, To add an Organisation and its Administrator, on page 19).

Click the **Edit** button. The following window will appear.

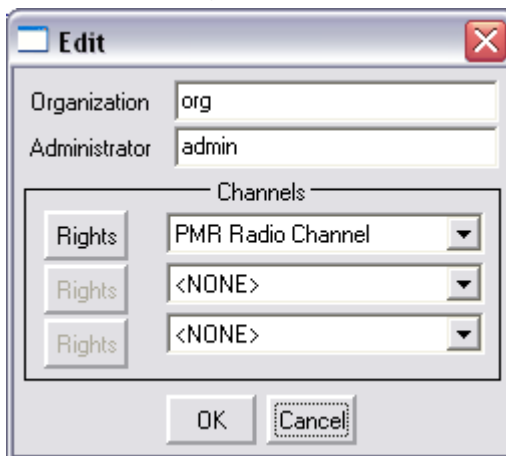


Figure 12. Edit Channel/Rights window.

Select the first drop down button in the Channels group. The following window is displayed.

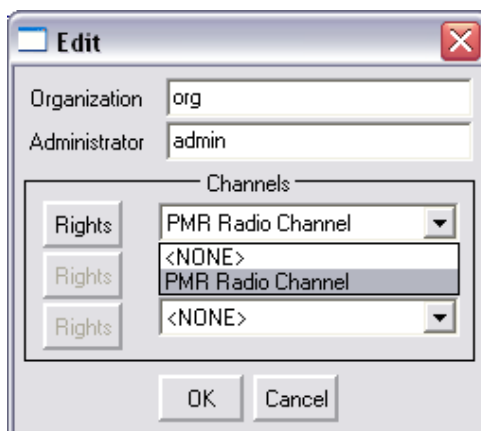


Figure 13. Edit Channel/Rights window –select rights.

Select the channel name entered in the previous section (4.1.d, To add an Organisation and its Administrator, on page 19). e.g. PMR channel.

Click **OK** to save the changes.

Note: The I-Track Control Center basic set-up is now complete. See Chapter 7 -, Control Center, on page 30 for further information on I-Track Control Center.

Chapter 5 - Configuration: Server, Center and Client

After the initial set up has been completed, the ITrack system is nearly ready to use. This chapter briefly details the configuration for the Server, Center and Client applications. It should be used in conjunction with the detailed information for each application.

Before using the system, the Administrator must enable each computer user (operator) requiring access to the system. This can be done from the ITrack Client User Manager menu (See Part Five -11.2, page 63).

Note: Only the user who has logged on "local to server" has the rights to the microphone in version 6.1.5 of ITrack software.

Before using the system, the Administrator must add vehicles requiring access to (and to be tracked by) the system, This can be done from the I-Track Vehicle Manager menu (Part Five -11.1, page 60).

Attach vehicles to all or selected users as required (Part Five -11.2.g, page 66).

5.1.a To edit Channel properties (basic)

There are a number of additional settings and timings which can optimise your particular installation/set up. These will help your ITrack system run more smoothly.

Note: See Chapter 7 -, Control Center, on page 30, for detailed information on all options and timings.

Open the I-Track Control Center, and Log In.

Select the Channels tab and click the **Edit** button.

From the Edit window, select the **Properties** button. The following window is displayed.

Figure 14. Channel properties window.

In the Busy Channel group, select tick boxes as required. You will need to consult your radio supplier/dealer, who can inform you which options to select for your particular radio installation.

In the Properties group, enter the optimal timings. Again you will need to consult your radio supplier/dealer, who can inform you of suggested timings for your particular radio system depending on the number of vehicles on your system and the channel access method used.

In the Repeater group, select the tick boxes as required. Again you will need to consult your radio supplier/dealer, who can inform you which options to select for your particular radio installation.

The Server program has only one parameter that can be changed if required. This parameter is the radius from a Waypoint, within which the vehicle history information will show a vehicle as having visited a Waypoint. The vehicle history Waypoint feature is not fully implemented in version 6.1.5 of I-Track .

5.1.b To edit Waypoint Radius

Click the Windows **Start** button, then click **Programs**.

Click **AvMap**, then click **Server** and **Server Configuration**. The following window is displayed.

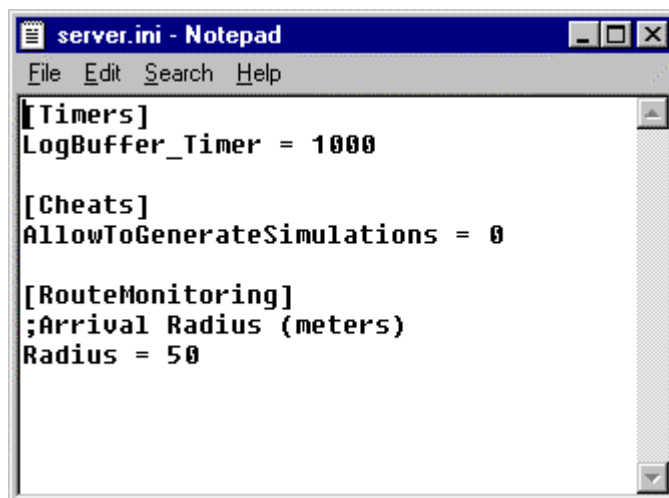


Figure 15. Server.ini window

Enter the required radius in metres.

Click **File** and **Save** to save the changes.

The I-Track vehicle management system is now ready to use. It is recommended that this User Manual is read thoroughly before using the I-Track system. This will help familiarise the user with the functions and options available within the I-Track system.

Part Three - **I-Track Server**

Chapter 6 - Server Overview

The I-Track Server software is the heart of the vehicle tracking system. It handles all data and administrative functions.

6.1 Core of the System

The I-Track Server acts as the middleman between vehicles and the Client software. The I-Track Server:

- ? Receives data from vehicles on a variety of communication channels.
- ? Processes that information and stores it in the appropriate databases.
- ? Sends the processed information to the Client software for each logged-in user.

6.2 Security

The I-Track Server contains security features to ensure that only the Administrator can change the settings for vehicles, users, communication channels, and routes. Other users may have permission to monitor vehicles, but not change system settings. See page 35 for a detailed description of changing system settings.

6.3 Flexibility

Adding, removing or updating vehicles, channels or users does not require the Server to be restarted, as changes are implemented immediately.

6.4 Features

The I-Track Server software:

- ? Sends requests to vehicles for position data.
- ? Receives GPS data from vehicle radios.
- ? Saves data in the History database.
- ? Automatically sends information to Clients as it is received.
- ? Manages databases (Users, Channels, Vehicles, History, Tasks, Routes, Waypoints).
- ? Sends status messages to vehicles.

- ? Receives status messages from vehicles.
- ? Sends text messages to vehicles.
- ? Sends voice calls to vehicles.
- ? Receives voice calls from vehicles.

6.5 Starting the Server

6.5.a To start the I-Track Server:

From the Windows Start Menu select Programs, and AvMap. Then click Server and Server again. The following dialog window will appear.

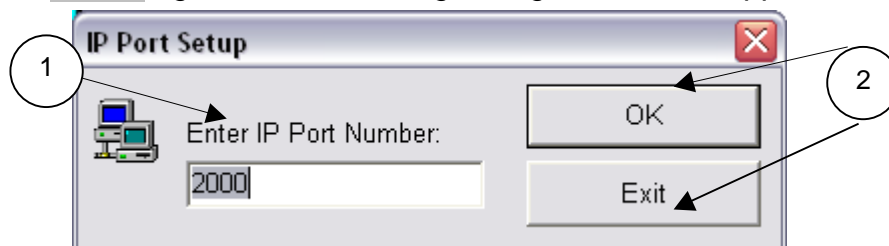


Figure 16. The IP Port Setup Window appears when you start the ITrack Server software.

1. IP Port Number
2. OK and Exit buttons

The Server IP Port Number defines how the Server receives incoming connections.

If it is not already in the text box, enter the IP Port Number of your system. If you do not know this setting, contact your system administrator. The default IP port number is 2000.

Click **OK** to log in (click **Exit** to quit startup). When log in is successful, the Server will start and you will see the following window:

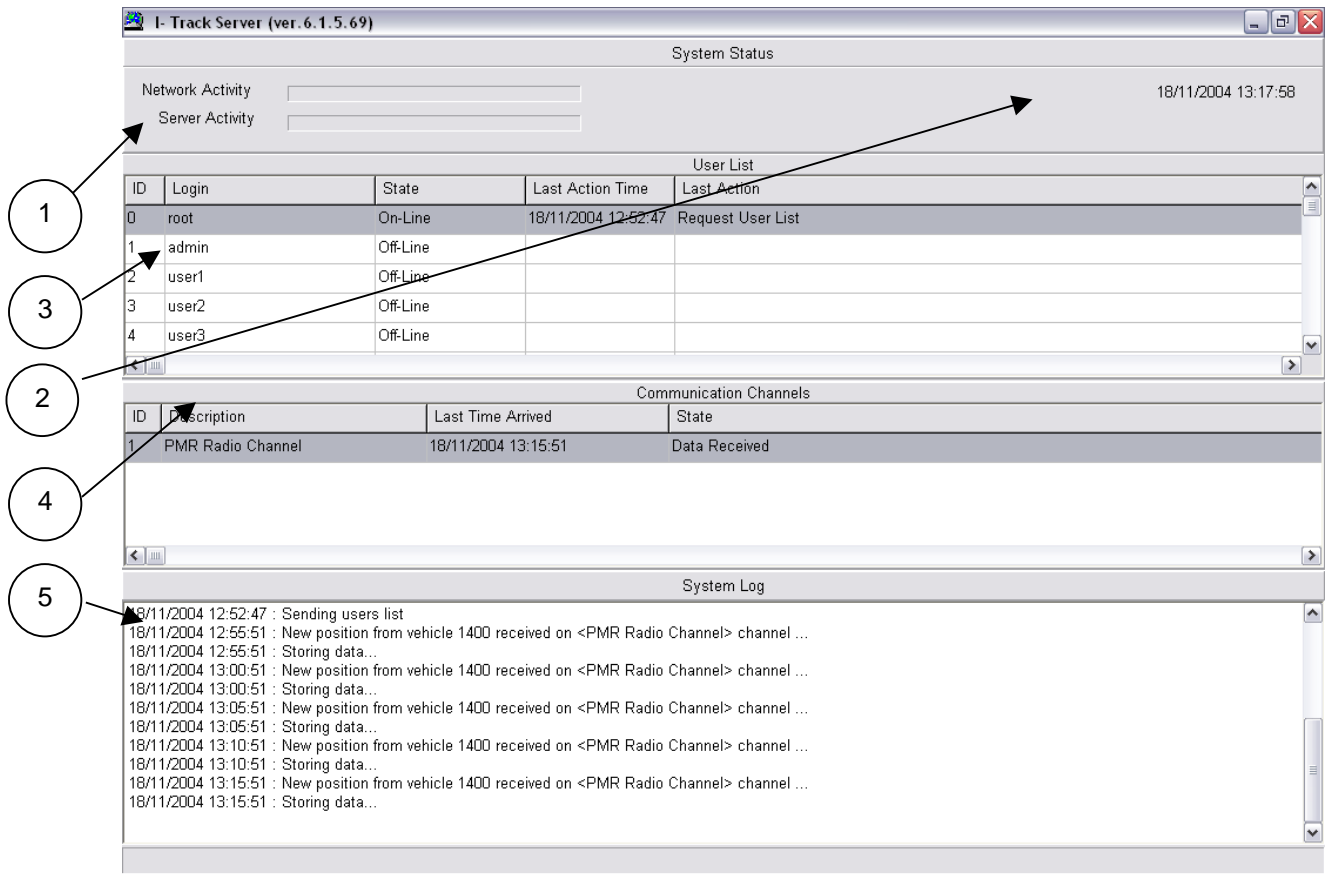


Figure 17. The I-Track Server application window.

1. System Status
2. Date (Month/Day/Year) and Time
3. User List
4. Communication Channel list
5. System Log

The System Status panel registers the activity of the I-Track Server. In the System Status panel:

- ? Network Activity shows the number of requests from Clients waiting to be processed. Under normal circumstances, this bar is empty.
- ? Server Activity shows how much of the CPU the Server is using at any given time. Usually, this bar is empty.
- ? The User List (3) shows which users are currently logged in and the last action taken by each.
- ? The Communication Channels list (4) shows the communication channels that are currently configured to work with the I-Track system.
- ? The System Log (5) keeps a running list of all Server actions.

When the Channels (Part Two -4.1.e, page 19) and Vehicles (Part Five - 11.1.b, page 60) are set up, the Server automatically begins gathering position data and sending it to the Clientsoftware.

The Server should be left running in the background at all times. You will only need to interact with the Server for system troubleshooting or verifying system status.

6.5.b To stop the I-Track Server

Generally, the Server program should be left running but on occasion, perhaps for company-wide holidays or maintenance, it may be necessary to stop the system.

Click the I-Track Server item in the Windows Task Bar to bring it to the foreground.

Click the X in the top-right corner of the I-Track Server window.

You will be asked to confirm your intention to exit.

Click **Yes** to close the Server program or **No** to leave it running.

Note: Any Clients still logged in will receive an error message, stating that their connection has been lost, and they will need to Log In again. This is partly true, except that they will be unable to do so until the Server program is re-started.

It will be necessary to restart the Server before any vehicle tracking is possible or to use Control Center (See 6.5.a, To start the I-Track Server on page 27).

Part Four - I-Track Control Center

Chapter 7 - Control Center

7.1 General

The I-Track Control Center is used for configuration and set-up of the system. This allows the Administrator to set up the computer COM port setting, channel timings and organisational rights on the channel etc.

7.1.a To open Control Center

Note: The I-Track Server must be running before starting the ITrack Control Center.

Click the Windows **Start** button, then click **Programs**, **AvMap**, then **Center** and **Center** again to launch the program. The program can also be launched if the tfxcentre.exe file is double clicked in the “Center” folder.

Select the System tab. The following window is displayed.

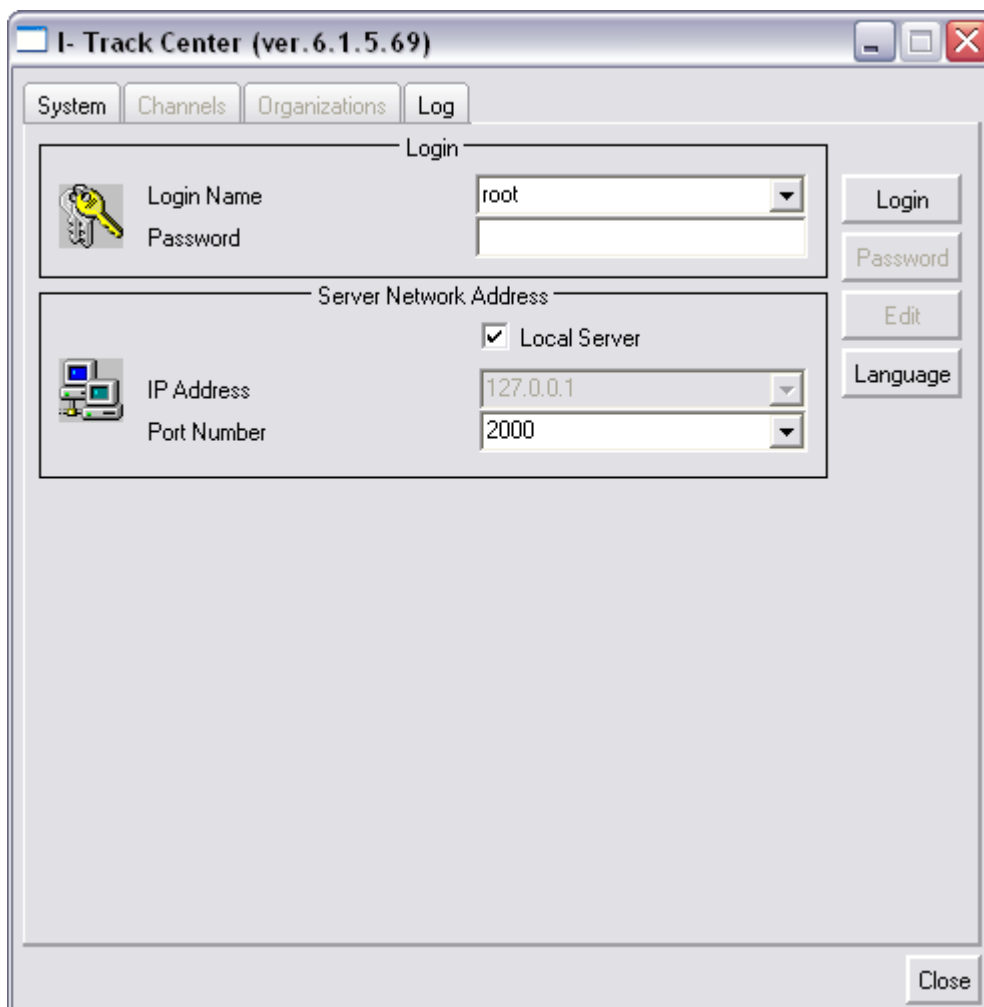


Figure 18. System window

Enter Login Name and Password. If this is the first time you have accessed the Control Center, enter “ root” for Login Name (in lower case - without the quotes) and leave the Password blank.

Click the tick box “ Local Server” if the radio/server is connected to the same machine. If the Control Center is not on the same machine, un-tick the “ Local Server” box and enter the IP Address of the machine the Server is installed on.

Enter the Port Number. The default is 2000.

To change the language of the I-Track Control Centre click the **Language** button the following window will be displayed



Figure 19. Select Language window

Select a language from the languages available in the drop down box. Click **OK** to save new language, the following window is displayed.

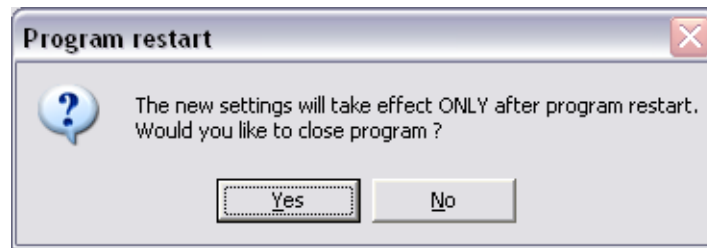


Figure 20. Program restart window.

Click **Yes** to restart program, the I-Track control centre will then be shut down and need to be restarted. When restarted, the control centre interface will be displayed with the language selected.

Click the **Login** button to log in to the Control Center.

The Control Center is now started.

7.2 System

The following window is displayed.

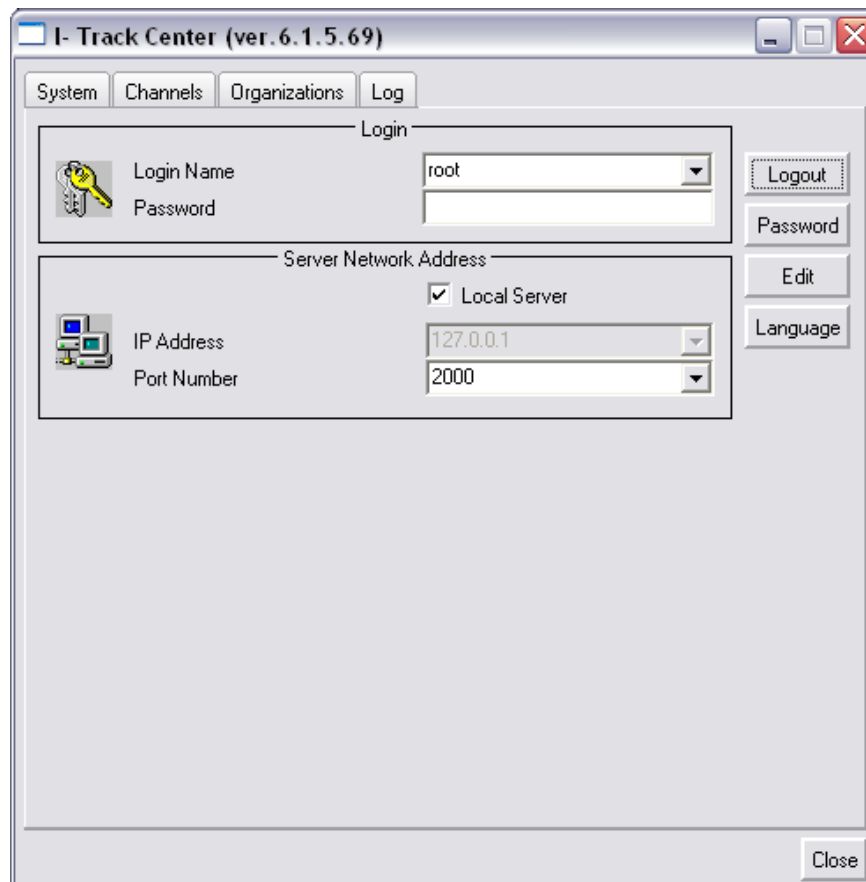


Figure 21. System window

The system window allows the Supervisor to log in to (or out of) Control Center.

7.3 Channels

Click the **Channels** tab. The following window is displayed.

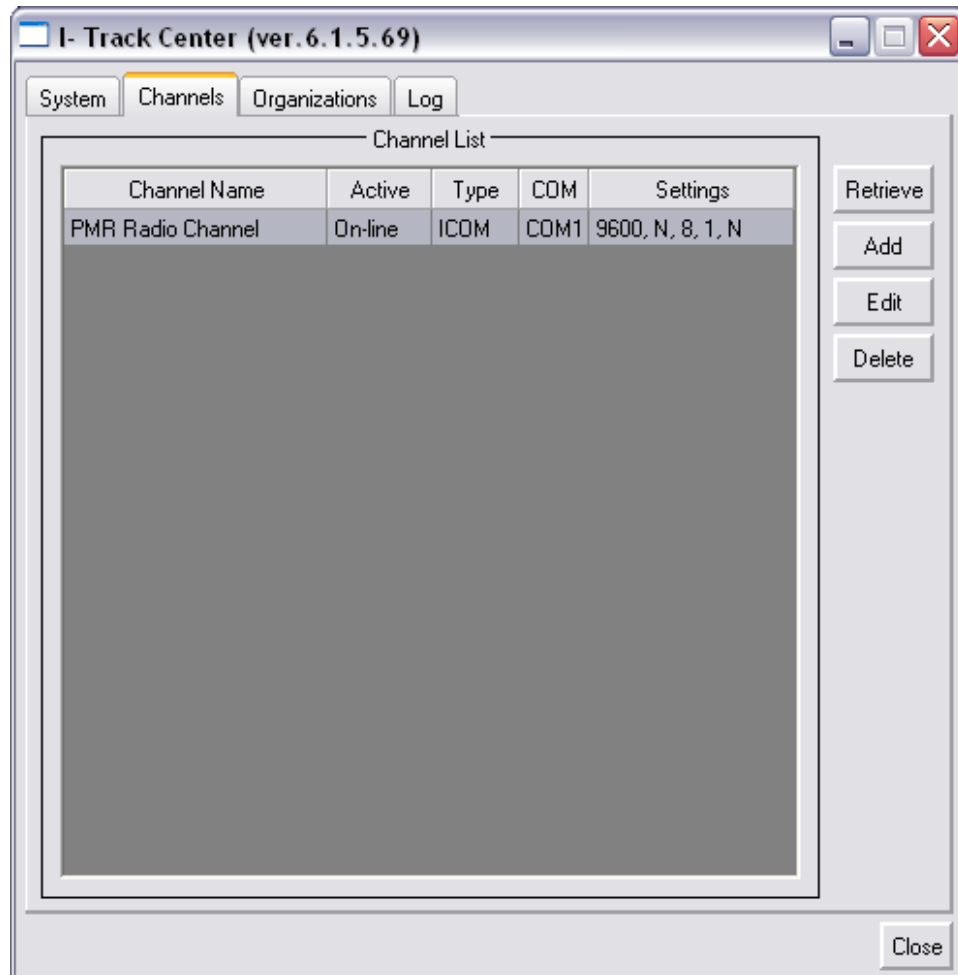


Figure 22. Channels window

The Channels window allows the Supervisor to add/edit the COM port settings for the Server and to edit the base/client timings.

Click/highlight the channel you wish to Edit. Click **Edit** to change the COM port settings. The following window is displayed.

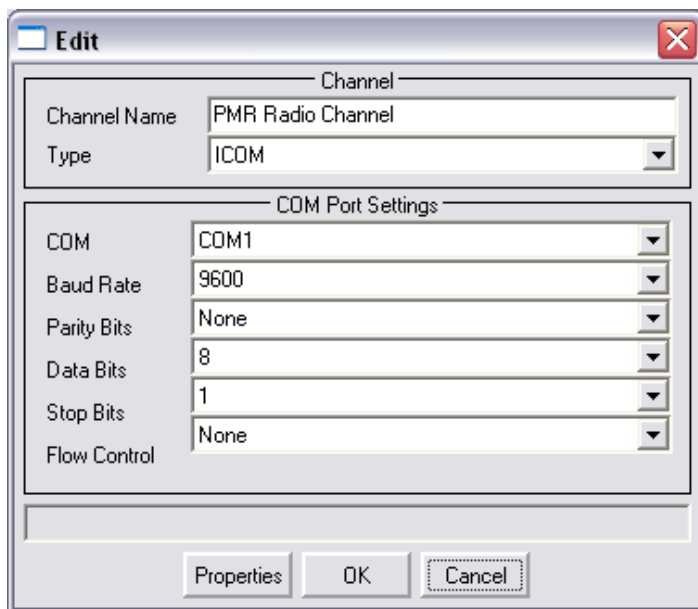


Figure 23. Edit Channel window

Type/edit Channel Name if required.

Type must always be set to ICOM if an F1610 is used as the base.

The COM Port settings above are the standard settings, which should be left as shown.

Click **OK** to save changes to Com Port Settings or Click the **Properties** button to edit radio timings. The following window is displayed.

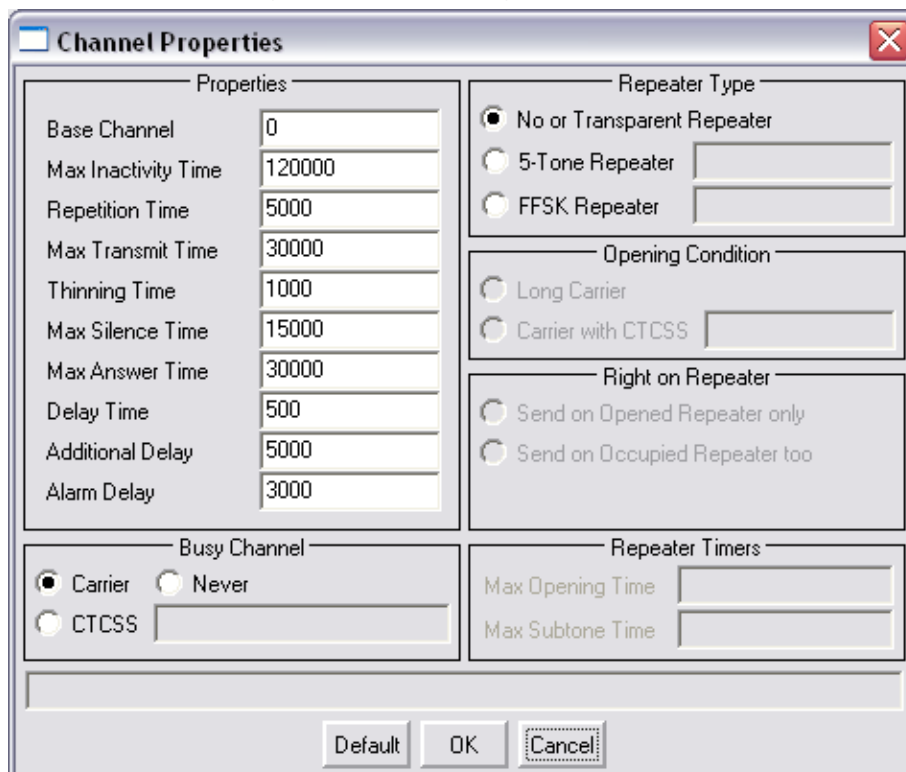


Figure 24. Channel Properties window

7.3.a To edit Channel Properties (advanced)

Consultation with your supplier is recommended before altering these parameters.

- ? **Base Channel.** This option allows the I-Track system to control the operating channel of the base station. Any channel can be entered in the range 0-256, if 0 is entered, the base station channel can be changed using the channel UP/DOWN keys on the F1610 base (if more than one channel is programmed). If a number in the range of 1-256 is entered and the base station channel were changed using the channel UP/DOWN keys, the I-Track system will force the base to the channel entered here.
- ? **Max.Inactivity Time.** This is the maximum inactivity time on the system, i.e. no calls sent, no calls received, no transmit, no GPS data received. If this timer expires, the I-Track system sends a check message to the base to make sure the system is still communicating with the base station. If no ACK (acknowledgement) is received, a Black LED will be shown on the channel status window, indicating that the channel is not ready or that communication has been lost. Default = 120 Seconds.
- ? **Repetition Time.** This is the time interval between the I-Track system sending another message to the base station to see if it is alive. Commands will be sent periodically to the COM port when the time interval equals that set in the Repetition Timer. Default = 5 Seconds.
- ? **Max.Transmit Time.** This setting determines the maximum transmit duration of a call initiated by the user. Default = 30 Seconds.
- ? **Thinning Time.** This option timer is used to reduce the quantity of messages sent on the network when the Server and Client programs are not on the same machine or where extra clients are on the network. This can be tailored to allow for the amount of bandwidth available to remote clients and how much traffic is carried on the network. Default = 1 Second.
- ? **Max.Silence Time.** The maximum time allowed for an open audio channel with no traffic, after which the audio path will be closed. Default = 15 Seconds.
- ? **Max.Answer Time.** The Max. Answer Timer is the period during which Send State Machine waits for an answer to outgoing commands (text, status, GPS request, or call). On expiry, a "Timer Expired" message will be displayed on the Client screen. Default = 3 Seconds.
- ? **Delay Time.** This timer is used to inhibit call functions and automatic polls after some activity on the system. This is set to stop automatic polls being sent as soon as the channel is free, otherwise if a mobile and base were in conversation, each time they de-keyed, a poll could be sent when any automatic poll timer for a vehicle had expired. Default = 2 Seconds.
- ? **Additional Delay.** This timer starts after the Delay Time and is used to set priority on automatic polls or data commands. If set to 0 the Automatic poll has a higher priority than a manual data command or manual poll.

- ? Alarm Delay. This timer starts once an alarm call has been received, and determines how long the I-Track system will wait for the GPS position to be received before sending a reset message to the vehicle, to stop alarm messages from being repeated.
- ? No or Transparent Repeater. This option needs to be enabled if no 5 Tone or FFSK repeater is used on the system.
- ? 5 Tone Repeater. This option needs to be enabled if a 5 Tone repeater is used on the system. If enabled, a Selcall string needs to be entered to open the repeater from the base.
- ? FFSK Repeater. This option needs to be enabled if a FFSK repeater is used on the system. If enabled, an FFSK string needs to be entered to open the repeater from the base.
- ? Open Condition. If 5 Tone or FFSK repeater has been selected, either the “ Long Carrier” or “ Carrier with CTCSS” option needs to be selected.
- ? Right on Repeater. If 5 Tone or FFSK repeater has been selected, either “ Send on Opened Repeater only” or “ Send on Occupied repeater too” must be selected.
- ? Repeater Timers. If 5 Tone or FFSK repeater has been selected, two additional timers can be set. These are “ Max Opening Time” and “ Max Subtone Time”.
- ? Carrier. If selected, call functions are inhibited while the base station is receiving a carrier on its receive frequency.
- ? CTCSS. If selected, call options will be inhibited when the base station receives an invalid CTCSS code but will be enabled if the correct CTCSS is received. Important: Incorrect setting of this option can effectively disable your system. Advice from your installer/dealer is recommended.
- ? Never. If selected, the base call functions will never be inhibited by a received signal, but will still be subject to the delay timer and additional delay function.

7.4 Organisations

The Organisations window allows the Supervisor to view or edit the Administrator's name/password and Rights on Channel.

Click the **Organisations** tab. The following window is displayed.

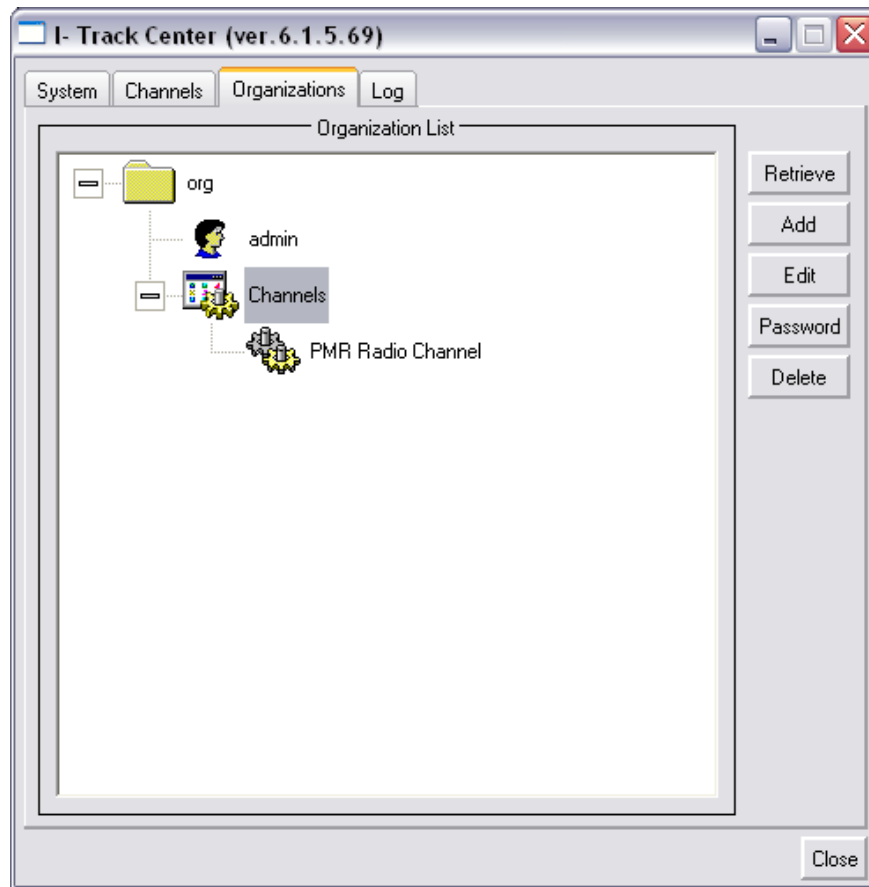


Figure 25. Organisations window

7.4.a To add an Organisation and Administrator

Click the Organisations tab, then click the **Add** button. The following window will be displayed.

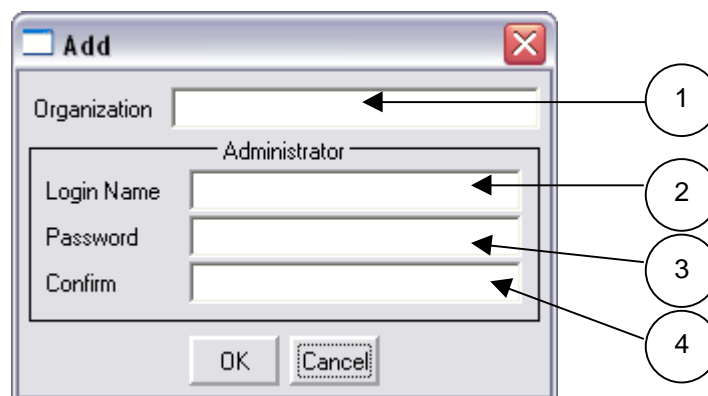


Figure 26. Add Organisation window.

Enter a name for your Organisation in the text box (1), up to 32 characters. This field is case sensitive.

Enter a name in the Login Name in the text box (2), up to 16 characters. This field is case sensitive.

Enter a password in the Password text box (3), up to 16 characters. This field is also case sensitive.

Re-enter password in the Confirm text box (4).

Click the **OK** button to save.

Note: Only one organisation with the same name can be added.

Now the organisation and administrator have been added you must add a channel to use.

7.4.b To add an Administrator to a Channel

Click the **Organisations** tab, you should see the organisation and administrator you entered earlier in the Add Organisations section of this chapter (4.1.d, To add an Organisation and its Administrator, on page 19).

Click the **Edit** button the following window will appear.

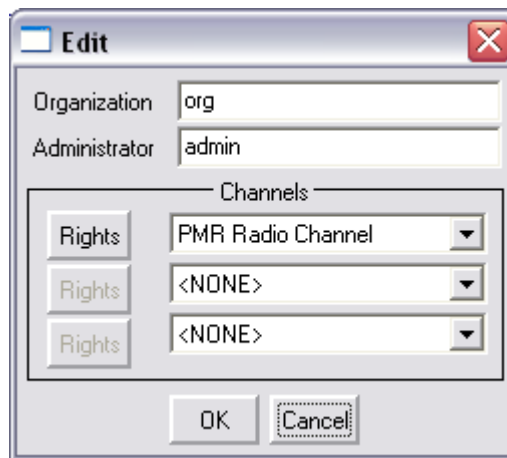


Figure 27. Edit Channel/Rights window.

Select the drop down button under channels. The following window is displayed.



Figure 28. Edit Channel/Rights window.

Select the channel name you entered in the previous section (Add Channel) in this chapter (4.1.d, To add an Organisation and its Administrator, on page 19), e.g. PMR channel.

Then click **OK** to save the changes.

7.5 Log

The log menu is a handy utility which enables you to view the raw data on the COM port. Click the **Log** tab. The following window is displayed.

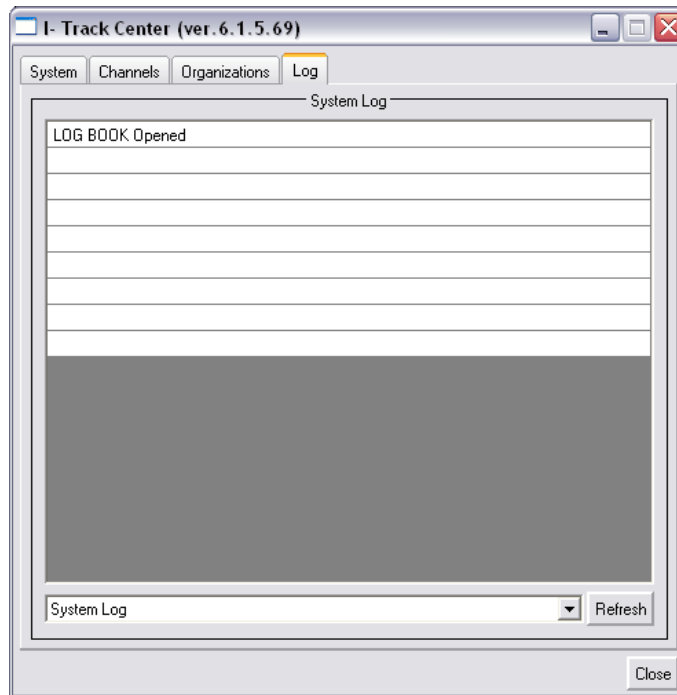


Figure 29. I-Track Center Log window

Select the kind of log information required from the drop-down box and click **Refresh** to display the data. The following window is displayed.

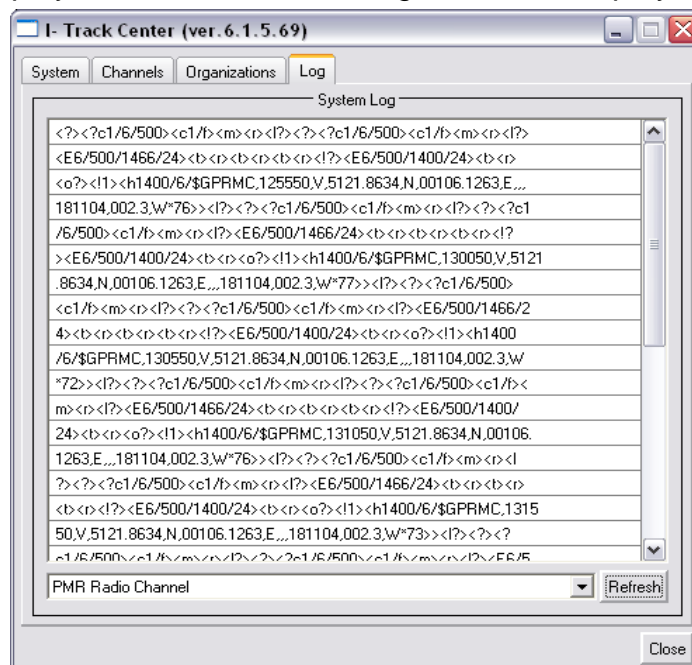


Figure 30. I-Track Center Log window showing serial data

7.5.a To close Control Center

Click **Close** on the Log window.

Part Five - I-Track Client

Chapter 8 - Client Overview

Welcome to the I-Track Client application. In combination with the ITrack Server, the Client software is a multi-faceted vehicle-tracking tool that gives you the power to monitor vehicle motion on a customised, zoom-able map of their area(s) of operation. The Client reads vehicle data from the Server databases and displays the information in a clear, flexible format, allowing you to view and analyse the data to suit your needs.

8.1 Current Data

Using the I-Track Client, you can graphically display a variety of real-time information about the vehicles you are tracking including:

- ? Vehicle ID numbers
- ? Icons
- ? Brief Vehicle Descriptions
- ? Dates
- ? Times
- ? Vehicle Tracks
- ? User Defined Routes
- ? Vehicle History
- ? Status of vehicles

8.2 Historical Database

The I-Track Client's internal History Manager allows you to review historical vehicle data for the current day, previous days, months and years from saved data in the daily log files.

8.3 Route Planning

Note: Route Planning is not implemented in version 6.1.5 of I-Track.

The I-Track Client lets you define routes that your vehicles are meant to follow. By setting individual Waypoints in a route as bus stops, you can determine if and when vehicles pass within a specified radius of those points.

8.4 Multiple Views

The Client allows multiple views of the vehicles you are tracking. By default, all of the vehicles appear together in one window, showing their relative positions, etc. Using the Client's Window Setup function, however, it is possible to attach each vehicle to its own window, allowing the user to focus on a selected subset of vehicles. In addition, you can tile all of the windows and monitor the vehicles simultaneously.

8.5 Flexibility

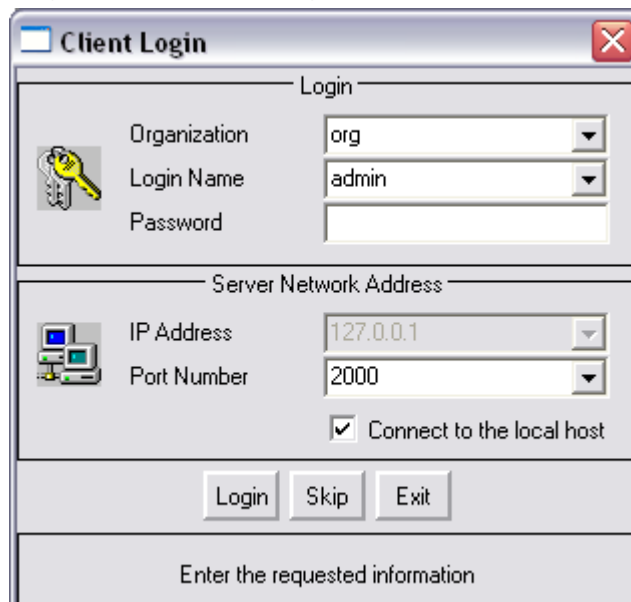
The I-Track Client software is a flexible, user-friendly application. All functions are mouse and menu driven, making it accessible to users who have little prior knowledge of vehicle tracking systems.

8.6 Starting the Client

Note: The I-Track Server must be running before the Client is started (Part Two -4.1.a), unless vehicle tracking is not required, i.e. to configure the Client, in which case press **Skip** on the following window to bypass Server connection.

8.6.a To start the Client software

From the Windows Start Menu select **Programs**, and **AvMap**. Then click **Client** and **Client** again. The following Window will appear.



Login	
Organization	org
Login Name	admin
Password	

Server Network Address	
IP Address	127.0.0.1
Port Number	2000
<input checked="" type="checkbox"/> Connect to the local host	

Buttons: Login Skip Exit

Enter the requested information

Figure 31. Client Login Window.

Enter your Login Name and Password.

To connect to the local host (I-Track Server is running on THIS machine) check the tick-box (it may already be checked). To connect to a different

host (I-Track Server is running on some other machine), uncheck the tick-box and enter the IP Address and Port Number of that host.

Click **Login** (or **Exit** to quit Client Login).

Note: Only one person may be logged in as the Administrator of an Organisation at one time.

8.7 Client Software Overview

When you log in to the system, a window with the cartography of your area, as saved in the previous session, will appear, except for the very first time you log on, when the system does not yet know where your vehicles operate.

The cartography window contains 8 menus, 23 toolbar buttons and the main chart window (see following figure). In addition, a channel readiness message will appear in the centre of the screen when the Client is first logged in. If the base station is switched 'ON' and serial lead connected it should display "OK. Channel ready". If not it will display "Error. Check base station is ON and serial lead connected". You may optionally request the check again or cancel the request.

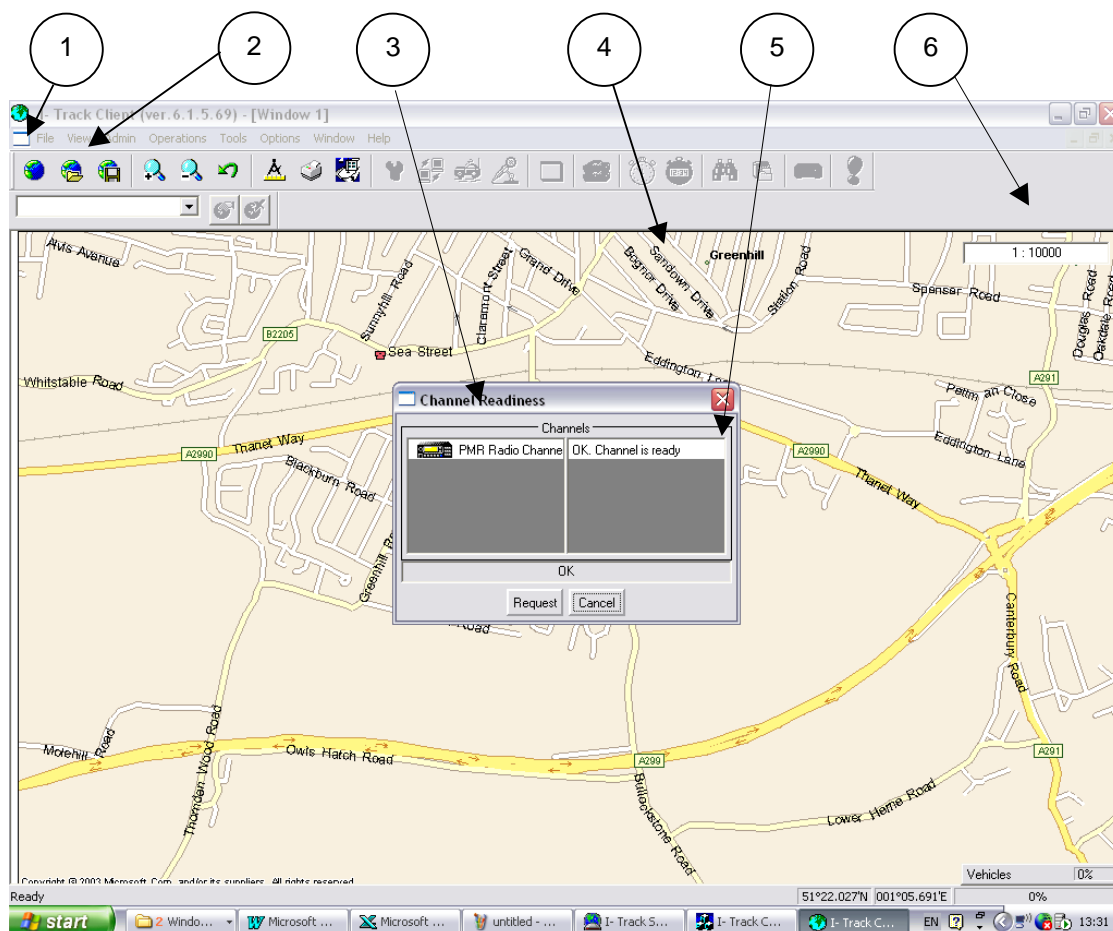


Figure 32. View upon startup. The chart will be specific to your area after the software is restarted.

1. Menu Bar

2. Toolbar
3. Channel Status
4. Main Chart Window
5. Channel ready/error message
6. Zoom IN/OUT

8.8 The Client menus

? File	Alt+F
? View	Alt+V
? Administration	Alt+N
? Operations	Alt+O
? Tools	Alt+T
? Options	Alt+P
? Window	Alt+W
? Help	Alt+H

See the remainder of this Part of the manual for detailed descriptions of the menus and their functions.

Beneath the menu bar is the toolbar with twenty-three buttons that provide shortcuts to commonly used functions found in the menus. Refer to Part Five -Chapter 18 -, page 116 for descriptions of their function.

The main chart window shows a zoom-able, detailed map in which you can display:

- ? Vehicle icons
- ? Descriptions
- ? Tracks
- ? Dates
- ? Times
- ? User-defined routes**
- ? Vehicle History
- ? Map Push Pins
- ? Vehicle Status information
- ? Last Status received
- ? Emergency Calls

** This feature is not fully implemented in version 6.1.5 of ITrack

Along the bottom edge of the window is the status bar (not shown in the preceding figure), which shows the latitude and longitude of the cursor position. Select the Status Bar option from the View menu.

8.9 General Information

To centre any point in the chart window, simply click on that point. The Client software will redraw the chart so that the point you selected is in the centre of the window.

The eight menus on the menu bar control a variety of functions. The rest of this chapter gives detailed descriptions of these.

To the right of many of the menu items are key combinations, which bypass the menus and open functions directly. (For example Ctrl+S, press and hold the <Ctrl> key and press the S key, saves the current map view.)

Note: Many menu items open new windows in the lower portion of the window or along the top right hand side. These new windows do not need to be closed before opening others, they layer on top of one another with index-card tabs for navigation.

8.9.a To exit the Client program

There are two methods of closing the Client software:

- ? Click **File**, then **Exit**; or
- ? Click on the X at the top right-hand corner of the program window.

On closing, you will be asked whether the current view should be saved. Click **Yes** to save the current view as a Bookmark, or **No** to exit without saving.

Note: Next time this user logs in, the map will be presented at this last-used position and scale, regardless of the choice made above. The option to save as a Bookmark is additional, and should be taken if the view will be frequently required and is not currently available as a Bookmark.

Chapter 9 - File menu

? New	Ctrl +N
? Open...	Ctrl +O
? Close	
? Save	Ctrl +S
? Save As...	
? Print	
? Exit	

9.1 New

This option allows a new map view window to be opened in the I-Track Client application. Each time "New" is selected, another map window is opened for multiple map viewing. Also, see information on the Window menu (page 108) for different display options for multiple maps.

9.2 Open

This option allows a user to open a previously saved map view. These are stored as "*.ovb" file types. In addition, the I-Track client can display custom maps modified with Microsoft Map Point 2002 "*.ptm" files types. After the user had made changes to map by adding attributes, graphically objects, pushpins etc. in Map Point 2002 and saved map.

9.3 Close

Closes the current map view.

9.4 Save

Saves the current map view as a Bookmark "*.ovb" file, which can be re-opened when required.

9.5 Save As

The following window appears when selected:

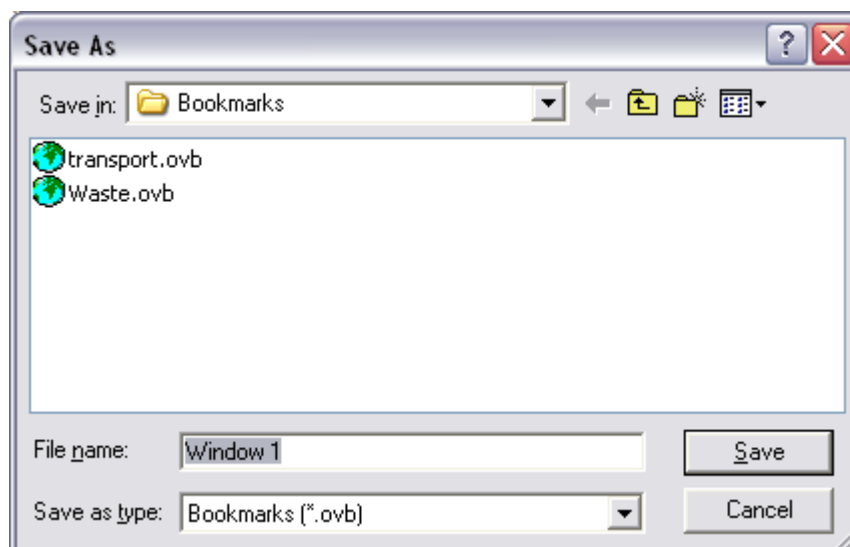


Figure 33. "Save As" dialogue.

Saves the current map view Bookmark as another "*.ovb" file, which a user can name, and which can be re-opened when required.

The current map view can also be saved as an image (*.bmp or *.jpeg), perhaps as 'evidence' of some route deviation, anomaly or error condition requiring later investigation.

9.6 Print

This option allows the user to print the map view that is currently displayed. When this option is selected the following print view window will be displayed.

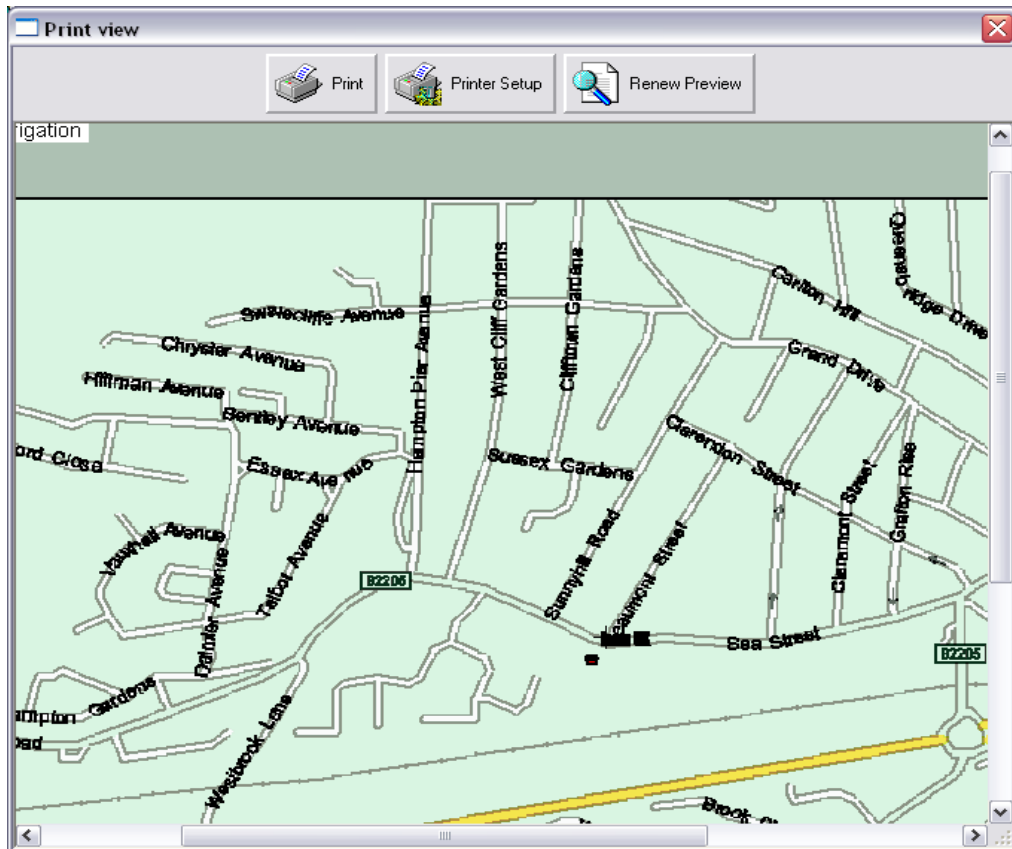


Figure 34. Print view window

To see more detail, zoom in by clicking the left mouse button. Click the right mouse button to zoom out.

From the Print View window the user can select Printer Setup to set the printer parameters, the following window will appear.

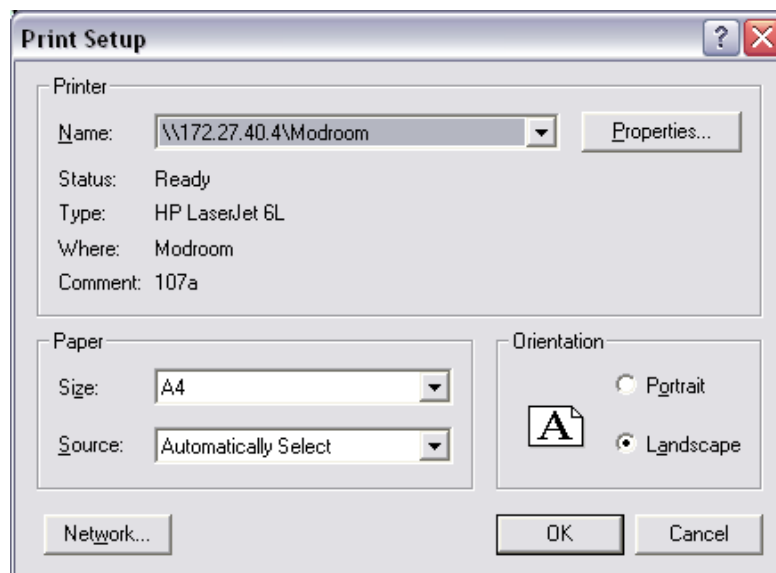


Figure 35. Print Setup screen

The user can select the printer required, paper orientation etc. Clicking the **OK** or the **Cancel** buttons will return to the Print View window.

Note: A Printer needs to be installed on the PC for the Print Setup window to appear.

Selecting Renew Preview will renew the map if it has been changed.

Selecting Print will print the selected map view.

9.7 Exit

The exit option closes the I-Track Client application.

Chapter 10 - View menu

- ? MapPoint Data
- ? CM93 v.3 Data
- ? NT + Data
- ? ZuluLib Data
- ? Mercator Projection
- ? Orthographic Projection
- ? LatLon Projection
- ? CM93 v.3 Properties
- ? MapPoint Properties
- ? Zulu Properties
- ? Zoom In F6
- ? Zoom Out F5
- ? Set Scale...
- ? Go To Position...
- ? Main Toolbar
- ? Status Toolbar
- ? Push-pin Manager

10.1 MapPoint Data

This option needs to be selected (have a tick against it) if you wish to display this cartography in I-Track. MapPoint Data needs to be installed as a separate install CD.

10.2 CM93 v.3 Data

Some default CM93 cartography is installed during I-Track installation, this has very little detail, but can be used for testing if no other data is available. This needs to be selected (have a tick against it) to be used.

10.3 NT + Data

NT + Data can be used in I-Track, this needs to be copied to a unique directory and registered to be able to be viewed by I-Track.

10.4 ZuluLib Data

This data is MapInfo data, in Mapinfo Interchange Format (MIF). This data first needs to be imported, see Zulu Properties_ import from MIF section.

This needs to be selected (have a tick against it) to be used.

10.5 Mercator Projection

Mercator Projection is the default projection for CM93 v.3 Data.

10.6 Orthographic Projection

Orthographic Projection is the default projection for Microsoft MapPoint data. Orthographic Projection of vehicle icons is more accurate than Mercator Projection. Both of these are necessarily approximations of the spherical surface of the earth, displayed on an essentially flat or two-dimensional medium. The difference between the two display methods is typically very small and is only an issue for I-Track systems with a very large area of coverage (200km or more) or where vehicles approach the Earth's North or South geographic poles. This option is grayed out as Orthographic Projection has been implemented as the default projection used in I-Track.

10.7 LatLog Projection

LatLog Projection is the default projection used for the ZuluLib when displaying MIF data.

10.8 CM93 v.3 Properties

There are various sub-menus within CM93 v.3 Properties, these will not be covered in this manual as it is unlikely that this data would be used.

10.9 Map Point Properties

10.9.a Find

This option is used for locating places on the map within Europe. Options available for finding locations are as follows:

Address/Street name/City/Post code or Place

Click **View**, then **MapPoint Properties**, and then **Find**. The following window will appear.

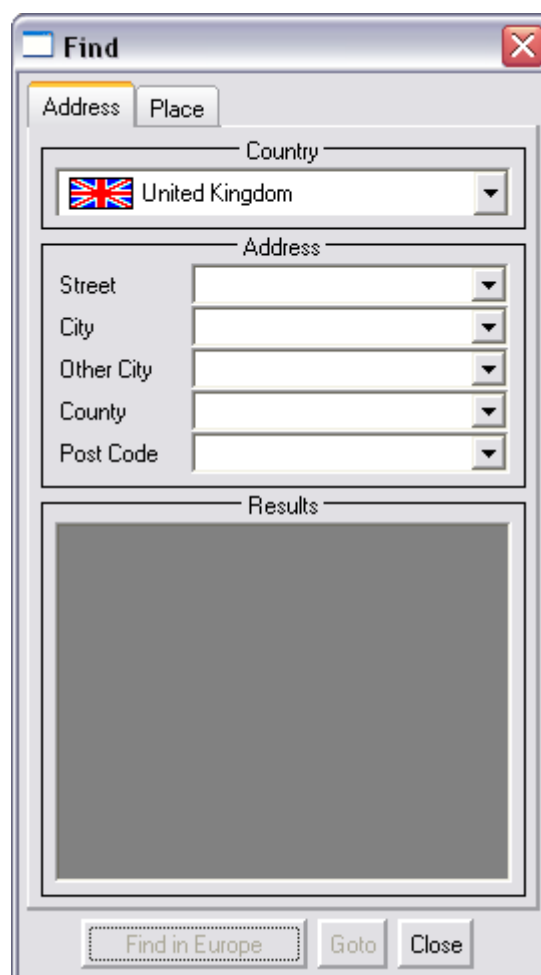


Figure 36. Find Window.

Enter details of address and then click **Find in Europe** button. Highlight the correct address in the result box and then click the **Go to** button. The map will re-centre on that address.

Click **Close** to exit the find window.

10.9.b MapPoint Type...

This option is used for selecting either MapPoint Europe or MapPoint North America.

Click **View** then **MapPoint Properties** and then click **MapPoint Type...** The following window will appear.

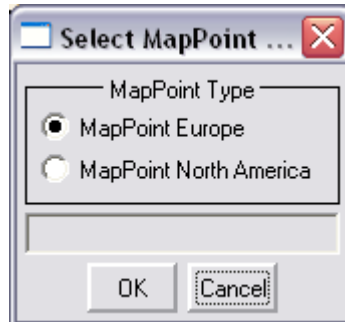


Figure 37. MapPoint Type window.

Select the other MapPoint map required and then click **OK** or **Cancel** to exit.

10.9.c Real-Time Delay

This option is to delay the incoming GPS for a set period before it is displayed on the map.

Note: If MapPoint 2004 is used, a real time delay is required. MapPoint 2004 licensing requires a copy of MapPoint 2004 license to be purchased for each vehicle tracked and no more than 50 vehicles can be tracked in real time. If a delay is set and real time data is not used, only one copy of MapPoint 2004 need be purchased and multiple vehicles may be tracked.

Click **View** then **MapPoint Properties** and then click **Real-Time Delay**. The following window will appear.



Figure 38. Real Time delay window.

Click the Enabled tick box and enter a time, in seconds, for the delay. Click **OK** to save the changes or **Cancel** to exit.

10.10 Zulu Properties

10.10.a Import From MIF

For Mapinfo Interchange Format (MIF) data to be viewed in I-Track, they first have to be imported into I-Track.

Click **View** then **Zulu Properties** and then click **Import From MIF**. The following window will appear.



Figure 39. Import from MIF window.

Click the Assign button next to the Source window, the following window will appear.

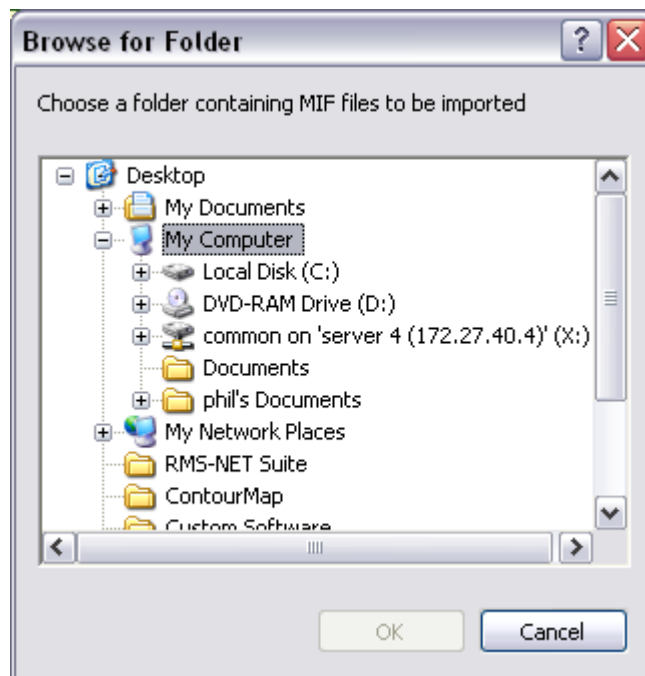


Figure 40. Select source MIF window.

Browse to the directory containing the MIF and MID files to import, then click **OK**.

Click the Assign button next to the Target window, this will default to the Zulu data directory. You can make sub directories from Zulu data directory if required.

Click **OK** to start the import process, this can take some time depending on how large the MIF files are. This will import of MIF files within this directory.

Note: There is no progress information on the import process at present, this will be added on the next I-Track release. But if you look at system processes it will be running at 100% until the import process has finished. This process may take a long time to finish, up to an hour, depending on the size of the data file.

10.10.b Layer Manager

Once the MIF data has been imported, it needs to be added by the Layer Manager.

Click **View** then **Zulu Properties** and then click **Layer Manager**. The following window will appear.

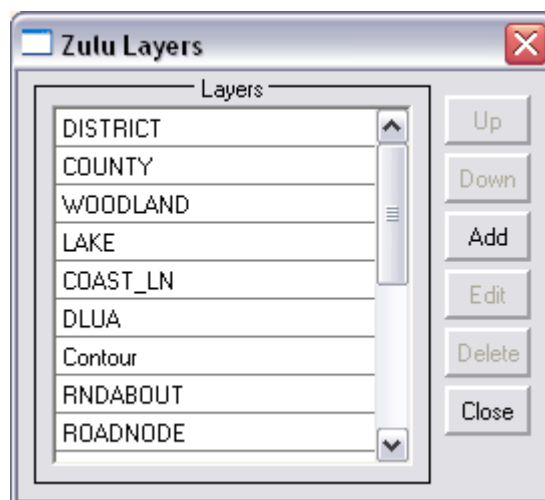


Figure 41. Layer Manager Window.

Click the **Add** button, the following window appears.

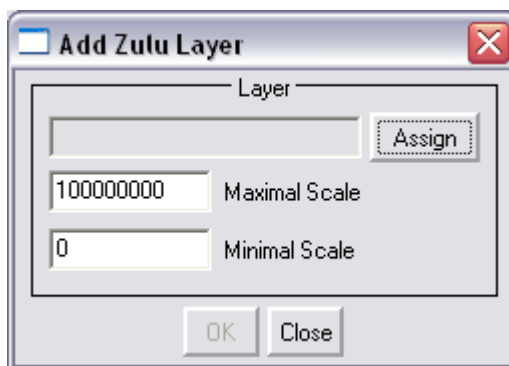


Figure 42. Add Zulu Layer window.

Click the **Assign** button, the following window will appear.

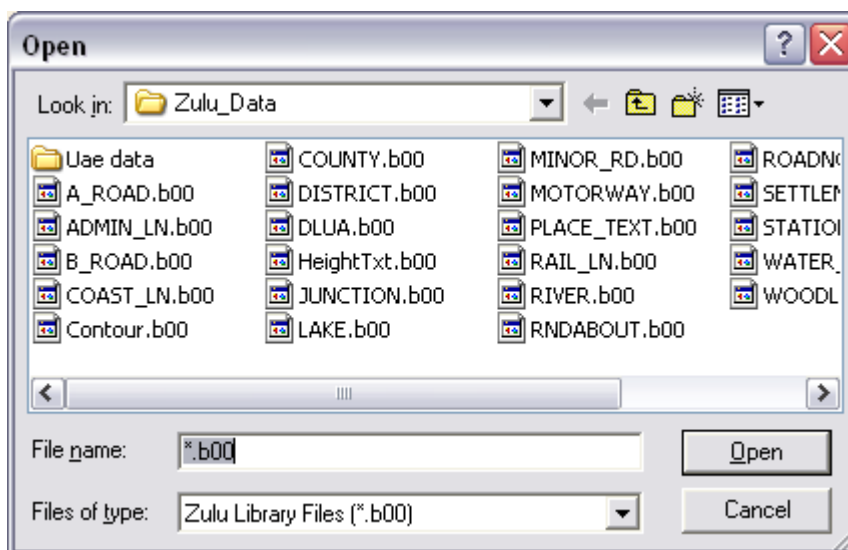


Figure 43. Select Assign Layer window.

Either double click on a layer e.g. A-Road.b00 or click a layer and then press **Open**, the following window will be displayed again with your selected layer.

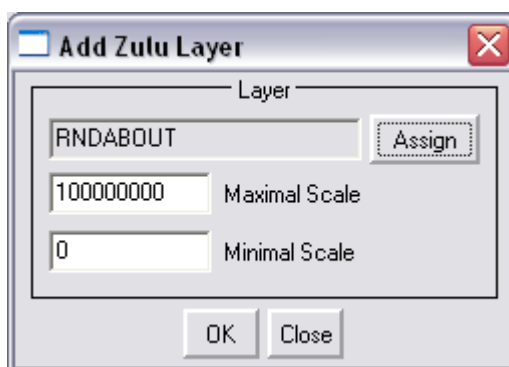


Figure 44. Layer Scale Window.

Click the **OK** button to have this layer of data viewable in every scale of map view. If you only want to view this layer of data above or below a certain scale enter the maximum and minimum scale you require.

Note: This can be easily changed if required by selecting layer and clicking the **Edit** button, then enter the new values required.

Repeat the above steps for each layer of data you wish to view.

Note: It is important to have the background layers added first, e.g. the urban areas, as all the layers below these will appear in the foreground on top of them.

To reassign the positions of layers, from the Layer Manager window select the required layer and then click the **Up** or **Down** button to move that layer in the required direction.

10.11 Zoom in (F6)

This function is used to magnify the map for more detail of a particular area.

10.12 Zoom out (F5)

This function is used to reduce the scale of the map to display a larger area on the display.

10.13 Set scale

This option can be used to select a particular scale of map detail. The following dialogue will appear once selected.

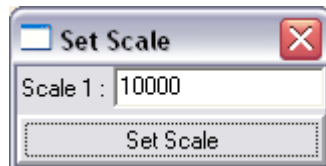


Figure 45. Set Scale dialogue

Enter scale required and click **Set Scale** to save. The map takes on the new setting and the Set Scale window closes.

10.14 Go to position

The following dialogue appears when selected:

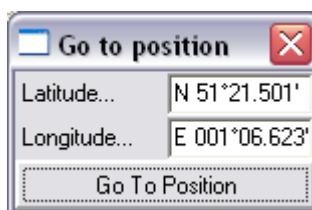


Figure 46. Go to Position dialogue

This option is used for entering the latitude and longitude of a position. Once entered, when the **Go to Position** button is pressed, the map will re-centre on that position.

10.15 Main toolbar

This option is used for turning on/off the main toolbar in the client application.

10.16 Status toolbar

This option is used for turning on/off the status bar at the bottom of the window.

10.17 Push-pin Manager

The Push-pin Manager allows an operator to add icons on the map at specific locations such as customer depots etc.

Click **View** then **Push-pin Manager**, the following window will appear.

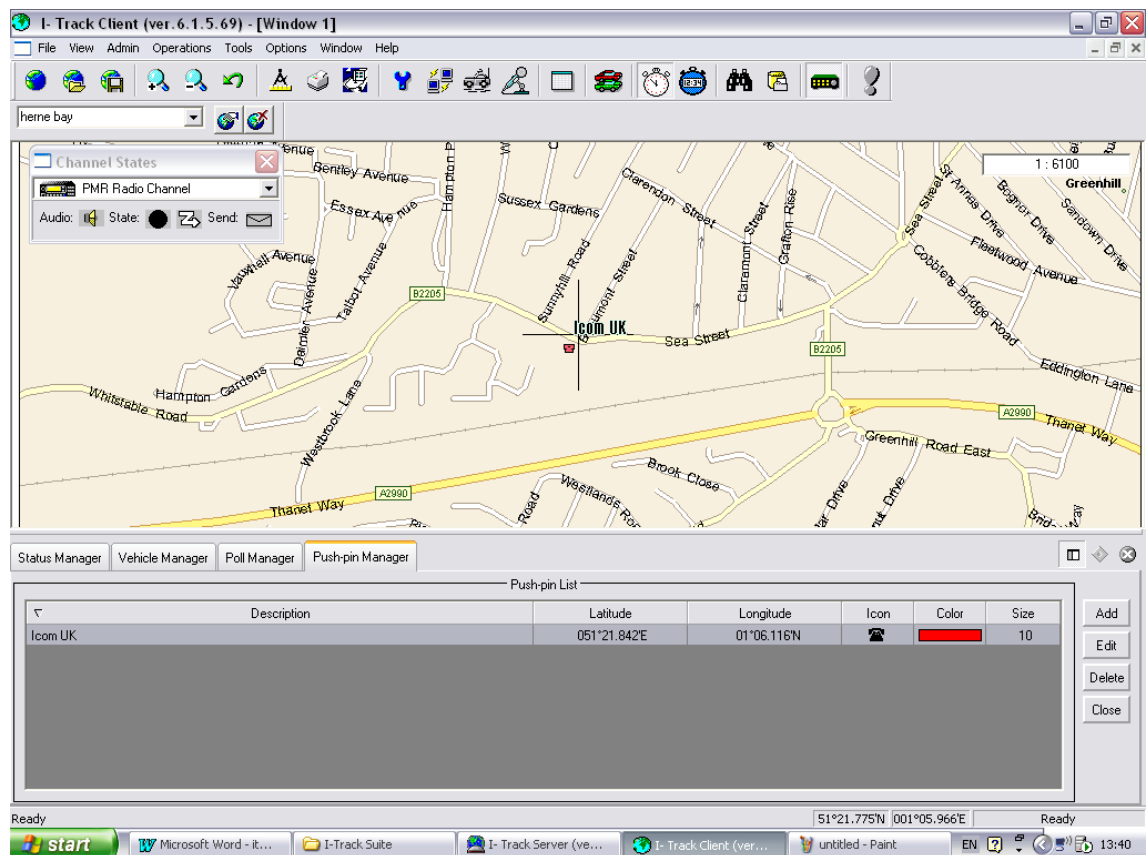
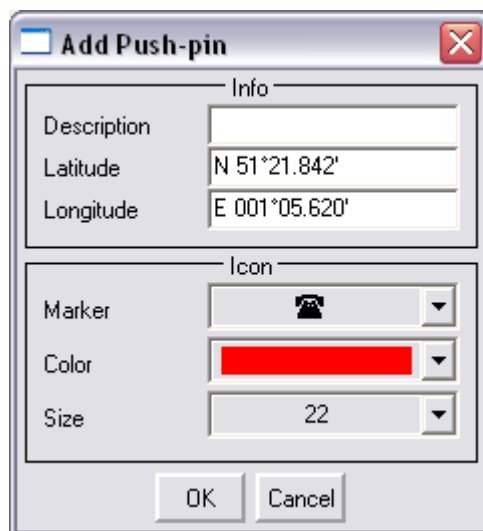


Figure 47. Push-pin Manager Window

Click on the map where the location for the push pin icon is required, the map will re-centre on this position. Click the **Add** button, the following window will appear.



Info	
Description	
Latitude	N 51°21.842'
Longitude	E 001°05.620'



Icon	
Marker	
Color	
Size	22

Figure 48. Add Push-pin window.

Add descriptive text, if required, to be displayed next to the icon, select the marker icon using the drop down box. Select the colour and the size for the icon using the drop down boxes, click **OK** to save the changes or **Cancel** to exit.

The icon will now be displayed on the map, repeat the above steps for each user icon required.

Chapter 11 - Administration Menu

- ? Vehicle Manager
- ? User Manager
- ? Status Manager

11.1 Vehicle Manager

Vehicle Manager allows you to add, edit, or delete vehicle settings.

Notes:

Only the Administrator may add, edit, or delete vehicles.

The Administrator will use Vehicle Manager in conjunction with User Manager, Status Manager and Route Planning.

11.1.a To open Vehicle Manager:

Click **Administration**, then **Vehicle Manager**. The Vehicle Manager Window will appear in the lower portion of the Client's main window.

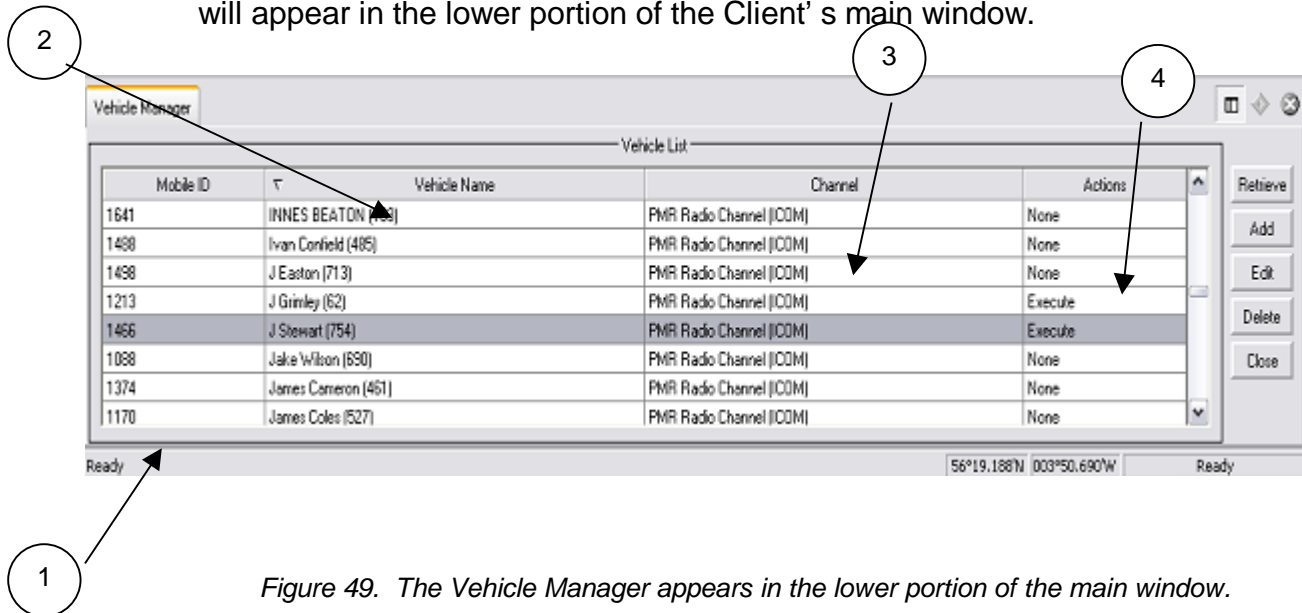


Figure 49. The Vehicle Manager appears in the lower portion of the main window.

1. Mobile ID number
2. Vehicle Name/description list
3. Channel list
4. Vehicle Actions for status

11.1.b To add a new Vehicle:

Open Vehicle Manager.

In the Vehicle Manager panel, click **Add**. The following Edit Vehicle window will appear.

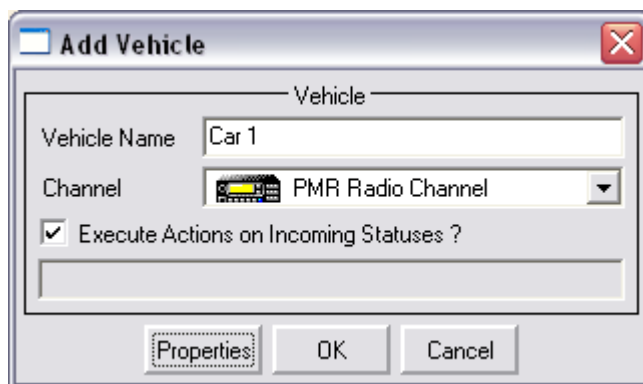


Figure 50. Edit vehicle window.

In the Vehicle Name panel, enter a description of the vehicle. Descriptions may be up to 32 characters in length, including spaces.

The “Execute Actions on Incoming Statuses ?” needs to be ticked if automatic polling is required to be enabled and disabled by status messages.

Enter the FFSK ID of the vehicle radio in the Properties option tab. This must be in the range of 1000~3999, the following window will appear.



Figure 51. Vehicle Properties window.

The Handheld tick box can be selected if required. This can be useful for differentiating between handheld and mobile ID's in the various I-Track menu's there

Notes:

- ? The FFSK ID will be provided by your dealer/installer and uniquely identifies each mobile radio in your fleet.
- ? FFSK IDs below 1000 are reserved for base stations and repeaters, and are not of interest here.
- ? IDs from 4000 to 4095 are reserved for group calling (making "broadcasts" to definable groups of mobiles).

If the ID entered is already in use, an error message is displayed.

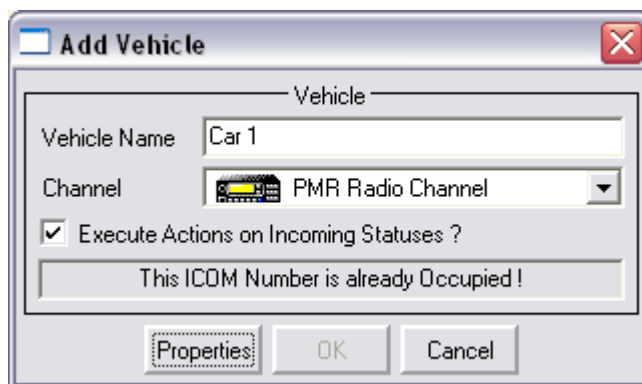


Figure 52. Vehicle ID already in use

If this occurs, click the **Properties** button and re-enter the correct FFSK ID.

Select the Channel ID number/description of the communication channel associated with this vehicle. If necessary, open ITrack Control Center (Part Four - I-Track Control Center on page 30) to find the Channel ID number.

To save the new vehicle settings, click **OK**.

The new vehicle will appear in the list of vehicles in the vehicle manager window.

Restriction:

Vehicle IDs must be in the range 1000 to 3999.

11.1.c To edit an existing Vehicle' s data:

Open Vehicle Manager.

In the Vehicle List table, select the vehicle you want to edit.

In the Vehicle Manager panel, click **Edit**.

Make modifications in the Vehicle Data panel.

To save your changes, click **OK**.

After you click **OK**, you will see the vehicle in the Vehicle List table.

11.1.d To retrieve the most current Vehicle data from the database:

Open Vehicle Manager.

In the Vehicle Manager panel, click **Retrieve**.

Note: If there were any changes to the Vehicle list in the database, this action would retrieve the most recent information.

11.1.e To delete a Vehicle' s data:

Open Vehicle Manager.

In the Vehicle List table, select the vehicle you wish to delete.

In the Vehicle Manager panel, click **Delete**.

Note: This action cannot be undone.

11.1.f To close Vehicle Manager:

In the Vehicle Manager panel, click **Close** or click the X at the top-right of the Vehicle Manager window. Alternatively, deselect "Vehicle Manager" in the Admin menu.

11.2 User Manager

I-Track supports two types of user: the Administrator and Users. The Administrator has full access to I-Track whereas Users can monitor vehicles, but cannot change system settings. User Manager allows the Administrator to add, delete, or edit user data.

Note: Only the Administrator has access to User Manager.

11.2.a To open User Manager:

Click **Administration**, then **User Manager**. The User Manager Window will appear in the lower portion of the Client's main window.

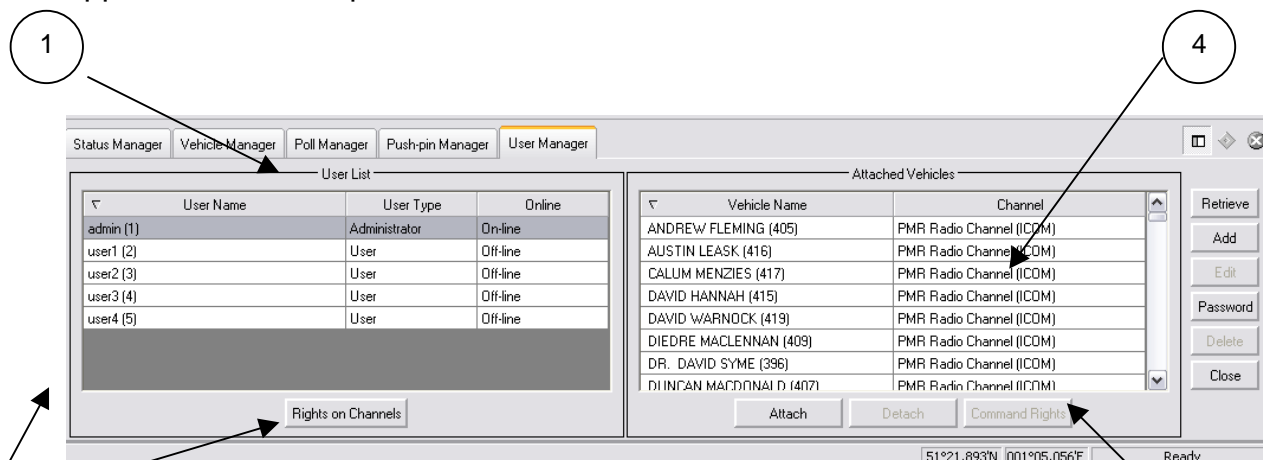


Figure 53. User Manager appears in the lower portion of the main window.

1. User List panel
2. User rights on the channel
3. Vehicle command rights
4. Vehicles attached to user

11.2.b To add a User:

Open User Manager.

In the User Manager panel, click **Add**. The following window is displayed.

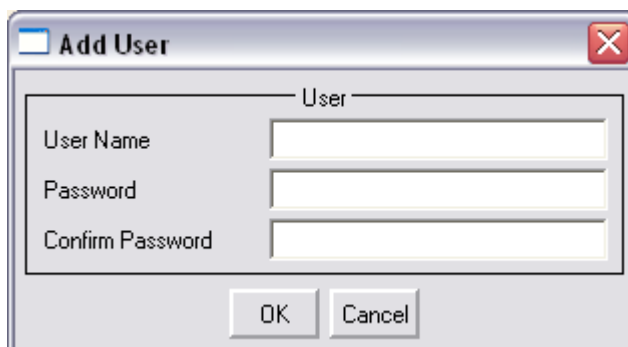


Figure 54. Add User window.

In the User Name panel, enter a Login name of up to 16 characters.

Enter a Password of up to 16 characters.

Re-enter the Password in the "Confirm" box..

To save the new user information, click **OK**.

Notes:

- ? User rights: Only the Administrator has full access to I-Track. Users can monitor vehicles, but cannot change system settings.
- ? After you click OK, you will see the new user added to the User Listtable. If there are any errors, you will see a message stating the problem.

Restrictions:

Users and the Administrator must have unique Login names.

Users and the Administrator must have passwords.

Login names and passwords can be up to 16 characters in length. They are case sensitive and may contain digits and spaces.

11.2.c To edit a User or Administrator' s data:

Open User Manager.

In the User List, select the User/Administrator to be edited.

Click **Edit**, the following window is displayed.

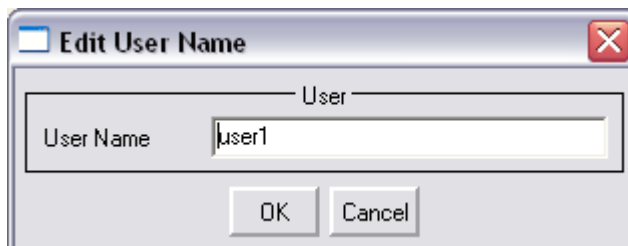


Figure 55. Edit User window.

Make modifications to the User name.

To save the modifications, click **OK**.

11.2.d To delete a User:

Open User Manager.

In the User List, select the User to delete from the system.

Click **Delete**

Note: This action cannot be undone.

11.2.e To retrieve the most current User data from the database:

Open User Manager.

Click **Retrieve**.

Note: If there were any changes to the User list in the database, this action would retrieve the most recent information.

11.2.f To assign User Rights on Channel

This option enables/disables the microphone rights for a User.

Open User Manager.

Click **Rights on Channels**. The following window appears.



Figure 56. User Rights on Channels window.

When you click the **Rights** button the following window appears.



Figure 57. Rights on Icom Channel window.

Enable the Microphone tick box if the user is local to the F1610 base station. Click **OK** to save changes.

Notes:

- ? The maximum number of channels for one organisation is three.
- ? For every channel, the microphone can be assigned to only one client for all Organisations. This is automatically monitored by the program.

? The microphone rights are automatically assigned to the user who logs on locally to (at) the server.

11.2.g To attach a Vehicle to a User

This feature allows certain vehicles to be assigned to certain users. Open User Manager, and then from the user list, select the required user. Click **Attach**. The following window will appear.



Figure 58. Attach Vehicle to a User window.

Select the vehicle you want to attach to the user from this list, and then click **OK** to save. Repeat the above for each vehicle you want to attach to a user. Alternatively, click the **Select** button to automatically attach all the vehicles to the currently selected user.

Note: A vehicle can be attached to a maximum of five users.

11.2.h To detach a Vehicle from a User

Open User Manager, then from the User list select the User and Vehicle you wish to edit.

Click **Detach**, the following window will appear.



Figure 59. Detach Vehicle from User window.

Click **Detach** to remove vehicle from a user or click **Cancel** to exit.

11.2.i To edit Command Rights

This feature sets the User Rights available for each vehicle from the following: Manual Poll; Automatic Poll; and Data Commands.

Open User Manager, then from the user list, select the user you wish to edit.

Select required vehicle from the Attached Vehicles list.

Click **Command Rights**. The following window will be displayed.

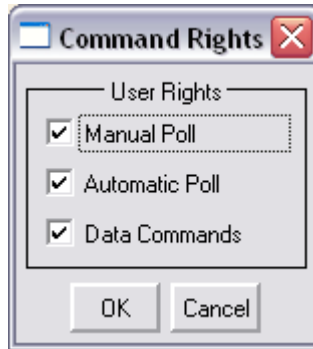


Figure 60. Command Rights window.

Click tick-boxes to enable the command functions appropriate to this user/vehicle.

Click **OK** to save or **Cancel** to exit.

11.2.j To close User Manager:

Click **Close** or click on the X button at the top-right of the User Manager window. Alternatively, select the Admin menu, and deselect the User Manager item.

11.3 Status Manager

The Status Manager allows an administrator to enter/edit the receive text and transmit text of status messages.

11.3.a To open Status Manager:

Click **Administration**, then **Status Manager**. The Status Manager window will appear above the Client's main window.

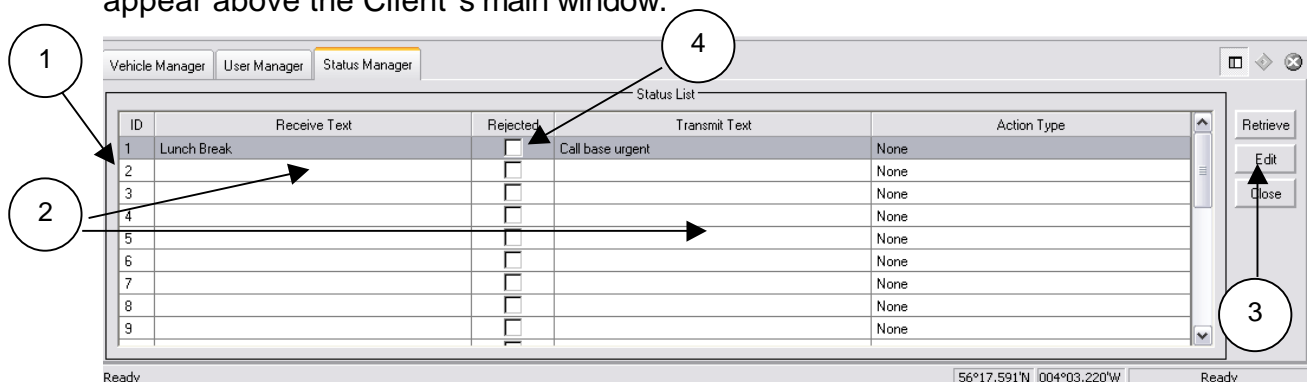


Figure 61. Status Manager window appears above the main window.

1. Status ID numbers.
2. Status Text
3. Edit button
4. Rejected

Select the status ID number/line you wish to add/edit text for. The line will become highlighted.

Click **Edit**. The following window will be displayed.

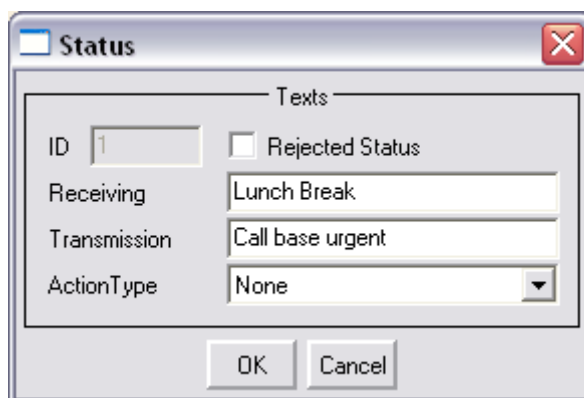


Figure 62. Status Edit Text window window.

Enter the text required for the received and transmitted status message. Click **OK** to save the status text or **Cancel** if you don't want to save the text. Select the **Rejected status** tick box if you don't want the status to be displayed. This option is useful for receiving new GPS position information sent with a status message but not updating the status of a vehicle e.g. ignition switch on.

Action Type can be set for the following :

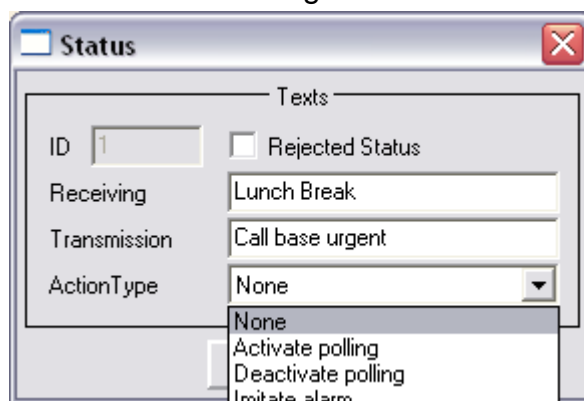


Figure 63. Status Action Type

Activate Polling; this will enable the automatic polling to be switched on if a status is received. The polling will only be enabled if a poll time has been set in poll manager for that particular vehicle. Status 23 is used by the radio by default for the radio on message.

Deactivate polling; this will disable the automatic polling if it was on when this status is received. Status 19 is used by the radio by default for the radio off message.

Imitate Alarm; BIIS radios by default send status 22, not the “v” command for an alarm call. By enabling this status I-Track will perform the normal emergency features as if a “v” message alarm was received.

Repeat the above steps for each status message required.

Note:

Status ID's 23 and 19 are normally reserved for ignition ON and OFF messages respectively. These need to be enabled on the PR1610TN mobile FFSK programming software.

11.3.b To close Status Manager

In the Status Manager panel, click **Close** or click on the X in the top-right corner of the window. Alternatively, select the Admin menu and deselect the Status Manager item.

Chapter 12 - Operations menu

- ? Log in to server... F2.
- ? Log out from Server
- ? Commands...
- ? Go To Vehicle...
- ? Last position request...
- ? History manager
- ? Incoming Status
- ? Last Received Statuses
- ? Call Window
- ? Send Command
- ? Poll Manager
- ? Alarms Panel

12.1.a To Log In to the Server

This option is used to log in a new user to the Client session, for example at a change of shift. This can only be used if the first user has logged out of the system.

The screenshot shows a 'Client Login' dialog box. It has a title bar with a close button. The dialog is divided into two main sections. The first section, titled 'Login', contains three fields: 'Organization' (a dropdown menu with 'org' selected), 'Login Name' (a dropdown menu with 'admin' selected), and 'Password' (a text input field). The second section, titled 'Server Network Address', contains two fields: 'IP Address' (a dropdown menu with '127.0.0.1' selected) and 'Port Number' (a dropdown menu with '2000' selected). Below these fields is a checkbox labeled 'Connect to the local host' which is checked. At the bottom of the dialog are two buttons: 'Login' and 'Cancel'. Below the buttons is a footer text that reads 'Enter the requested information'.

Figure 64. Client Login window.

12.1.b To Log Out from the Server

This option is used to log a user out from the client session. This option saves exiting the client session altogether when a user wants to log off. Another user wanting to access the client can select the log in option and log on to the server directly.

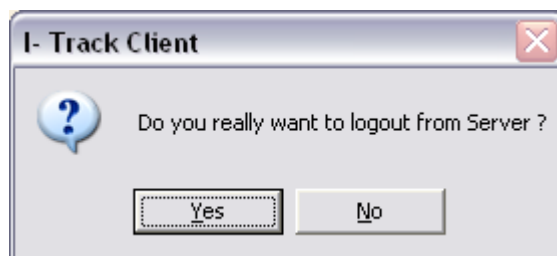


Figure 65. Client Log Out window

12.2 Commands

From the commands options you can select any vehicle on the system and then select a command from the list of options:

- ? Manual Poll
- ? Automatic Poll
- ? Data Command -Text message
- ? Data Command - Status message
- ? Voice Call

12.2.a To send a Manual Poll

Click **Operations** and then **Commands...** The following window is displayed.



Figure 66. Commands window

1. Vehicle select tick-box
2. Next

Click the tick box(es) for the vehicle(s) you require and then press Next.

The following Commands window is displayed:

Note: The commands available depend upon the Command Rights enabled for each vehicle. For more information, see User Manager Command Rights (Part Five -11.2.f, page 65).

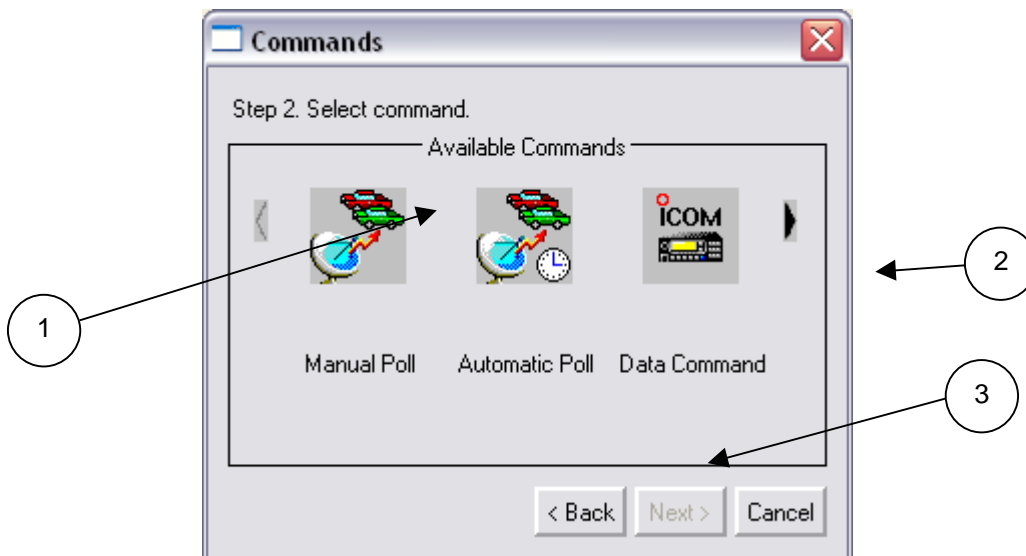


Figure 67. Available Commands window

1. Available commands for selected vehicle(s)
2. More commands (when the arrow is black)
3. Next

Click **Manual Poll**. The window appears as follows:

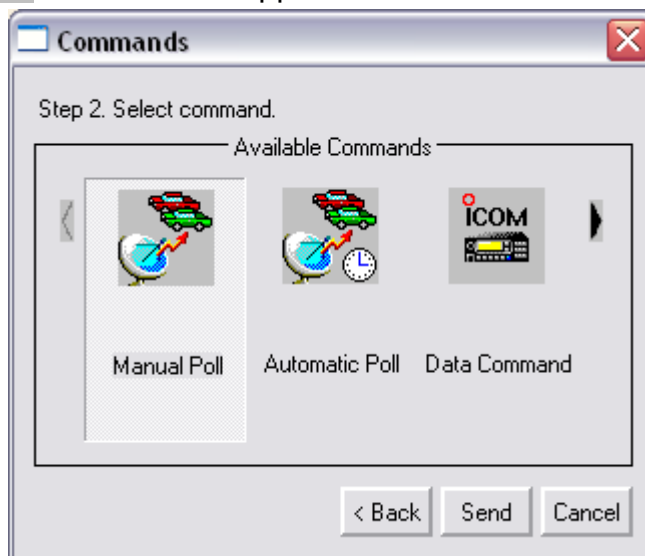


Figure 68. Manual Poll selected window

Click **Send** to send the command. The following window is displayed.

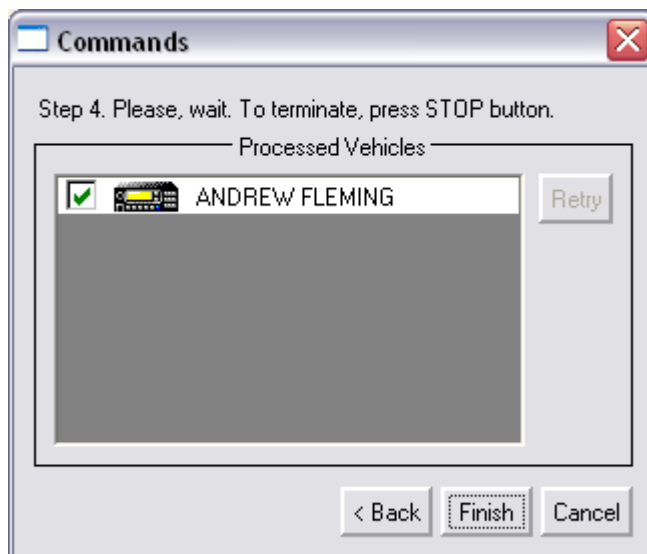


Figure 69. Manual Poll selected window

The Manual poll will be sent to the vehicle(s) as soon as the channel is free, depending on how the channel set-up has been configured. See ITrack Control Center, Channel Properties (Part Four -7.3, page 33).

Select **Finish** to exit window or **Back** to enter new commands.

12.2.b To select an Automatic Poll Timer

Click **Operations** and then **Commands...**. The procedure is the same as described in "To send a Manual Poll" (Part Five -12.2.a).

Once the available commands window is displayed click **Automatic Poll** as shown:



Figure 70. Automatic Poll selected window

Click **Next**. The following window will be displayed.

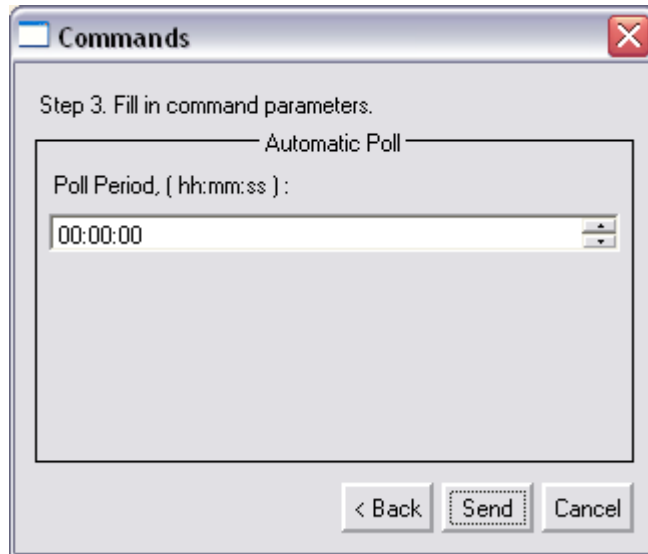


Figure 71. Automatic Poll selected window

Enter the time required for the automatic poll for the selected vehicle. The format is hours: minutes: seconds. Click **Send** to save the time interval on the system. Click **Finish** to complete. Click **Cancel** to exit without saving changes.

Note: An easier way to enter/edit a vehicle's automatic poll timer is to use the Automatic Poll Manager option. This is available from the Operations menu (Part Five -12.8).

12.2.c To Send a Status Message

Click **Operations** and then **Commands...**. The procedure is the same as described in "To send a Manual Poll" (Part Five -12.2.a).

Once the available commands window is displayed click on **Data Command**.

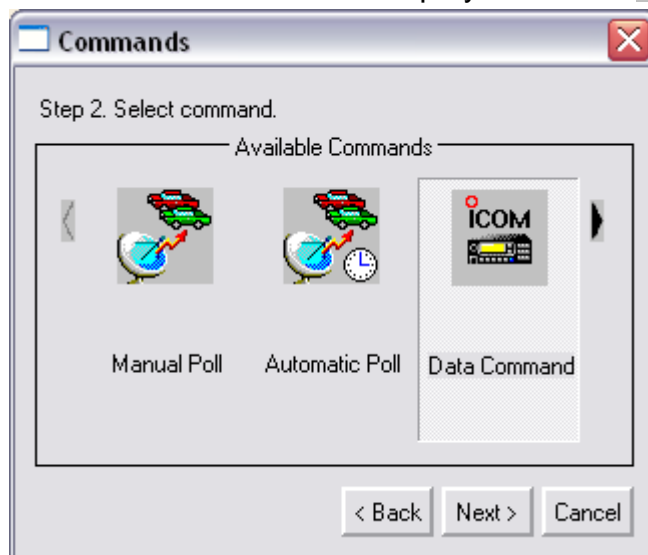


Figure 72. Data Command selected window

Click **Next**. The following window is displayed.

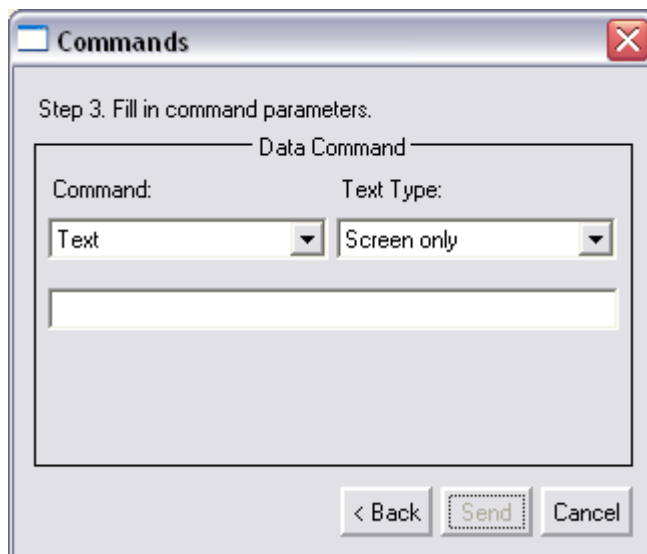


Figure 73. Status Command selected window

From the command drop down box, select the **Status** option. From the **Status ID** or **status description** drop down box, select the status you wish to send to the vehicle(s).

Click **Send** to send the status to the vehicle(s). The following window is displayed.

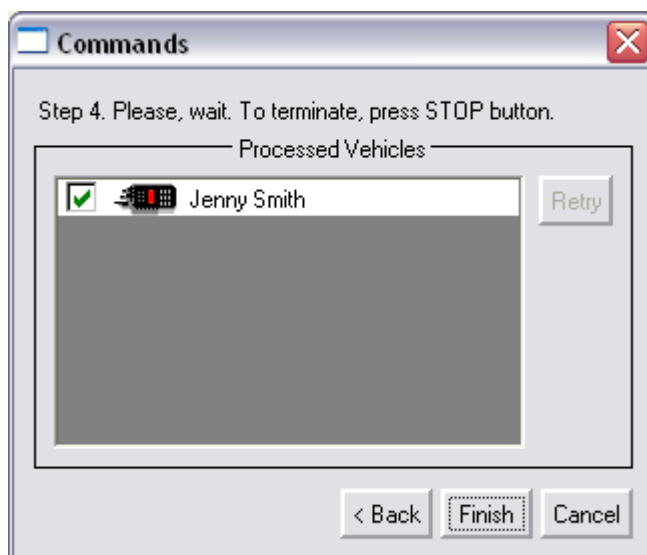


Figure 74. Command Sent and complete window.

If a green tick is shown in the box next to the radio ID, the status message has been sent and an ACK (Acknowledgement) has been received from the mobile. Click **Finish** to exit.

If a red **X** is displayed in the box next to the radio ID, the status message has not been received by the mobile. This could be for several reasons: the radio is switched OFF; the radio is out of range of the base station; there is interference on the channel; or there are collisions with requests from other Clients to the Server. It could also mean that the status message has been received by the mobile but the base did not receive the ACK from the mobile.

Following such an error, the user has the option to cancel or to retry sending the status again.

12.2.d To Send a Text Message

Click **Operations** and then **Commands...**. The procedure is the same as described in "To send a Manual Poll" (Part Five -12.2.a).

Once the available commands window is displayed click on **Data Command**. The following window is displayed.

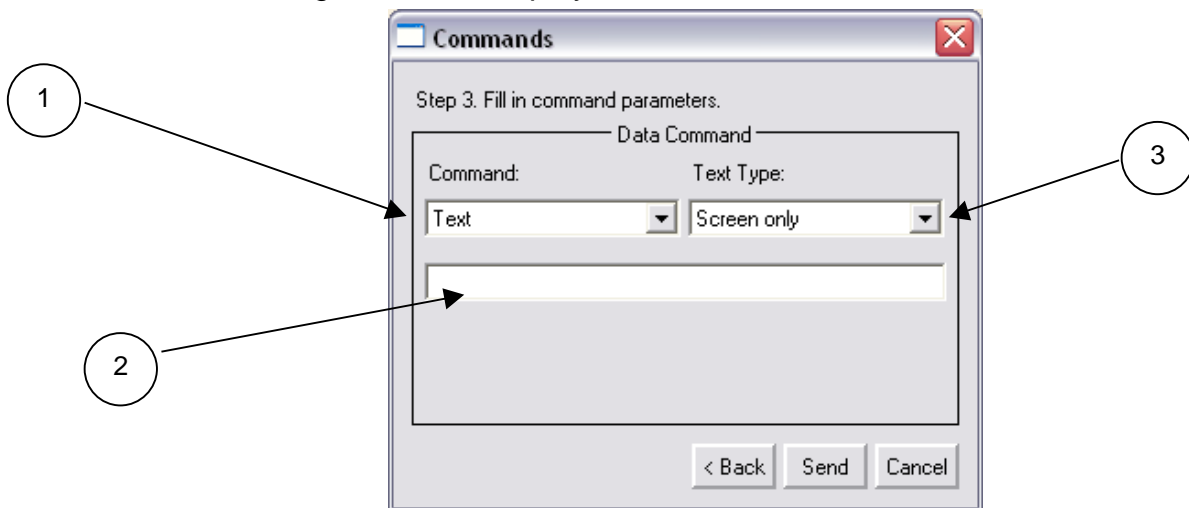


Figure 75. Text Command selected window

1. Command Select
2. Text input window
3. Text type select

From the Command drop down box, select **Text** and enter the required text (maximum 95 characters, including spaces). From the text type drop down box there are options to send text to the screen of the mobile, to the serial port of the mobile or both. If the text message is sent to the serial port only, the mobile must have a printer connected to the OPC822 (RS232 accessory lead) serial port. Click **Send** to send the text message to the mobile. The following window will be displayed.

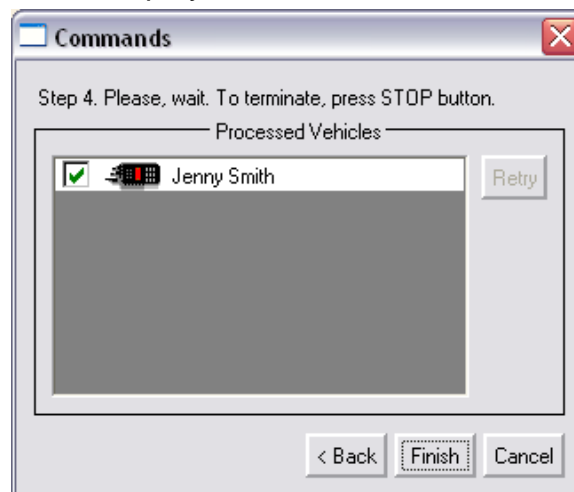


Figure 76. Command Sent and complete.

If a green tick is in the box next to the radio ID, the text message has been sent and an ACK has been received from the mobile. Click **Finish** to exit.

If a red **X** is displayed in the box next to the radio ID, the text message has not been received by the mobile. This could be for several reasons: the radio is switched OFF; the radio is out of range of the base station; there is interference on the channel; or there are collisions between requests from other Clients to the Server. It could also mean the text message has been received by the mobile but the base did not receive the ACK from the mobile.

Following such an error, the user has the option to cancel or to retry sending the status again.

12.2.e To Send a Voice Call

Click **Operations** and then **Commands...**. The procedure is the same as described in "To send a Manual Poll" (Part Five -12.2.a).

Once the available commands window is displayed click on **Voice Call**. If **Voice Call** is not visible in the window, click the right hand arrow to display any extra commands available.



Figure 77. Voice call selected.

Click **Send** to call mobile radio. The following window will be displayed.

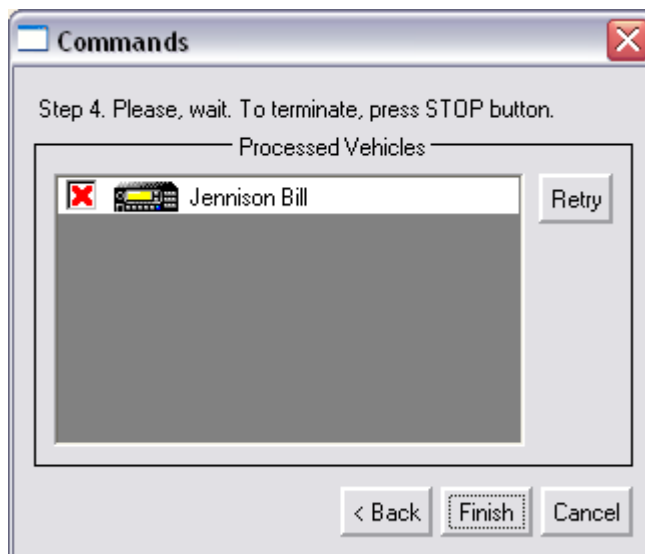


Figure 78. Voice call complete (but failed).

If a green tick is in the box next to the radio ID it means the voice call has been sent and an ACK has been received from the mobile. Click **Finish** to exit.

If a red **X** is displayed in the box next to the radio ID as above, the mobile has not received the voice call. This could be for several reasons: the radio is switched OFF; the radio is out of range of the base station; there is interference on the channel; or there are collisions between requests from other Clients to the Server. It could also indicate that the voice call has been received by the mobile but the base did not receive the ACK from the mobile.

Following such an error, the user has the option to cancel or to retry sending the status again.

12.2.f Go To Vehicle

This feature will re-centre the current map on the vehicle you select from the select vehicle list.

Click **Operations** and then **Go To Vehicle**. The following window will be displayed.



Figure 79. Go to Vehicle window

Select the vehicle you require from the select vehicle drop down box.

Click the **Go To Vehicle** button. The map will re-centre on the selected vehicle. Click **Cancel** to exit function.

12.2.g Last Position Request

This option will enable the operator to set a time period where any current displayed position older than this time period will be rejected and not displayed.

The following window is displayed when this option is selected.



Figure 80. Last position request window

Enter the time period required and select the tick option to enable the feature to work. The Position status can be set for either “ Last Position” or “ Last Valid Position”, as below.



Figure 81. Last Position Request option select window

Click OK to save or Cancel to exit.

12.3 History Manager

The History Manager menu item brings up the Client program's History Manager. This feature retrieves vehicle history data for the current day, previous days, months or years.

The Client's History Manager displays vehicle history data both in tabular and graphical form on the chart of your area. It also lets you save the data as a text document with the data arranged in fixed width columns. This text document can be viewed with standard word processing, spreadsheet, or database software.

Note: The History Manager is used in conjunction with Route Manager (p. 5.21) when there are routes associated with vehicles.

12.3.a To open the History Manager:

Click **Operations**, then **History Manager...**. The History Manager Window will appear in the lower portion of the main window.

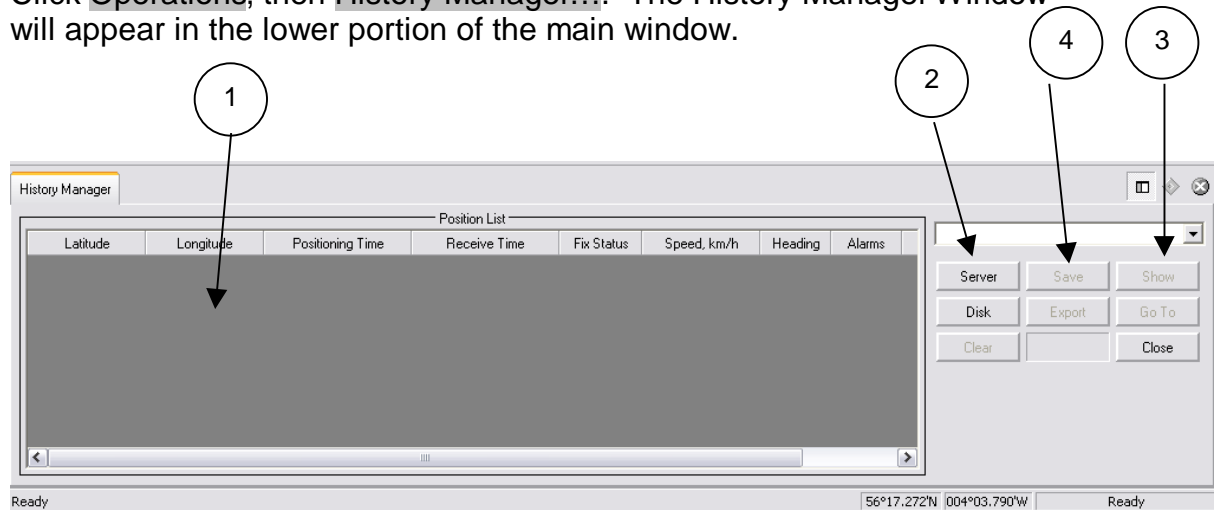


Figure 82. The History Manager window.

1. Vehicle history data.
2. Load history data from Server/Disk.
3. Show/Hide data from display.
4. Save/Clear data.

The fields in the History Data panel show the date and time, latitude longitude, whether the GPS fix was good or bad, the vehicle's speed and heading at that date and time.

12.3.b To retrieve Vehicle History data:

Once the history manager is open, click the **Server** button. The following window will be displayed.

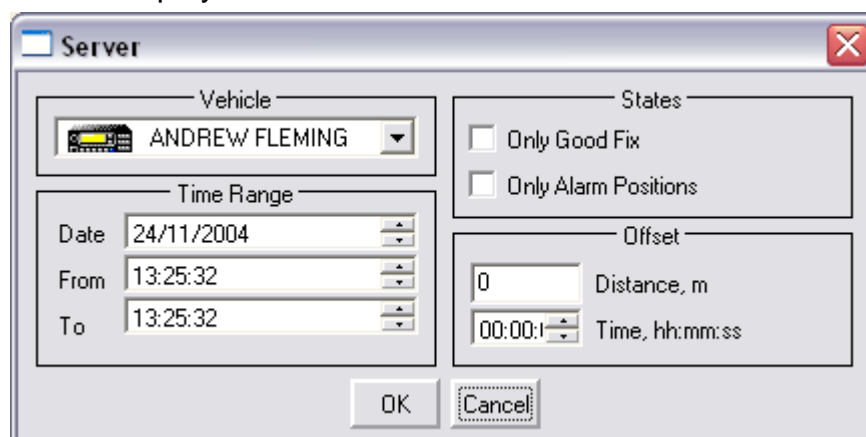


Figure 83. Retrieve History window.

In the vehicle drop down box, select the Vehicle ID/description

Using the up and down arrows, enter the date and time interval for which you would like to view history data. The date and time interval can also be entered by clicking in the data fields and entering the numbers required using the keyboard.

From the states group, select options as required: "only good GPS fix" and/or "only alarm positions" will be retrieved from Server history if selected.

From the offset group, select options as required: "minimum distance between positions" (in metres) and "minimum time between positions".

These options reduce the amount of data recovered from the log file and can make viewer history on the map easier.

Click **OK**. The historical data for the selected time interval will appear in the History Data panel. The panel shows the time and date at which position information was received; the latitude and longitude of the position; whether the GPS fix was good or bad and the heading and speed of the vehicle at that point.

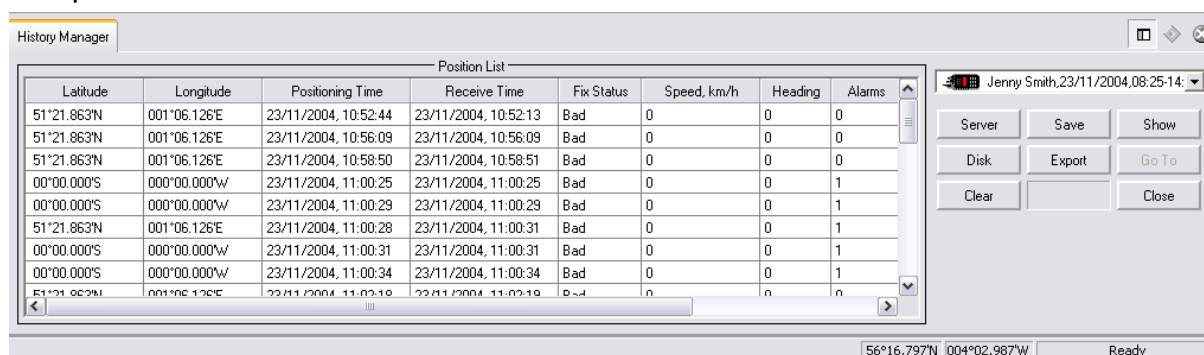


Figure 84. History Manager window.

To display vehicle history overlaid on the mapping data click the **Show** button and the valid positions in the selected time will be displayed on the map.

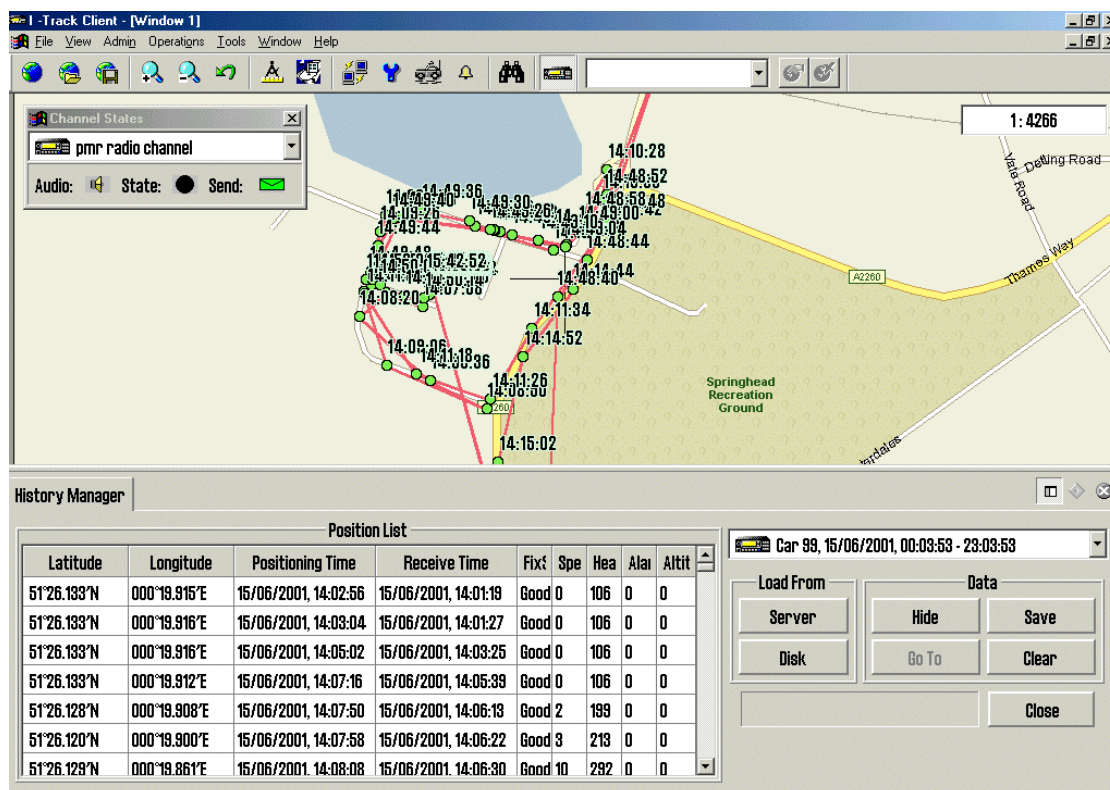


Figure 85. Vehicle history shown with map

The displayed information for each vehicle can be customised by using Vehicle History Setup. Click the **Hide** button to remove the vehicle history data from the screen.

Notes:

- ? Positional data appears in the data table even when a vehicle's GPS fix was bad, these points do not by default (see below) appear in the vehicle's track as it is displayed on the chart. As a result, the lines that connect the individual points of a track may not always accurately represent the vehicle's movement.
- ? The times you enter in the Time panel must be in 24-hour format.
- ? See 13.2, Vehicle State Setup on page 93 to enable the display of invalid Vehicle Track data.

Click on a record in the history data and click **Go To**, to centre that point on the chart.

12.3.c To display History data in Microsoft Access:

The data needs to be exported to a format compatible with MS Access.

Select the historical data you wish to display.

Click **Save** in the Data group on the right of the History Manager panel.

The historical data will be saved in a file named "TfxHistory.mdb" in the "Client" folder (by default, C:\Program Files\AvMap\Client)

Once saved, open (double-click) that file in Windows Explorer or open Microsoft Access and then navigate to and open the file

The historical data will now be in an Access database table.

12.3.d To display History data in Microsoft Excel

Follow the instructions in 12.3.c, To display History data in Microsoft Access format as above.

In MS Access, select Save As/Export from the File menu.

Select "To an external file or database", and press **OK**.

Navigate to a suitable target folder.

In the Filename box, type a suitable name, such as "George_20010605" (without the quotes).

In the Save as Type box, choose Microsoft Excel (selecting the version you have) and click **Export**. The file will now be saved.

Open Microsoft Excel.

In the File menu, click **Open...** The Open window will appear.

Either navigate to and double-click the file using Windows Explorer, or open Microsoft Excel, select File | Open, navigate to the folder to which you exported the file, and double-click to open.

12.4 Incoming Status

The incoming status window is displayed each time a new status message is received from a mobile, unless the **Don't Pop Up** tick box is enabled. It displays the mobile ID/description, time and status text received from the mobile. The user can view all status messages in the stack by using the forward and backward arrow buttons.

Optionally, click the **X** button to delete the messages when read.

The following window is displayed each time a new status message is received or the incoming status option is opened, unless the **Don't Pop Up** tick box is enabled.

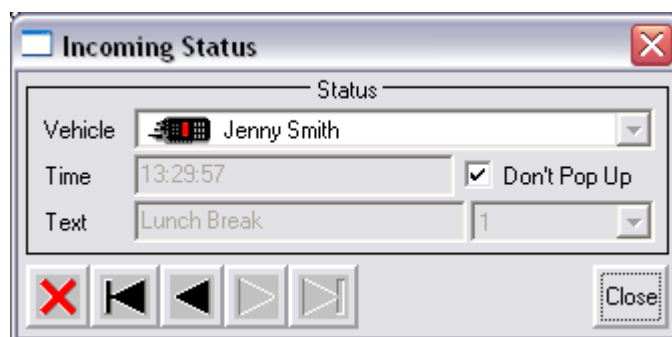


Figure 86. Incoming Status window.

12.4.a To open the Incoming Status window manually

From the **Operations** menu, select **Incoming Status**.

12.4.b To exit the Incoming Status window

Click **Close** or press the X button at the top-right of the Incoming Status window. Alternatively, from the **Operations** menu, deselect the **Incoming Status** item.

12.5 Last Received Status

The window displays the last received status message from each vehicle.

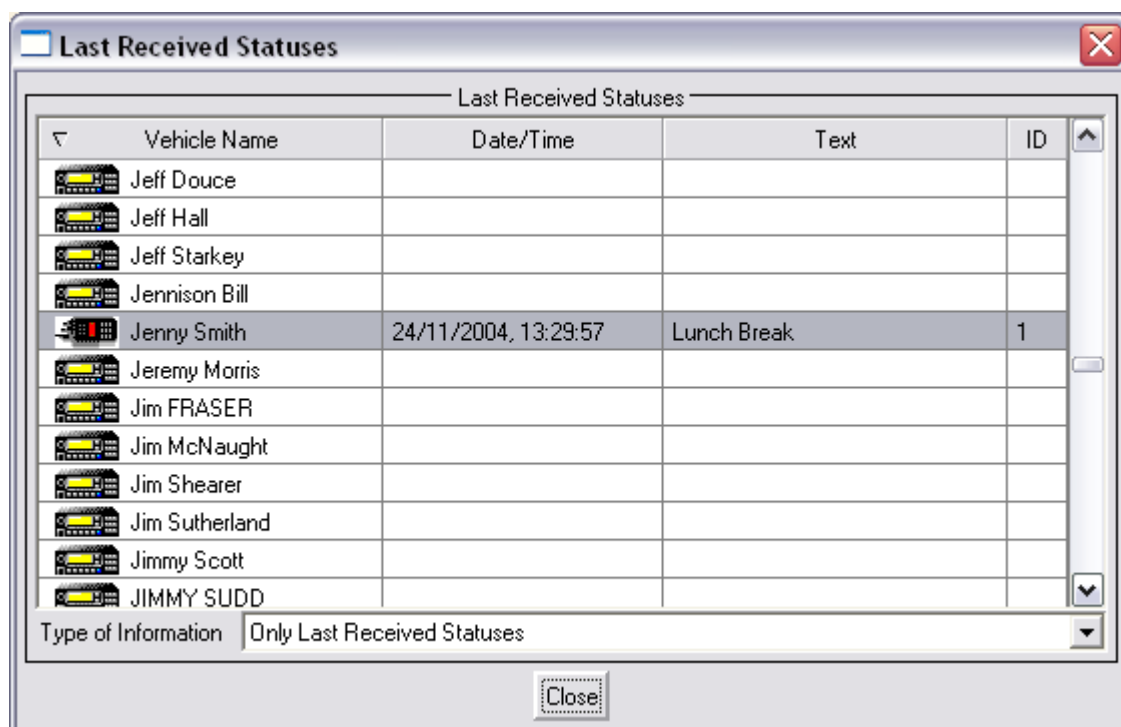


Figure 87. Last Received Status window.

Statuses that are ticked as rejected in the Status Manager screen are not shown, this option is useful for updating the GPS position sent with status but leaving the correct vehicle status displayed e.g. ignition on/off status.

12.5.a To open the Last Received Statuses window manually

From the **Operations** menu, select **Last Received Statuses**.

12.5.b To exit the Last Received Statuses window

Click **Close** or press the X button at the top-right of the Last Received Statuses window. Alternatively, from the **Operations** menu, deselect the **Last Received Statuses** item.

12.6 Call Window

The call window is used to make a voice call to a mobile. The mobile will sound an alert with one of a variety of beep options, and display caller ID or text when the call is received. If the driver is out of the vehicle when a call is received, the display on the radio will show a call with the caller ID or text of the call.

12.6.a To make a Voice Call

Click **Operations** and then **Call Window**. The following window will be displayed.

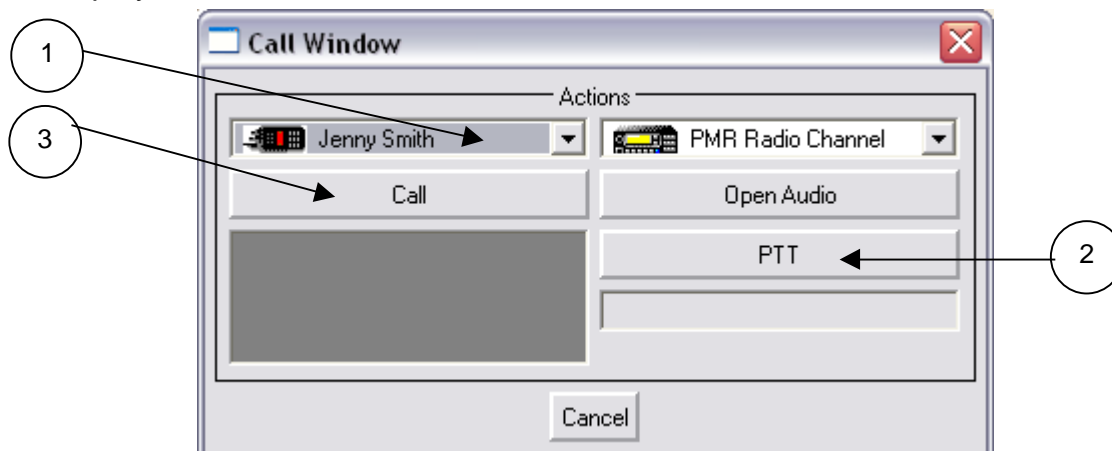


Figure 88. Voice Centre window.

1. Vehicle Select
2. PTT (Press to Talk)
3. Call

Select the required vehicle from the drop down box, click **Call** to send the call to the mobile.

Notes:

If the call was completed successfully, the lower right box will display " ACK received". If the ACK was received, the base station audio mute will be opened automatically.

If the call was not completed successfully, the lower right box will display " NACK received" and the base station audio will remain muted. This could be for several reasons: the radio is switched OFF; the radio is out of range of the base station; or there is interference on the channel. It could also

indicate that the voice call has been received by the mobile but the base did not receive the ACK from the mobile.

Following such a failure, the user can press **Call** again, or re-try at a later time.

Once the mobile answers the call by voice, this will be heard from the external speaker connected at the base. The user can then either click **PTT** and speak into the microphone or key the standard fist microphone to reply to the mobile.

Once the conversation is finished, the user can click **Close Audio** to mute the base station speaker, then either click **Cancel** or the X button at the top-right of the window to exit the Voice Centre window.

Note: If the Voice Centre window is closed without the audio mute first being closed, some data signaling may be heard from the speaker until the mute timer automatically mutes the audio. This will depend on channel activity and the timer setting selected in the I-Track Control Centre.

12.7 Send Command

The send command is used for sending either a status message, text message or a GPS request to a mobile.

12.7.a To send a Status Message

Click **Operations** and then **Send Command**. The following window is displayed.

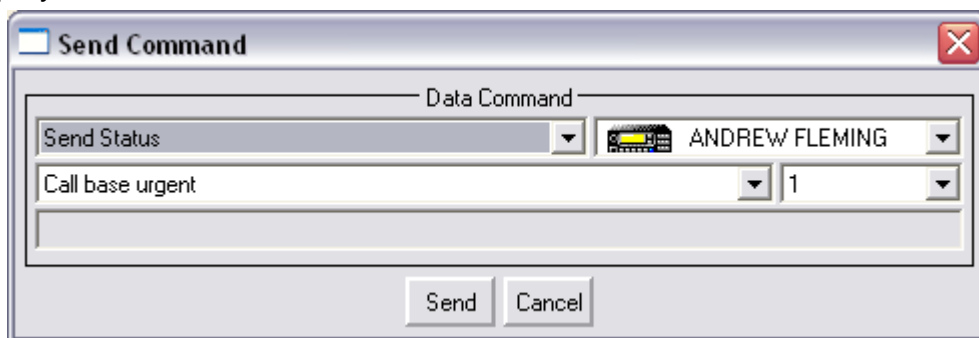


Figure 89. Send Command window.

From the Command drop down box, select **Status**.

From the Vehicle Name drop down box, select the vehicle required.

From the Status ID or Status Description drop down box, select the status required.

Click **Send** to send the status message to the mobile. The bottom text box will display " ACK received" if the call was successful.

If the call was not successful, the lower box will display "NACK received". This can occur for several reasons: the radio is switched OFF; the radio is out of range of the base station; or there is interference on the channel. It

could also indicate that the status message has been received but the base station did not receive the "ACK" from the mobile. Following this failure, the user can press **Send** again or re-try later.

12.7.b To close the Send Command window

Click **Cancel** or the X button at the top-right of the window to exit the Send Command window.

12.7.c To send a Text Message

Click **Operations** and then **Send Command**. The following window is displayed.



Figure 90. Send Text Command window.

From the Command drop down box, select **Text**.

From the Vehicle Name drop down box, select the vehicle required.

Enter text required in the Message Text window.

From the Text Type drop down box, select where to send the text message. This can be either to the screen (display of F1610 mobile), printer (printer connected to OPC822 lead of F1610) or both.

Click **Send** to send the text message to the mobile. The lower text box will display "ACK received" if the call was successful.

If the call was not successful, the lower box will display "NACK received". This can occur for several reasons: the radio is switched OFF; the radio is out of range of the base station; or there is interference on the channel. It could also indicate that the text message has been received but the base station did not receive the "ACK" from the mobile. Following this failure, the user can press **Send** again or re-try later.

12.7.d To close the Send Command window

Click **Cancel** or the X button at the top-right of the window to exit the Send Command window.

12.7.e To send a GPS Request

Click **Operations** and then **Send Command**. The following window is displayed.

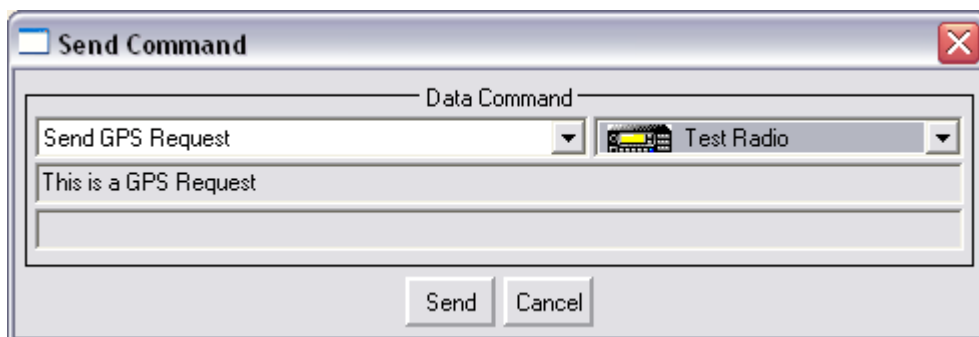


Figure 91. Send GPS Request Command window.

From the Command drop down box, select **GPS Request**.

From the Vehicle Name drop down box, select the vehicle required.

Click **Send** to send the GPS request to the mobile, the lower text box will display "ACK received" if the call was successful.

If the call was not successful, the lower box will display "NACK received". This can occur for several reasons: the radio is switched OFF; the radio is out of range of the base station; or there is interference on the channel. It could also indicate that the GPS message has been received but the base station did not receive the "ACK" message from the mobile. Following this failure, the user can press **Send** again or re-try later.

The vehicle icon on the map will move to the latest position received when the request completes.

12.7.f To close the Send Command window

Click **Cancel** or the X button at the top-right of the window to exit the Send Command window.

12.8 Poll Manager

The Poll Manager allows the Administrator to view and edit the automatic poll timer for all vehicles in the vehicle list.

Users can only view the Poll Timer entries.

12.8.a To edit an Automatic Poll.

Click **Operations** and then **Poll Manager**. The following window is displayed.

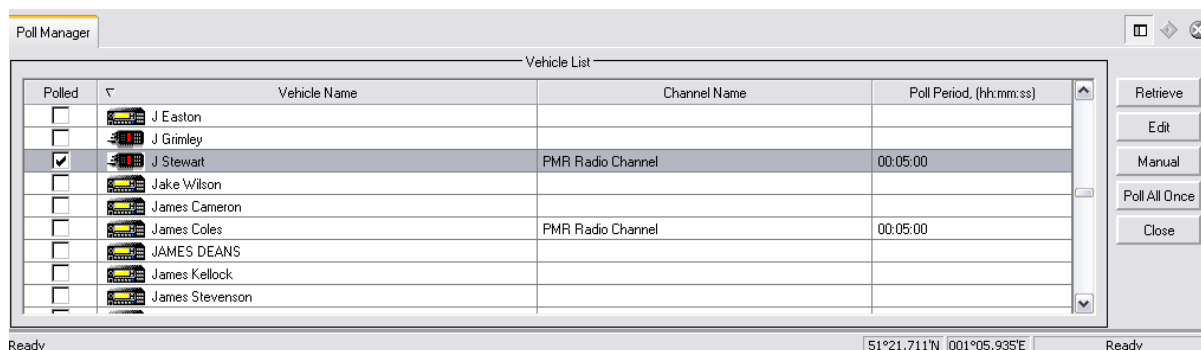


Figure 92. Automatic Poll Manager window.

In the vehicle list, select the required vehicle, and then click **Edit**. The following window is displayed.

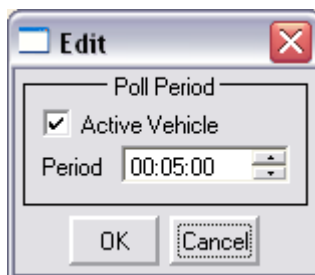


Figure 93. Edit Poll Period window.

Click in the Poll Period box and enter the required time. The format is HH:MM:SS. The up and down arrows can also be used to increase or decrease time period.

Click the **Active Vehicle** box to enable the poll timer, this option allows for vehicle polling to be deselected by un-ticking the box without changing the timer.

Click the **OK** button to accept changes or the **Cancel** button to reject them.

Note: If a vehicle needs to have its automatic poll turned off click **Edit**, untick the "Active Vehicle" tick box, and then click **OK**. The poll tick box will now be blank and the mobile will not receive polls from the base station.

12.9 Alarms Panel

The alarms panel allows a user to view received alarm messages in I-Track. Click **Operations** and then **Alarms Panel**. The following window is displayed.



Figure 94. Alarms window (no alarm)

No Alarms are active in the above window.

If an emergency call is received, the Alarm icon on the main toolbar will flash red. Clicking on the flashing alarm icon will cause the Alarm Panel window to be displayed (see figure 75). The PC also plays a audio (.WAV) file. This is the standard Windows "Asterisk" sound file.

Once the alarm button has been clicked following an active alarm, the following window is displayed.



Figure 95. Alarms window (alarm received)

The Alarms Panel window shows which vehicle sent the alarm and when. If more than one alarm has been received, click the backward and forward arrows to view them. The arrows are greyed when there is no more information.

Click the **Go To** button to re-centre the map on that vehicle.

Click the **Reset** button to stop the Alarm State icon on the I-Track screen from flashing. This will only reset the alarm on that particular client session. Any other client sessions on the system must reset their own alarm panel.

Click the **Close** button to exit the Alarms window.

Note:

To change the sound emitted when an alarm is received go to the Windows taskbar click **Start** button and then click **Settings** and then click **Control Panel**. Double click the **Sounds** icon. The following window will appear.

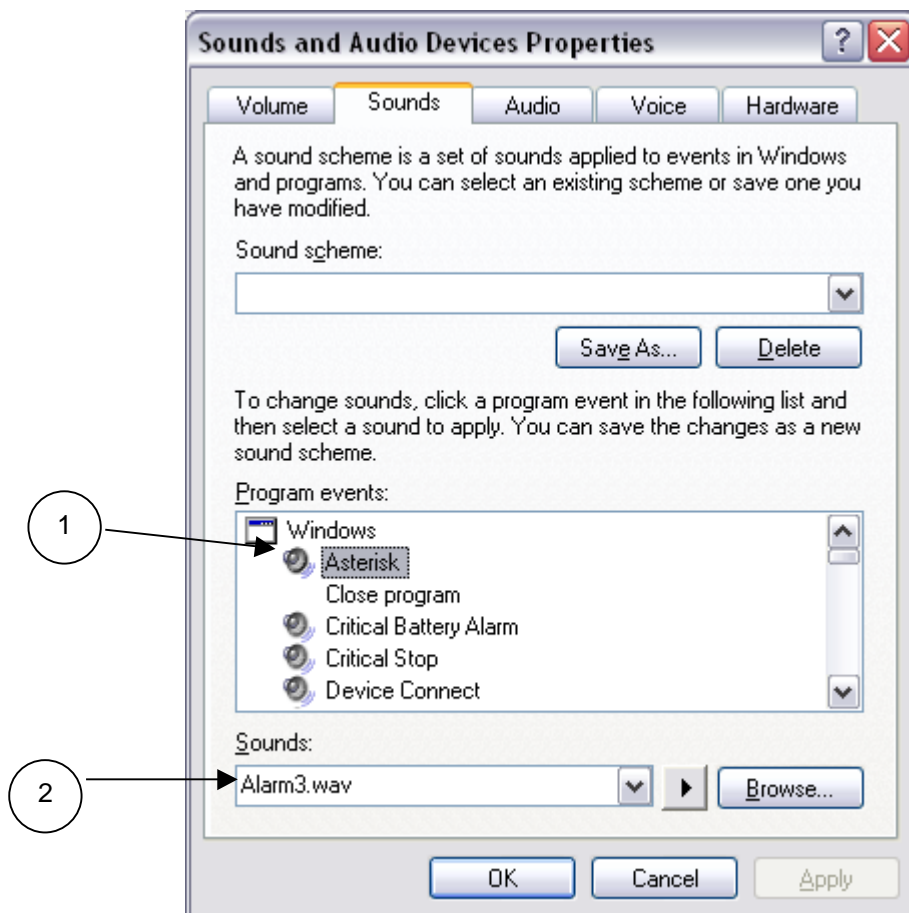


Figure 96. Windows Sound Properties window.

Click the "Asterisk" sound icon (1) and then enter the new sound file name and path in the Name box (2). Or click the **Browse** button to locate the new sound file to be used. Click **OK** to save new sound file.

Chapter 13 - Tools menu

- ? Channel States
- ? Vehicle State Set-up...
- ? Icom Specific Colours...
- ? Vehicle Position Set-up...
- ? Vehicle History Set-up...
- ? Window Set-up...
- ? Routes Export/Import
- ? Route Planning
- ? Measurement

13.1 Channel States

The Channel States window displays the state of the F1610 base station.

13.1.a To open the Channel States window

Click **Tools** and then **Channel States**. The following window is displayed.

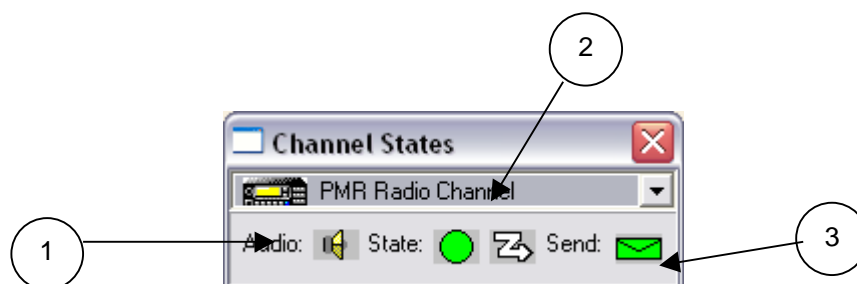


Figure 97. Channel States window.

1. Audio State (Closed)
2. Base station condition/state (not available)
3. Send State (inhibited)

The current channel in use is displayed. The audio state is represented by the speaker symbol. This has two states: either muted/closed as above (no audio will be heard from speaker); or speaker un-muted/open (audio can be heard from loudspeaker) as below.

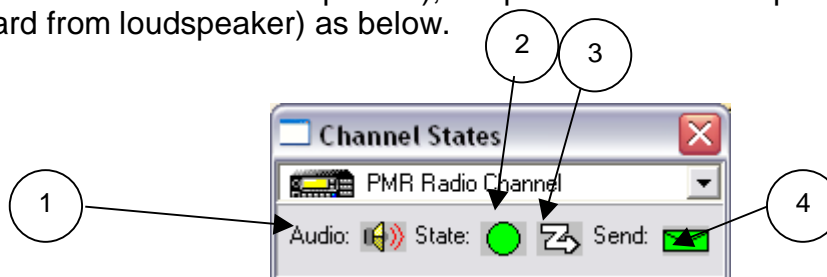









Figure 98. Channel States window.

1. Audio State (Open)
2. Base station condition/state (ready/free)
3. Repeater condition/State
4. Send State (enabled)



The Base Station “ State” or status, is represented by a virtual LED, changing colour depending on the current status of the base station.

	Black	Not ready/no connection to F1610 base.
	Red	Base station is in transmit mode.
	Yellow	Base is busy/receiving a signal on the channel.
	Green	Base is free/ready.

The repeater ‘ State or status, is represented by a lightning indicator, changing colour depending on the current status of the repeater.

	White	Repeater is closed.
	Green	Repeater has been opened by the base station.
	Red	Repeater has been opened by a mobile station or another base station.

The “ Send” status, represented by the envelope, has two states, also indicated by colour:

	Green	The user is able to send a call, from any menu with a Call option.
	Grey	The user is not able to send a Call, because the base station is busy. In any menu with a Call option, that option will be dimmed (grey) until the base station is available.

13.1.b To close the Channel States window

To remove the Channel States window from the display, click the X in the top-right corner or open the **Tools** menu, then deselect the **Channel States** item.

13.2 Vehicle State Setup

The Vehicle State Setup allows a user to set parameters for the control of the vehicle icon foreground and background.

13.2.a To open the Vehicle State Setup window

Click **Tools**, then click **Vehicle State Setup**. The following window will be displayed.

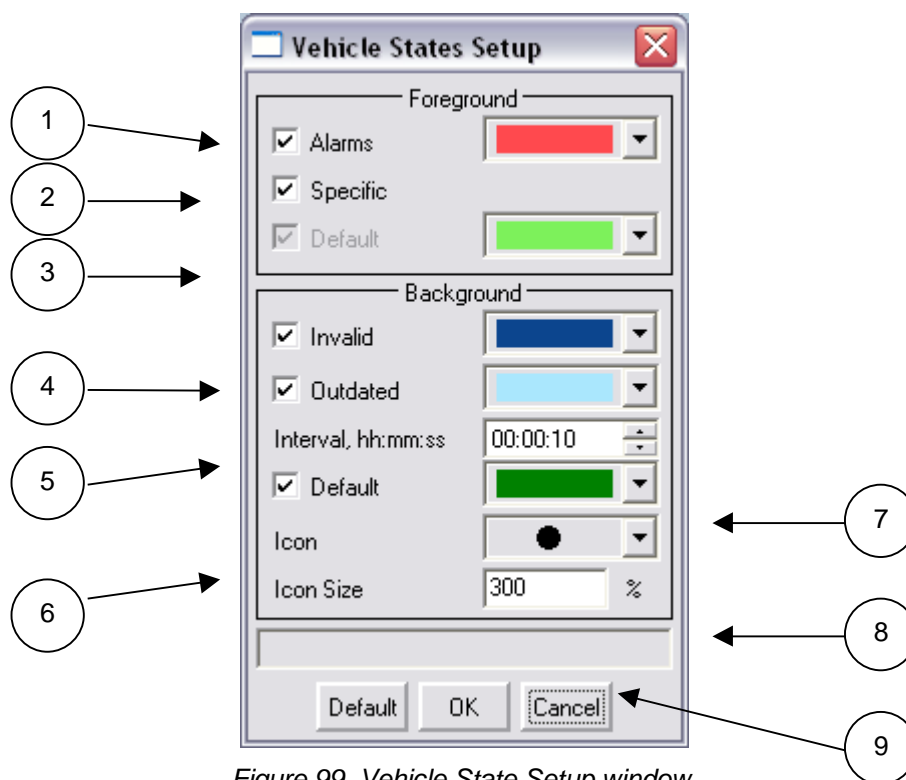


Figure 99. Vehicle State Setup window.

Foreground

1. The vehicle icon will change to the selected Alarm colour if an alarm call is received.
2. Ticking this box enables Specific colours to be used. See below (13.3a).
3. The default colour for vehicle position icon. This also depends on some vehicle states alarm and status parameters set. These can change the vehicle icon colour when received.

Background

4. The background vehicle colour will change to this colour if an invalid GPS position is received.
5. The background vehicle colour will change to this colour if the vehicle position information is outdated. The outdated time interval (7) can be set as required. The default time interval is 10 minutes. If no new vehicle position information is received and the timer expires, the background colour will change to the outdated colour.
6. The default colour for the vehicle background icon. This depends on the outdated time interval and invalid GPS position parameters set.
8. The background vehicle icon is selected with this option. Click the drop down box and select the icon type required.
9. The background vehicle icon size is selected with this option, the default size is 150.

Click **OK** to save or **Cancel** to exit Vehicle States Setup window.

13.2.b To close the Vehicle States Setup window

To remove the Vehicle States Setup window from the display, click the X in the top-right corner or click **OK** or **Cancel**.

13.3 Icom Specific Colors

The Icom specific color screen allows a user to control the colour of the vehicle foreground icon when any status is received.

13.3.a To open the Icom Specific Colors window

Click **Tools**, then click **Icom Specific Colors**. The following window will be displayed.

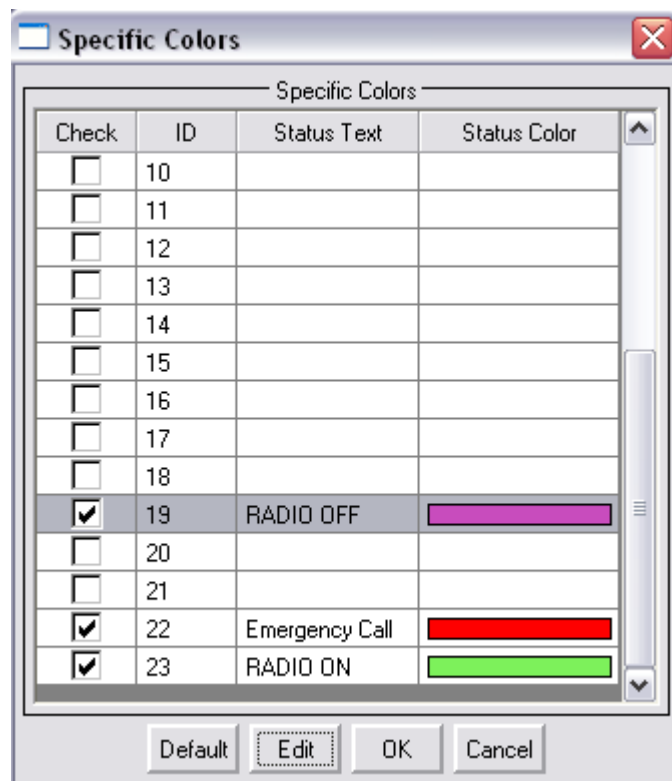


Figure 100. Icom Specific Colour window.

Select the status message to which you would like to assign a colour and click **Edit**. The following window will be displayed.

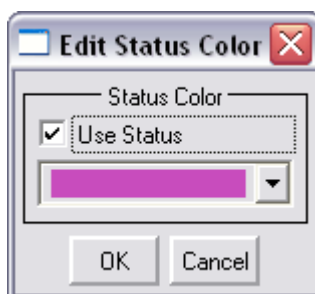


Figure 101. Edit Colour Status Window.

Click the "Use Status" tick box and then select the colour for the status from the colour drop down box.

Click **OK** to save or **Cancel** to exit Edit Status Colour window.

Repeat the above steps for each status colour required, click **Default** to restore default colour settings.

13.3.b To close the Icom Specific Colors window

Click **OK** or **Cancel** or click the X in the top-right hand corner of the window to exit the Icom Specific Colors window.

13.4 Vehicle Position Setup

Vehicle Position Setup allows the user to select icon and track display properties for the selected vehicle.

Vehicle Position Setup is split up into two sections. The first window is "Location" and deals with display of the current vehicle position. The second window is "Track" and deals with display of vehicle tracks. No tracks will be displayed unless there is a positive number entered in the "Track Points" box.

13.4.a To open Vehicle Position Setup

Click **Tools** then **Vehicle Position Setup**. The following window is displayed.

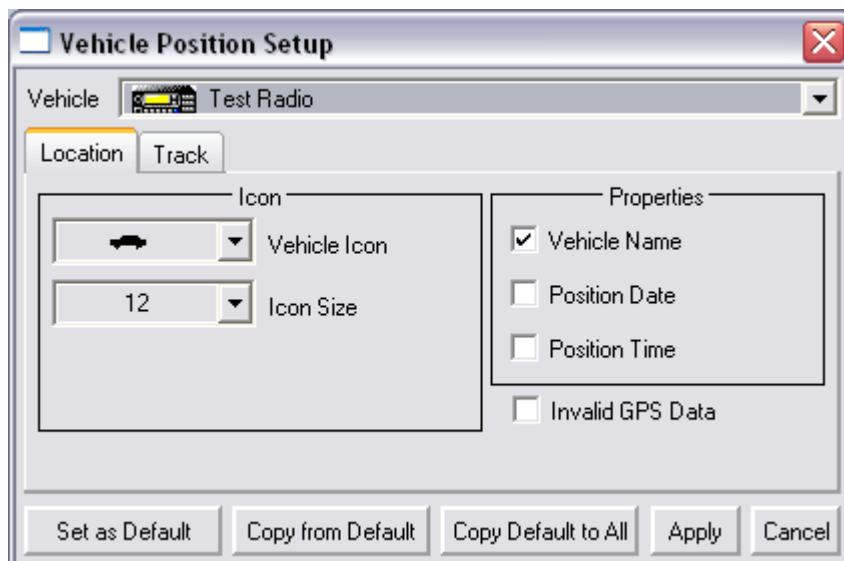


Figure 102. Vehicle Position Setup window.

If you have your default vehicle settings setup you can click the **Copy from Default** button, this will populate the window with your previously stored settings.

Select the vehicle you wish to edit from the vehicle drop down box.

Select the vehicle icon and size required.

From the Properties group, select tick boxes for options required to be displayed with the vehicle icon.

Select Invalid GPS Data to include positions where invalid GPS data were received.

Note: Such position data may or may not be accurate.

Click the **Track** tab. The following window will be displayed.

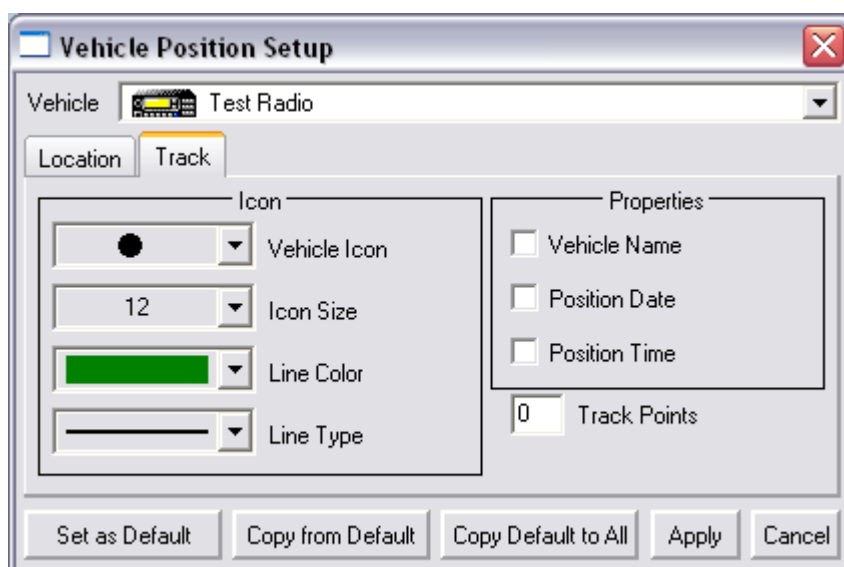


Figure 103. Vehicle Position Setup window.

Select the vehicle icon, icon size, line, colour and line type for vehicle tracks.

From the Properties group, select tick boxes for options required and enter the number of vehicle Track Points required.

Once a vehicle set-up is defined and you require this to be used for more than one vehicle settings click the **Set as Default** button to save the new default settings. To apply this setting to all vehicles click the **Copy Default to All** button.

Click **Apply** to save changes or **Cancel** to ignore changes.

Default restores default settings. Press **Apply** to save these settings.

13.4.b To close Vehicle Position Setup

Press **Cancel** or the X at the top-right of the Vehicle Position Setup window.

Note: After pressing **Apply**, the **Cancel** button does not remove applied changes.

13.5 Vehicle History Setup

Vehicle History Setup allows selection, per vehicle, of: an icon; the size of icon; line type; vehicle track colours; and up to four pieces of information to be displayed with the vehicle icon. Whenever History Manager is used to view a vehicle's history data, it will be displayed with the properties selected here for that vehicle.

13.5.a To open Vehicle History Setup

Click **Tools** then **Vehicle History Setup**. The following window will be displayed.

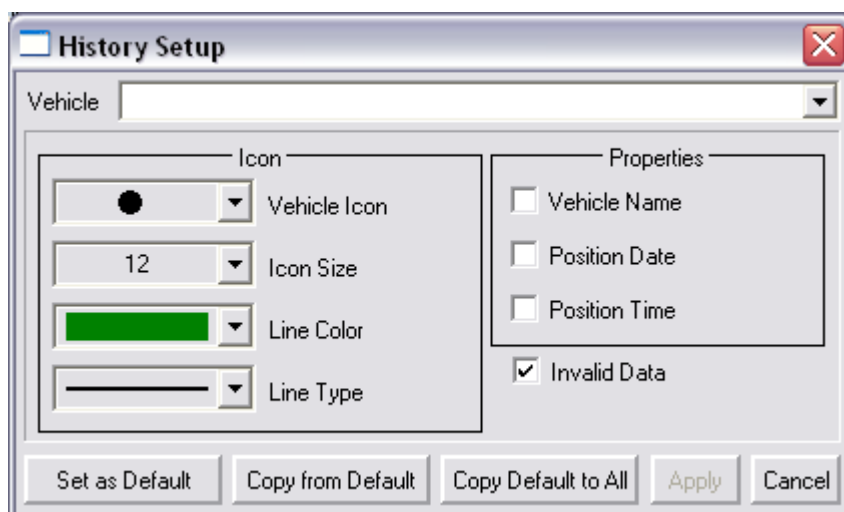


Figure 104. Vehicle History Setup window.

If you have configured your default settings clicking the **Copy from Default** button will populate the window with your previously stored settings.

Click on the vehicle drop down box and select the required vehicle.

Select the vehicle icon and size required.

Select the line type and line colour required.

Select the Properties to be displayed with the vehicle icon.

Select Invalid Data to include positions where invalid GPS data were received. (These may be incorrect)

Once all settings have been set, you can save them as the default settings by clicking the **Set as Default** button.

Clicking the **Copy Default to All** button will update all vehicles history with the new settings.

Click **Apply** to save changes or **Cancel** to ignore changes.

Default restores default settings. Press **Apply** to save these settings.

13.5.b To close Vehicle History Setup

Press **Cancel** or the X at the top-right of the Vehicle History Setup window.

Note: After pressing **Apply**, the **Cancel** button does not remove applied changes.

13.6 Window Setup

Window Setup is used for selection of vehicles in each window. Each window can be customised to display different vehicles. The window can also track a vehicle's movement and re-centre the map on that vehicle. The amount of vehicle movement required before a map will re-centre is also selectable.

13.6.a To open Window Setup

Click **Tools**, then click **Window Setup**. The following window is displayed.

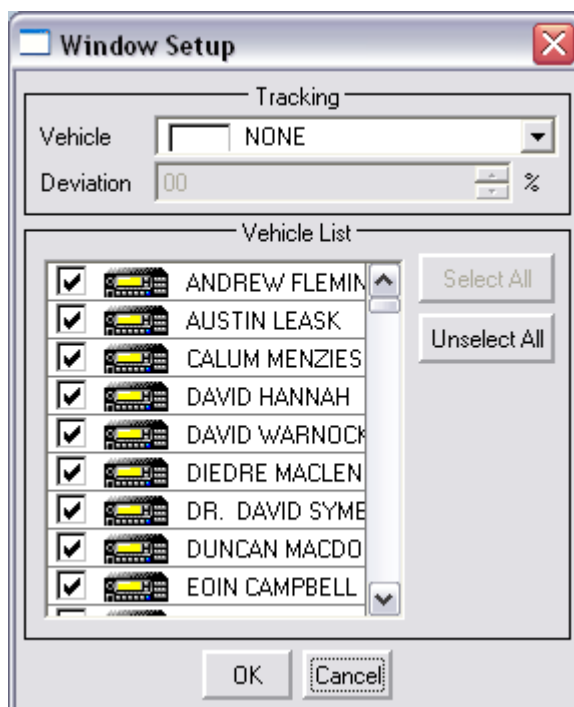


Figure 105. Window Setup window.

Select the tick boxes in the vehicle list for all vehicles to be displayed in the window.

A single vehicle may be selected in the tracking drop down box. If a single vehicle is selected, the map will follow the vehicle movements.

Note: All vehicles must first be deselected or a new map view should be opened. Open the Window Set-up window again to select a single vehicle.

If a vehicle is enabled for tracking in a window, a deviation percentage can be selected. The percentage value is a measure of the distance a vehicle must move inside the map before the map is redrawn and the map re-centred on that vehicle. The lower the percentage set, the more frequently the map will be redrawn.

If multiple map views are displayed, the current map view only is affected.

Click **OK** to save or **Cancel** to exit Window Setup.

13.6.b To close the Window Setup window.

Click **Cancel** or the X at the top-right of the Window Setup window.

13.7 Routes Export/Import

This feature is not fully implemented in release 6.1.5 of ITrack.

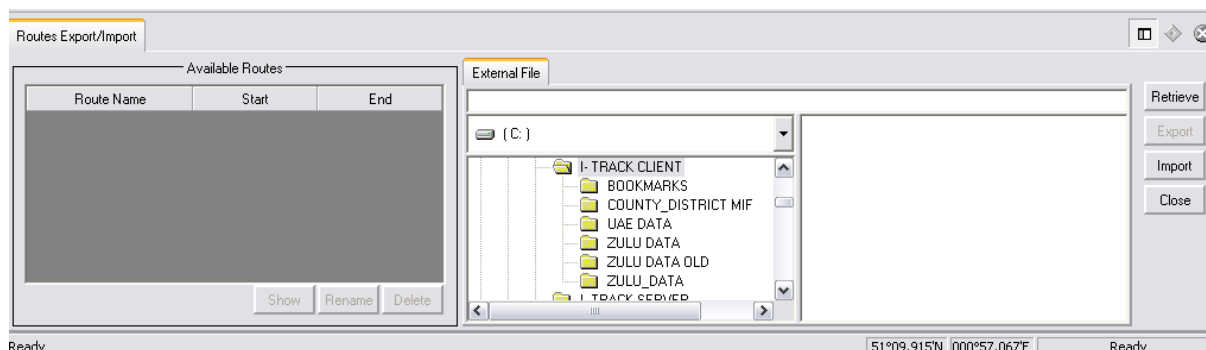


Figure 106. Route Export/Import window.

13.8 Route Planning

This feature is not fully implemented in version 6.1.5 of ITrack.

This feature will allow mapping of a predetermined route for a vehicle to follow. It allows setting of Waypoints and Bus Stops for a particular route and assignment of that route to a vehicle using Vehicle Manager (p. 5.8). Using History Manager (Part Five -12.3) it can be determined whether that vehicle passed its assigned bus stops.

Notes:

- ? The Administrator will use this feature in conjunction with Vehicle Manager and History Manager.
- ? Users may open Route Manager in order to display or hide routes programmed by the Administrator. Users may not add, edit, or delete routes.

13.8.a To open Route Planning:

Click **Tools**, then **Route Planning...** The Route Planning window will appear in the lower portion of the Client's main window.

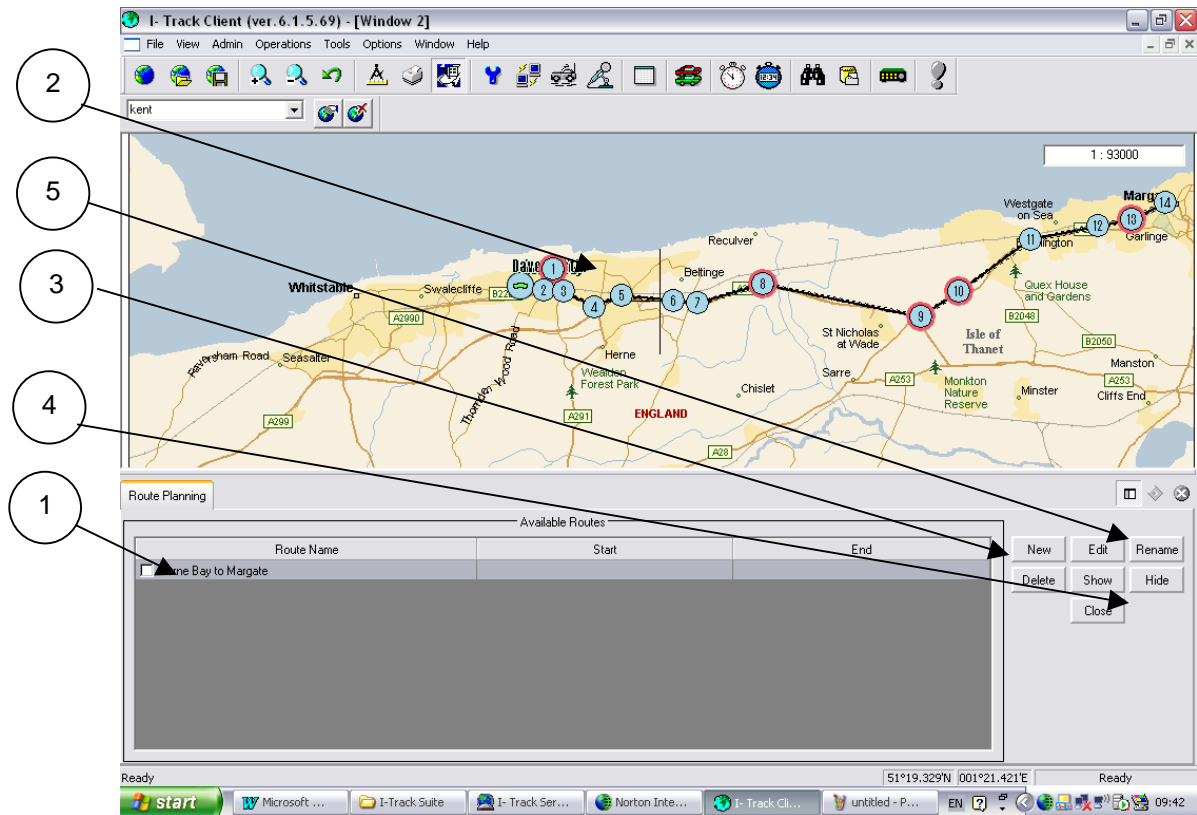


Figure 107. The Route Planning window appears in the lower portion of the main window.

1. Route List showing Route Name
2. Route Displayed on client map
3. New and Delete buttons
4. Show and Hide buttons
5. Rename and Edit buttons

13.8.b To add a new Route:

Open Route Planning.

Click **New**. The following window will be displayed.

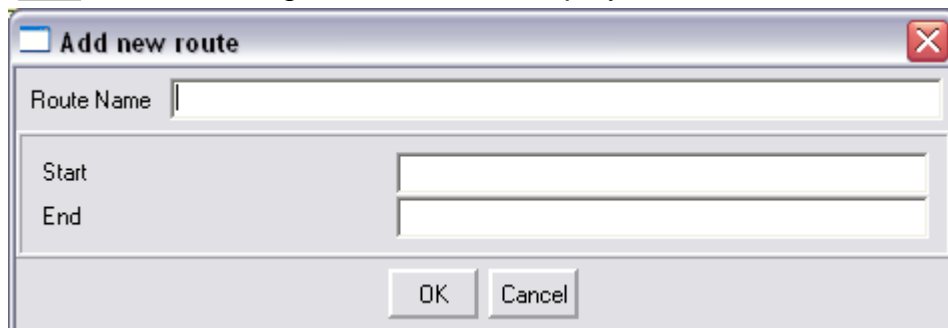


Figure 108. Add new route dialogue.

Enter a Route Name, a start name and an end name, and click **OK**.

Click **Edit**. This opens the Route Editor window. It appears at the bottom right of the main view window.

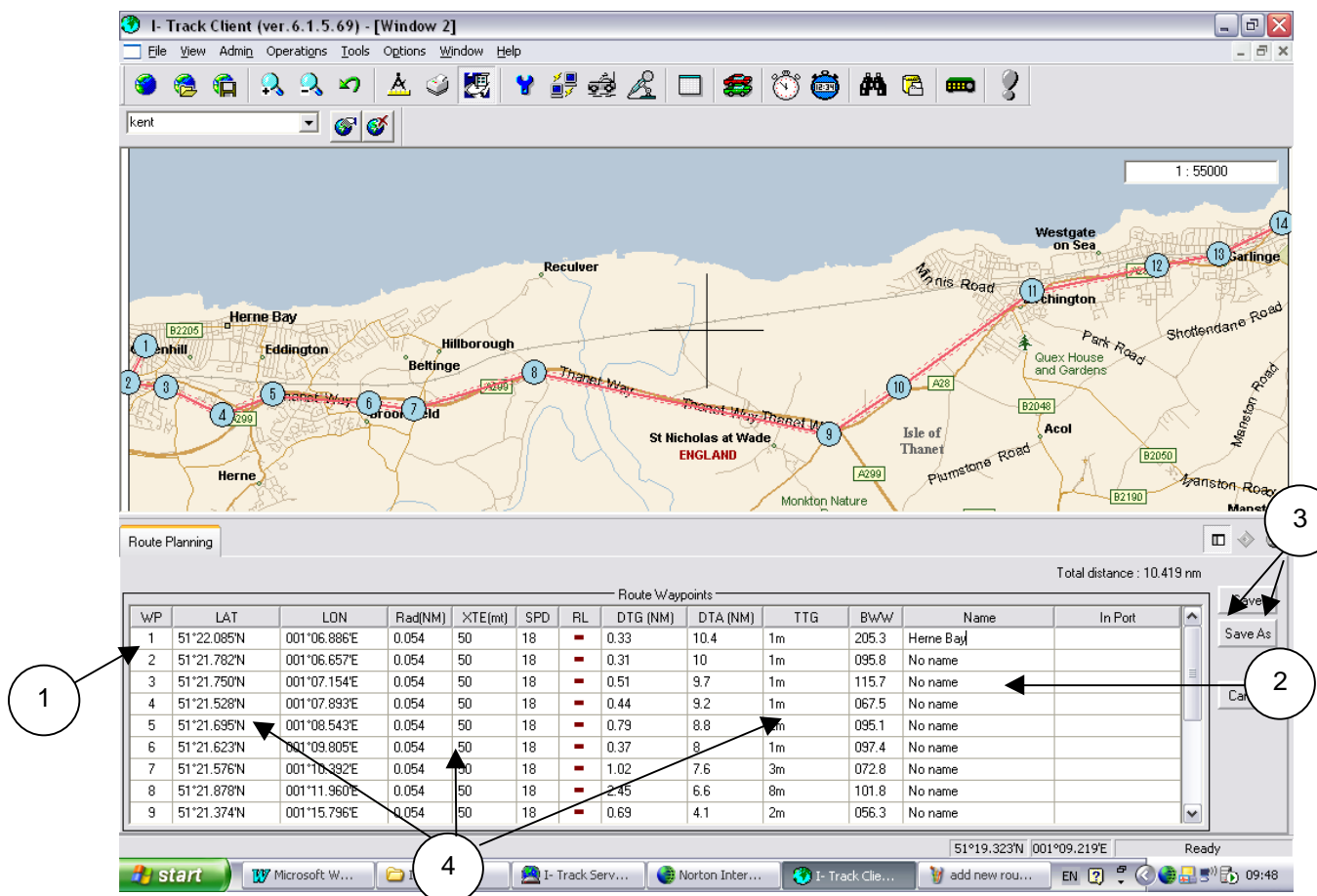


Figure 109. The Route Planning Editor window appears at the bottom of the main view window.

1. Waypoint number
2. Waypoint Description/Name
3. Save and Save As buttons
4. Waypoint properties

Notes:

- ? In the Route Planning Editor window, there are two ways to enter a route: Manually; or by clicking points on the chart.
- ? With the Route Planning window open, it is not possible to re-centre the map by simply clicking in the map window, a Waypoint would be inserted. To re-centre the map under these circumstances, hold the <Ctrl> key on the keyboard whilst clicking the required centre location.

13.8.c To enter a Route Manually:

Open the Route Editor Window.

Click on the first Waypoint line.

In the Position panel, enter the Latitude and Longitude of the first Waypoint you would like to set, in degrees, minutes, and seconds.

Enter a name/description of Waypoint.

Click **Save**.

Repeat the above for each Waypoint required.

Click **Save** to store the route.

13.8.d To enter a Route with the mouse:

Open the Route Editor Window.

Click on the first Waypoint line

Position the cursor in the chart window where a Waypoint is required.

Click at that point. A yellow dot will appear.

Enter name/description for the Waypoint.

Repeat the above for each Waypoint you wish to add. A red line will connect each Waypoint in the route.

Click **Save** to save the route.

Note: Waypoints mark the path a vehicle is meant to follow. If sufficient Waypoints are not defined, the yellow line representing the route will appear jagged and misrepresent the vehicle's actual path.

13.8.e To delete a Waypoint:

Open the Route Editor window.

Select the route you wish to edit.

Click **Show** to display the route on the map.

In the Route panel, select the Waypoint you wish to delete.

In the main window, right-click on the yellow Waypoint number you wish to delete

Click **Save** to store.

Notes:

? This action cannot be undone.

? If the Waypoint to be deleted is between two other Waypoints, those two will be joined.

13.8.f To edit an existing Route

Open Route Planning.

In the Route List panel select the name of the Route you wish to edit.

Click **Edit**. This brings up the Route Editor Window.

Click **Show** to display the route on the map.

Follow the instructions above for adding Waypoints, changing name, moving, or deleting Waypoints.

Click **Save** to store the route.

13.8.g To delete an existing Route

Open Route Planning.

In the Route List panel select the name of the Route you wish to delete.

Click **Delete**, the following confirmation window is displayed.

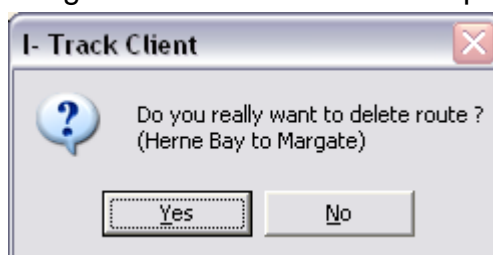


Figure 110. Confirmation of delete Route message.

Click **Yes** to confirm delete route message.

Note: This action cannot be undone.

13.8.h To close the Route Planning window.

Click **Close** or the X at the top-right of the Route Planning window.

Alternatively, open the **Tools** menu and deselect the **Route Planning** item.

13.9 Measurement

The Measurement menu allows measurement of the total distance along a path comprising two or more points.

13.9.a To open Measurement

Click **Tools**.

Click on **Measurement**. This opens the Measurement window.

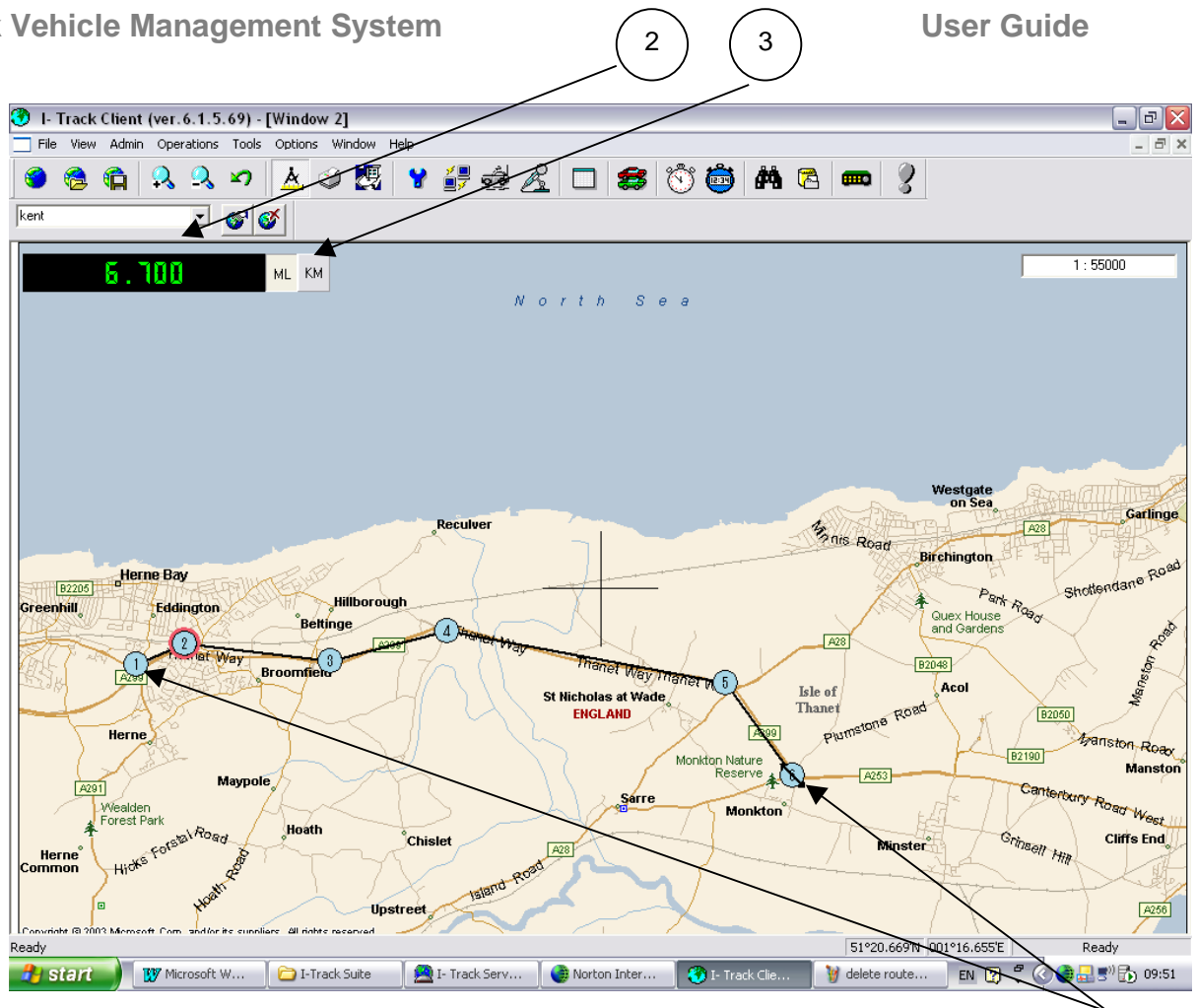


Figure 111. The Measurement window opens along the top left hand side of the main window.

1. Line marking the distance between the six points you are measuring
2. Distance between the six points/unit of measure
3. Unit of measurement

13.9.b To measure the distance along a path of two or more points

Open the Measurement Window.

Move the cursor to the first point. Click at that point. The cursor will appear as a small yellow circle.

Repeat the above for each point along the path you are measuring. The Distance panel shows the cumulative distance of the path.

When done, click **Measurement** again.

Note: To change the units of measure, click the buttons next to the measurement distance and select the desired unit, either Miles or Kilometres.

13.9.c To delete Measurement points

Right-click any measurement point to delete that point.

Notes:

- ? If a measurement point to be deleted is between two other measurement points, those two will be joined.
- ? The measurement window is a fixed window, which appears in the top-left corner of the map view. The channel States window (if displayed) must be moved or closed as it will obscure the view of the Measurement window.

13.9.d To close the Measurement window.

To remove the measurement window from the display, open the **Tools** menu and deselect the **Measurement** item. Alternatively, click on the Measurement toolbar button.

Chapter 14 - Options menu

? Select Language...

14.1 Select language

The Select Language menu allows the user to select a different language to be used within the I-Track software from one of the available languages.

14.1.a To open the Select Language window

Click **Options** then **Select Language...** the following window will be displayed.



Figure 112. Select Language window,

Select a language from the languages available in the drop down box. Click **OK** to save new language, the following window is displayed.

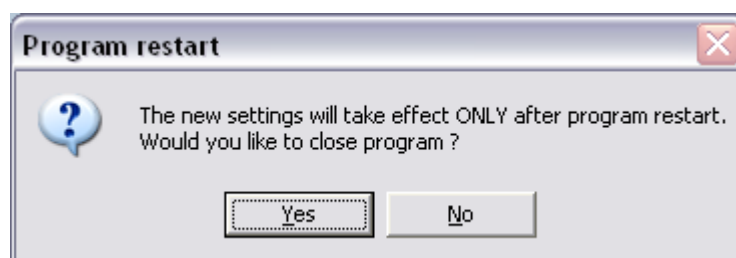


Figure 113. Program restart window.

Click **Yes** to restart program, the I-Track client will then be shut down and need to be restarted. When restarted, the client interface will be displayed with the language selected.

Note:

The Server program is not multi-language only the Client and Centre is multi-language compatible.

If another language is selected, to return to the previous language you must navigate to the Options menu and then the Select Language item in whatever language is describing them.

14.1.b To close the Select Language window

Click **OK** or **Cancel** or click the X on the top right-hand corner of the window.

Chapter 15 - Window menu

- ? Cascade
- ? Tile Horizontally
- ? Tile Vertically

The window menu allows the user to customise how the map views are displayed. When more than one map view is opened, the user is able to select cascaded, horizontally tiled or vertically tiled windows.

15.1.a To Tile active windows

Click **Window**.

Select one of the tiling options: **Horizontal**, **Vertical**, or **Cascade**.

15.1.b To select an active window

All active windows will be listed below the tile menu options. Select the required window if no tiling options are required.

Chapter 16 - Help menu

- ? About I-Track Client...
- ? About Microsoft MapPoint...

16.1.a To display the Client software version number

Click **Help**.

Click **About I-Track Client...** the following window is displayed showing the version number of the software.



Figure 114. About I-Track Client software version.

Click **OK** to remove the message box.

16.1.b To display the Microsoft MapPoint Data version number

Click **Help**.

Click **About Microsoft MapPoint...** the following window is displayed showing the version number of the software.

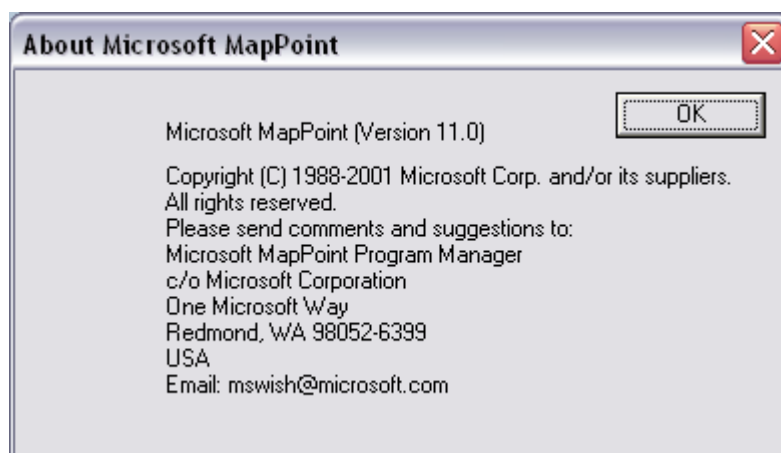


Figure 115. About Microsoft MapPoint software version.

Click **OK** to remove the message box.

Chapter 17 - Other Menus

17.1 Bookmark

The Bookmark feature allows the user to save places on the map as a Bookmark. When a bookmark is selected, the client map window will re-centre on the selected place, at the scale selected when the Bookmark was saved.

17.1.a To save a Bookmark

Centre and scale the map on the place/area you want to add as a bookmark.

Enter a name or description for the place or area as shown (2) and press the Enter key on your keyboard.

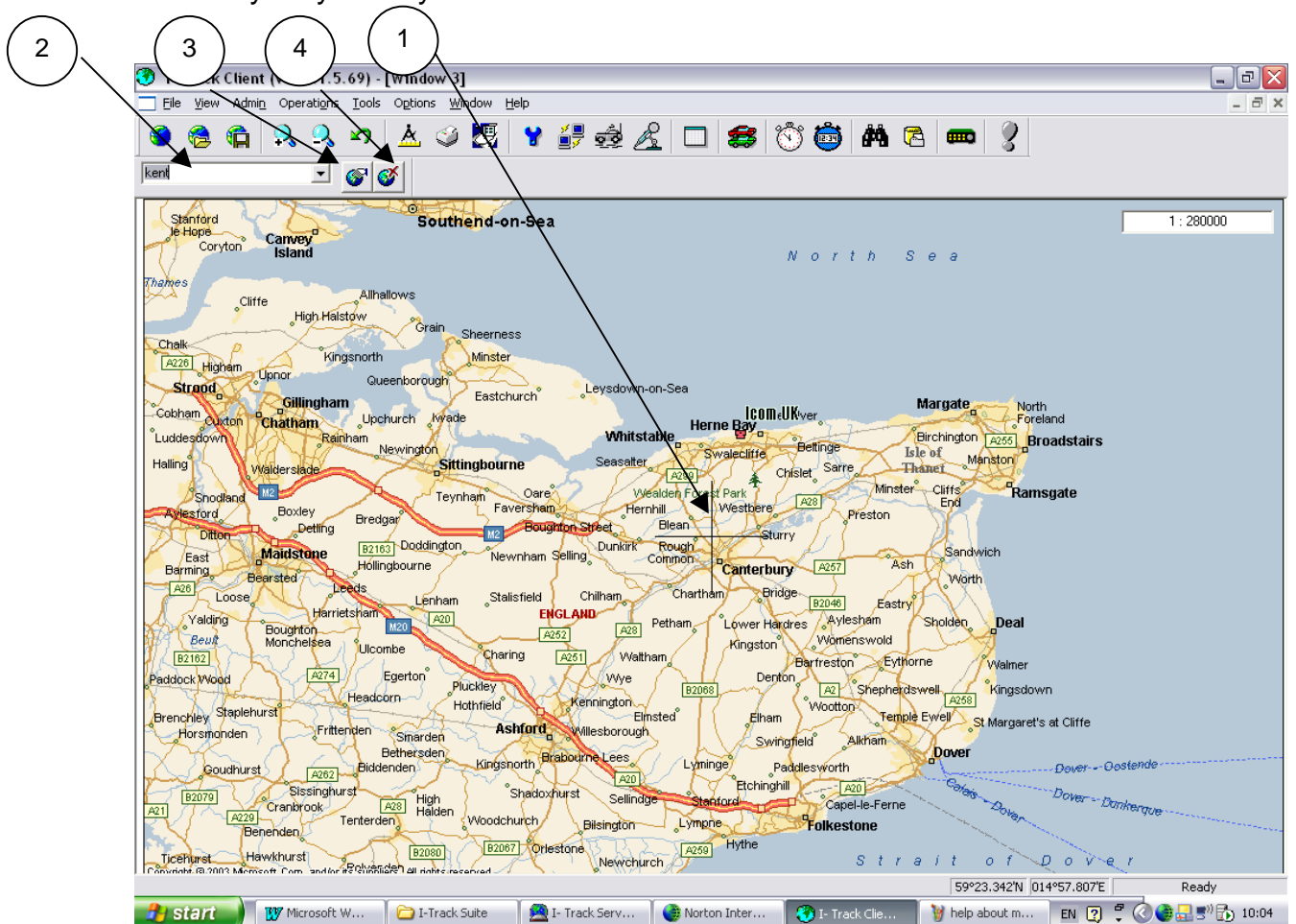


Figure 116. Bookmark window

1. Centre Map Crosshair
2. Bookmark Text
3. Go To Bookmark button
4. Delete Bookmark button

5. Press Enter, this saves the bookmark.

17.1.b To open a Bookmark

Click the drop down button next to the Bookmark text.

Select the Bookmark required.

Click **Go to Bookmark** button.

The map will re-centre on the bookmark.

17.1.c To delete a Bookmark

Click the drop down button next to the required Bookmark text.

Select the Bookmark you want to delete.

Click the **Delete Bookmark** button. The following window will appear.

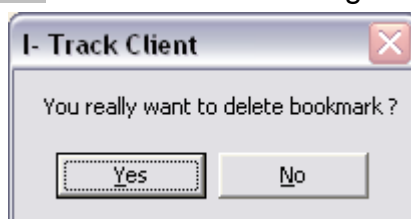


Figure 117. Confirm delete bookmark dialogue.

Click **Yes** to delete the Bookmark or **No** to cancel deletion.

User Bookmarks are useful if you need a quick way to find locations on the chart. By creating a Bookmark at a certain point, you can then use the **Go to Bookmark** button to return to that point at any time.

17.2 Scale Toolbar

The scale toolbar is displayed just below the scale level window in the top right side of the client display. This toolbar auto-hides if the cursor is not over the scale window.

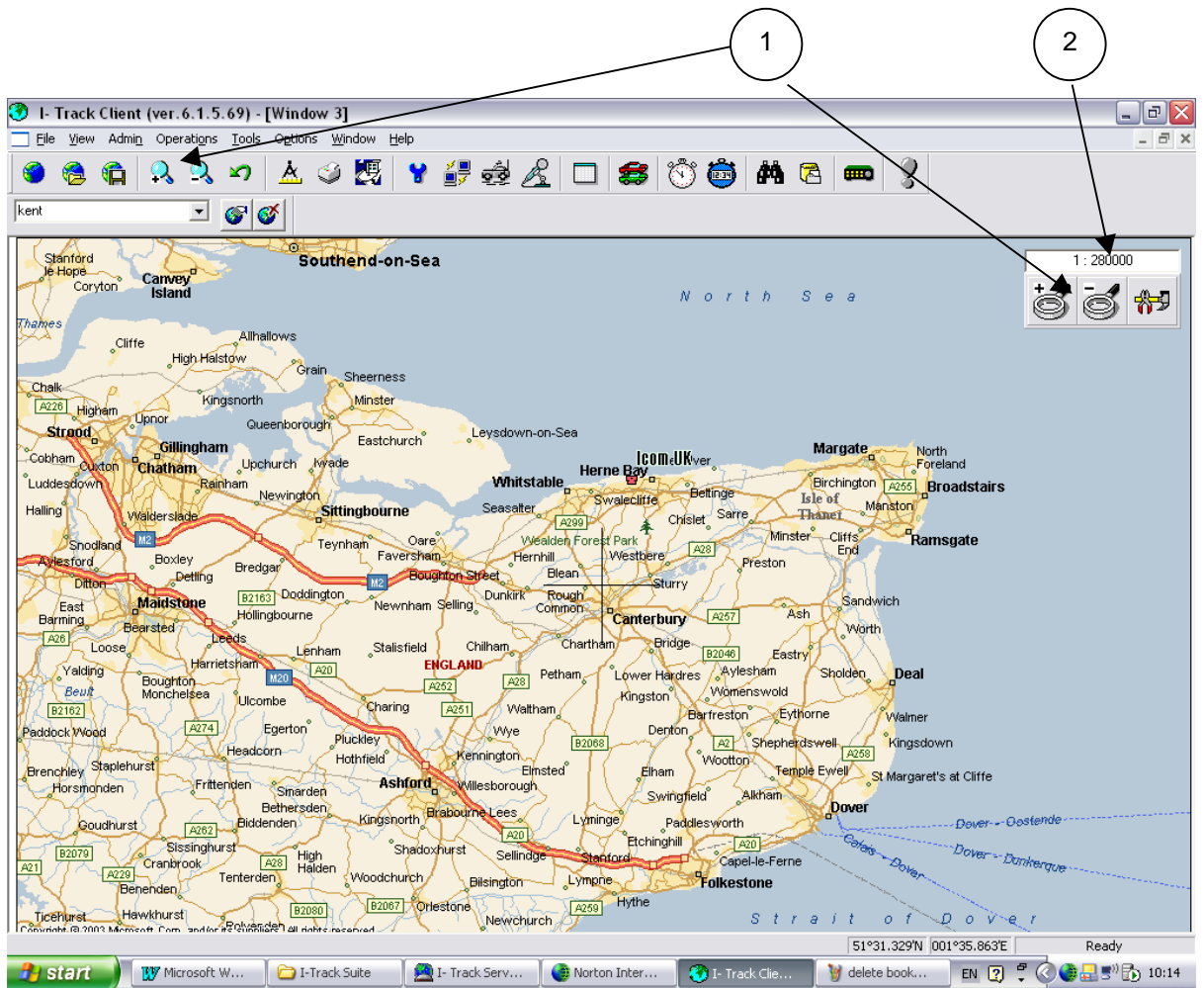


Figure 118. Scale Toolbar window

1. Scale Toolbar, Zoom In/Zoom Out
2. Scale Window.



Clicking the + or – magnifying glass will increase or decrease the zoom level, this can also be done using short cuts keys F5 or F6 or by pressing the + or - magnifying glasses on the toolbar.



Chart setting. This feature is not fully implemented in version 6.1.5 of I-Track.

17.3 Last Position Request



The Last Position request option is a toolbar button, clicking this option displays the following window.



Figure 119. Last Position Request Window





















This option lets an operator decide to display old positions on the map when logging on to I-Track. Click the Reject if older than the threshold tick box and select a time period. As in the above example, when logging on to I-Track any position older than 15 minutes will not be displayed.

Click **OK** to save and **Cancel** to exit.

Chapter 18 - Toolbar Buttons

Twenty three toolbar buttons provide quick access to commonly used menu functions.

18.1 Button Descriptions

	New Map
	Open Map
	Save Map.
	Zoom IN.
	Zoom OUT.
	Back.
	Measurement.
	Print
	Route Planning.
	Send Status.
	Send Text.
	GPS Request.
	Call window.
	Last received status
	Commands
	Poll Manager
	Poll all once
	Go To Vehicle
	Last Position Request
	Channel States.



Alarm/Alarm received



Go To Bookmark.



Delete Bookmark.

Part Six - Troubleshooting

Chapter 19 - Troubleshooting Procedures

19.1 Problems displaying vehicles:

19.1.a Vehicles do not appear in the chart window:

Wait a few minutes. The GPS modules in the vehicles sometimes need a little time to get a good satellite fix.

Under the Operations menu, click **Go To Vehicle** and select the vehicle required, then click the **Go To Vehicle** button, the map will centre on the vehicle. If that does not work, follow the steps below.

Check that the vehicle has an Automatic Poll Timer set. To do this, select the Operations menu, then click **Automatic Poll Manager**.

Under the Operations menu, click **History Manager**, click **Server**. Select the Vehicle ID of the vehicle you wish to view. Select a time interval. Click **OK**. This will display vehicle position data even if the vehicle has a poor GPS fix.

Verify that the vehicle's radio is switched ON and is connected to a GPS.

Check Window Setup and verify that the required vehicle is selected to be displayed in the current map window.

Consult your system Administrator to log in as an Administrator or as "root" and then follow the steps below.

Under the Administration menu, click **User Manager**. Note the User ID of the user who wishes to view vehicles.

19.1.b You updated vehicle settings but saw no change:

In Vehicle Setup (Part Five -11.1.c above), verify that you chose the correct vehicle ID.

19.2 Problems with vehicle tracks:

19.2.a You requested the track of an active vehicle but it did not appear:

Open Vehicle Position Setup (Part Five -13.4.a).

Verify that you chose the correct Vehicle ID for the vehicle you are tracking.

Verify that "Track Points" is a positive number for the vehicle you are tracking.

19.3 History Manager problems:

19.3.a Requested history data are for incorrect time interval.

Verify that you entered the time interval using the 24-hour clock.

19.3.b No history data is shown / data for the wrong vehicle is shown:

In the History Manager (Part Five -12.3) check the Vehicle ID.

Verify that the vehicle was actually sending data for the specified interval of time.

19.4 Problems with the Chart Window:

19.4.a The chart detail you want does not show:

Zoom in or out (F5 or F6) (Part Five -10.11 and Part Five -10.12).

19.5 Problems with Channels:

19.5.a No data received:

Verify that the Type of Channel, COM port, and Baud rate settings are correct.

In Vehicle Manager (Part Five -11.1), verify that the Channel ID associated with each vehicle is correct.

Check all connections to the Client computer, Server computer and to the vehicle hardware, in that order. If other Client computers exist and they are correctly displaying data for the same vehicle, the problem is most likely with your client or a network connection between it and the ITrack Server.

Chapter 20 - Icom (UK) Ltd. Warranty and Liability Information

Icom (UK) Ltd. warrants the I-Track software, GPS receiver, and accessories to be free of defects in material and workmanship for a period of one year from the date of original purchase. This warranty applies only to the original purchaser of this product.

In the event of a defect, Icom (UK) Ltd., at its option, will repair or replace the product with no charge to the purchaser for parts or labour. The repaired or replaced product will be warranted for ninety (90) days from the date of return shipment, or for the balance of the original warranty, whichever is longer.

20.1 Purchaser' s remedy

Purchaser' s Exclusive Remedy under this written warranty or any implied warranty shall be limited to the repair or replacement, at the option of Icom (UK) Ltd., of any defective part of the transceiver or accessories which are covered by this warranty. Repairs under this warranty shall only be made by an authorised Icom (UK) Ltd. dealer. IN NO EVENT SHALL ICOM (UK) LTD BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES OR FOR THE REPRESENTATION OF RETAIL SELLERS.

20.2 Purchaser' s duties

Icom (UK) Ltd will not be responsible for any losses or damage to the product incurred while the product is in transit or is being shipped for repair. Insurance is recommended.

20.3 Limitation of implied warranties

Except as set forth above, all other expressed or implied warranties, including those of fitness for any particular purpose and merchantability, are hereby disclaimed. This warranty does not cover damage resulting from negligent installation, improper operation, unauthorised repair and/or substitution of component parts other than those authorised by Icom (UK) Ltd, submersion, lightning, or fire.

Some states do not allow limitations on warranties, so the above limitation may not apply to you.

20.4 Exclusions

This warranty does not cover the following:

Any damage due to accident, resulting from inaccurate satellite transmissions. Inaccurate transmissions can occur due to changes in the position, health, or geometry of a satellite.

Any damage due to shipping, misuse, negligence or tampering or improper use.

Servicing performed or attempted by anyone other than an authorised Icom (UK) Ltd representative.

Glossary

ACK: Acknowledgement signal. A confirmation message, indicating that an incoming message was received and understood. See also: NACK

Administrator: A type of user that has complete access to I-Track settings. The Administrator performs administrative functions such as editing communication channels, adding or deleting users and vehicles, creating bus routes, etc.

Base Station: Radio equipment (in the case of this manual, an Icom IC-F1610) located typically at the operations centre and connected to the Server computer.

Base Station Computer: The computer that runs the Server software and connects to the base station. It sends requests for information to the vehicle radios and receives the information they send. The Base Station Computer may include the Client software and/or provide a network connection for additional users.

Baud Rate: The speed of data communication (bits per second).

Bus Stop: A specified Waypoint used in Route Planning (Part Five -13.8). When you define a Waypoint as a bus stop along a particular route and assign that route to a vehicle, I-Track will enter a code in the history database when the vehicle is within a defined radius of the bus stop. (Not available in version 6.1.5 of I-Track)

Case Sensitive: User names and passwords for example are case sensitive in I-Track. This means that, once entered initially, they must be entered identically in the future. To illustrate, "JoeBloggs" is not the same as "Joebloggs".

Center: (American English) See Control Center.

Centre: (British English) n. middle of; v. to place in the middle. See also Control Center.

Client: The machine/software combination providing the visual display and graphical interface. Information is retrieved from the Server based on user settings and displayed in graphical and/or textual form on the Client screen.

Control Center: The software allowing the Administrator to configure COM port settings, channel/Client settings etc.. The software uses the American spelling of the word centre (center). This manual uses both spellings interchangeably.

CTCSS: Continuous Tone Coded Squelch System. A method of "quieting" a radio channel, which is shared by many users, by use of a sub-audible tone, detected by the receiving equipment.

Data Bits: The number of bits of data transmitted during data communication. Possible values are 4, 5, 6, 7, and 8.

Dongle: Hardware security device, normally connected to a PC's serial or parallel port. In the case of the I-Track system described here, the dongle is for the PC's parallel port.

FFSK: Fast Frequency Shift Keying. A method of transmitting data over a radio channel.

GPS (Global Positioning System): A constellation of 24 satellites that orbit the Earth 24 hours a day. They continuously transmit radio signals with precise time and positioning information to the entire surface of the planet.

Host: Computer or machine

IP Address (Internet Protocol Address): A 32-bit number, usually represented in dotted-decimal form (e.g. 162.214.5.1) representing a single computer on a network.

IP (Internet Protocol) **Port Number:** Defines how a computer sends and receives data over a network.

NACK: Negative Acknowledgement signal or Not Acknowledged. An indication that a message was received (either in whole or in part) but was not understood or could not be processed or acted upon. See also: ACK

User: A type of I-Track user that has limited access to the system settings. Users can monitor vehicle movements, but have no rights to change system settings or to perform any administrative functions.

Parity Bit: Part of a digital message used as a per-character validity check on data transmissions. Possible values are none, odd, even, mark, and space.

Port number: A part of the TCP/IP communications protocol. Client and Server must "talk" (and listen) on the same port number for a given service to function.

Server: The machine/software combination that handles all administrative functions for I-Track. The Server receives GPS data from vehicles, sends that information to users (operators) and vice-versa. The Server also maintains all I-Track databases.

Stop Bits: One or more extra bit(s) added per-character to a data transmission, used to detect the end of each character in the data stream. Possible values are 1, 1.5, or 2.

Synchronous: A type of data link configuration for transmission of data at regular, preprogrammed intervals.

TCP/IP (Transport Control Protocol/Internet Protocol): Communications standard used to enable computers to communicate over a local network or the Internet.

Vehicle ID number: An identification number assigned to each radio unit in the system. These ID numbers are assigned in ranges depending on the function of each radio.

Waypoint: The individual points within a route (see Route Planning, Part Five -13.8, page 101).

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