SMARTTRAC™

USER REFERENCE MANUAL

ABSOLUTE COMMUNICATIONS LIMITED

www.AbsoluteCommunications.com

Product Version: 4.52

SMARTTRAC WORKSTATION

USER REFERENCE MANUAL

Introduction

The SmartTRAC Product has been modeled around well-known Windows applications and is designed to be straightforward to learn and remember.

This documentation provides an overview of user functions in the system, and how to work through commonly used scenarios. It is recommended that you become comfortable with basic operations then experiment with the tools at your own pace. Experimentation is recommended as the fastest way to becoming an experienced operator.

The Track Explorer is a powerful and flexible tool for monitoring the activity of fleets of mobile units. Each mobile operator is fitted with an automatic location communicator so that its position and movement can be tracked on screen against a background map of your region.

The Track Explorer window provides a comprehensive range of tools for working with the map and the mobiles. You can generate current and historical position data for mobiles of interest, and view animations of past tracks. Depending on your operator privileges the Track Explorer also allows you to modify mobile reporting rates and map characteristics.

NOTE: Throughout this document the terms unit and mobile are used interchangeably to refer to the mobile entities (vehicles, personnel or vessels) being tracked.

Starting SmartTRAC Workstation

If SmartTRAC has not already been installed on you will need to do this first.

To check, open the folder shown below from the [*Start*] menu. If the "SmartTRAC" item is missing please refer to the final chapter *Installing SmartTRAC.* After installation you can return to this point to begin using the product.

To open SmartTRAC Workstation…
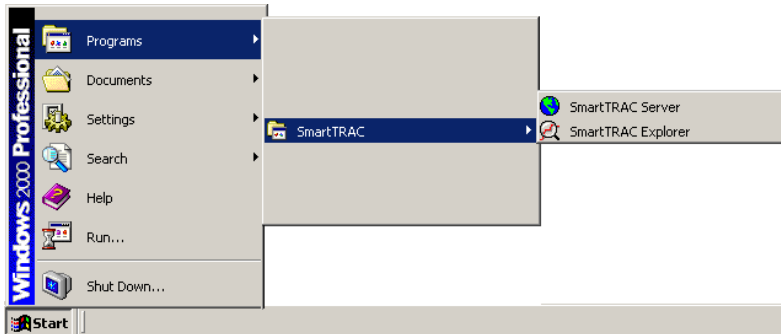
Select the "*SmartTRAC Explorer*" item from the [Start] menu as shown.

To open SmartTRAC more easily, you can create a shortcut on your desktop or TaskBar. To do this;

- Click on the "SmartTRAC Explorer" icon as shown above

- Drag this onto either the *Desktop* or *TaskBar*.

- The example below shows the SmartTRAC Workstation icon dragged to the immediate right of the windows "Start" menu for easy access.

(Please note; some earlier Windows versions do not support this feature)

Logging On
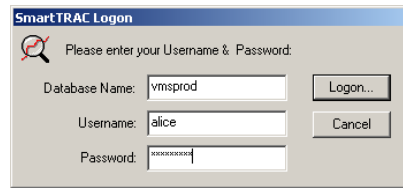
While SmartTRAC is loading, you may be presented with a Database Authentication dialog.

NOTE: If you do not see this dialog, your SmartTRAC system is either configured to use your Windows Logon for all security, or you are using a single user standalone system.

When this dialog is displayed you must enter the following:

1. The Database Name. This determines which SmartTRAC database you will be logged into. Most organizations have only one SmartTRAC database, but in some cases separate databases are configured for training purposes or for each region/division. If you are unsure which database name to use, contact your Systems Administrator.

2. Your username will default to the same setting used during Windows NT or Windows 2000 logon. In most cases this is also your SmartTRAC username. If your Systems Administrator has assigned you a different username for SmartTRAC use, you will need to enter this instead.

3. You must enter a password. Depending on how your systems administrator has configured the SmartTRAC system this is usually the same as your Windows NT or Windows 2000 password. If not, contact your systems administrator for further details on the correct Username & Password to use when logging into SmartTRAC.

Selecting a Map Backdrop

Once SmartTRAC has completed loading, you will be presented with the main Track Explorer window.

1. If you have purchased product directly for Standalone use this will show information from the *SmartTRAC Sample Database*.

2. If you are working in a multi-user system, your Systems Administrator will have configured a SmartTRAC database for use. This will include information on your organization's fleet.

3. In either case; you now need to select a map Backdrop. To do this; click the [Open] button on the toolbar.

4. The *Open Dialog* is then displayed. You can select any compatible mapping file for use with SmartTRAC. Compatible files end with the extension "WOR" (Workspace) and contain data in the MapInfo Workspace Format. When SmartTRAC installs; a very basic worldmap is present; this has the name "LAND.WOR". If you do not have any specific mapping files, open "LAND.WOR".

5. When loading Map Files you may see the message "*This Workspace is not Compatible with Track Explorer…*". If this occurs; copy the message down and pass to your Systems Administrator or Map Supplier. Some Mapinfo Workspace files contain features not supported by SmartTRAC, and need to be slightly modified before they can be opened in Track Explorer.

6. Once the Map has loaded, you will see a screen similar to the one below (the exact screen will depend on which database and map set you are using).

USER REFERENCE MANUAL
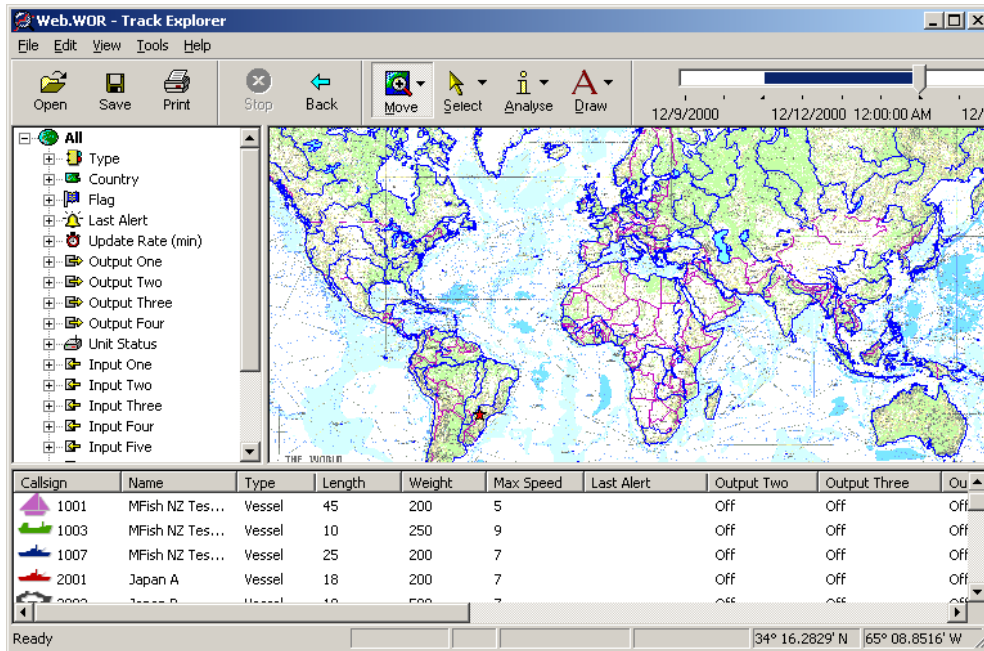
Track Explorer Program Window

The Track Explorer program window includes the following components, which can be resized to suit your working preferences.

Toolbar

Mobile management tools and utilities are available in the toolbar below the menu bar. The toolbar contains four separate tool palettes, which are separated by vertical lines on the toolbar.

The tool palette can be dragged away from the toolbar and on to the map window if required. To return a palette to the main toolbar just drag it or double-click the palette's title bar.

The available tools are as follows:

Open	Allows you to open a previously saved workspace into the program window. A saved workspace includes a view of the map with track presentation & label options.
Save	Allows you to save the contents of the map window exactly as they are (including map settings, and labels) so that they can be reviewed during a later session.
Print	If a printer is connected to this PC, you can use this option to print the displayed map and mobile information.
Move	This is a menu of tools for moving around the map
Select	This is a menu of tools for selecting mobiles displayed on the map and exporting data to other applications
Analyze	This is a menu of tools that allow you to make distance measurements, label information displayed on the map and show/hide various detail levels of information.
Draw	This is a menu of tools that allow you to add your own text and graphics to the map. Depending on your operator privileges you can save your graphics so that they are displayed every time you use the Track Explorer.
Back	Use this option to return to the previous view of the map.
Stop	Use this option to immediately cancel the current action; for example, loading a selection of mobiles. The Stop button immediately stops the activity but does not restore any previous settings.
Date Bar	This slide bar allows you to select a date range for historical analysis and animations. Right click on this tool to see further menu options.

Note: Only one tool from the above menus can be active at any one time; the active tool is highlighted on the menu bar.   For example;

The [Move]→ [*Zoom-In*] tool is selected.

The [*Analyze*] → [*Ruler*] tool is selected.

Filter

The Filter allows you to view and select mobiles of interest. It is operated in the same way as the Windows Explorer is used to select files and programs.

Because Track Explorer is capable of monitoring several thousand mobiles, the available units are sorted into groups according to attributes such as their country of origin, type, and length. This allows you to locate a mobile of interest much more quickly than searching through the entire list.

The available groups of mobiles are displayed at the first level of the Filter window; groups that have special icons are shared with other SmartTRAC users and cannot be changed, except by the system administrator.

However, you can set up your own groups of frequently monitored units. These groups can be changed as often as you like. They are saved each time you exit Track Explorer so that they are available during future sessions by you and any other users connected to the same database.

Within each group there are several categories, which further sub-divide the available mobiles (for example, one category for each unit type) . You can add and remove categories of mobiles in your personal groups as required (you cannot modify categories within shared groups).

Unit List

The unit list is displayed across the bottom of the map. It displays the mobile units that are currently available for display on the map.

Under normal circumstances the unit list contains only a small number of the total mobiles in the system. This is because the Filter window is usually set up to sort and filter all mobiles so that only mobiles of interest are displayed.

1. The exact list of columns depends on the database in use. You may see a different selection of Mobile Attributes to those shown above.

2. You can sort the list by any attribute. To do this; click on the column heading. You can also right click (anywhere in the unit list except directly on a mobile) and choose an [*Arrange Icons by*] option.

3. You can simplify the view to icons only. To do this right click (anywhere in the unit list except directly on a mobile) then select a [*View*] option.

4. To jump quickly to a mobile if you know the short name (the first column) enter the first letter. The list will then scroll to the appropriate point.
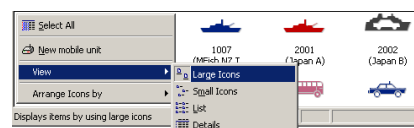
Map window

Mobiles selected for tracking are displayed on the in the map window. The positions are updated automatically whenever new reports are received.

You can change the basic characteristics of the Map Window by right-clicking anywhere on the map and selecting one of the menu options. The [*Move*], [*Select*], [*Analyze*] and [*Draw*] tools allow you to modify the presentation and configuration of the Map Window in more detail.

Displaying Mobile Units

Displaying Mobiles of Interest in the Unit List

Use the groups and categories displayed in the filter window to change the contents of the unit list as follows:

- Click on the *All* option to display all mobiles in the unit list

- Click on a category to see only the mobiles in that category in the unit list

- To list the members of more than one group or category press the [*Ctrl*] key then click on each group/category in turn.

- If you select multiple folders within a group this means to show mobile units in all categories selected. For example; selecting the types; *Bus* & *Car* will show any mobiles that are either Busses or Cars.

- If you select multiple folders across categories; eg. Type="*Vessels*" and Country="*Australia*" then only mobile units where type "*Vessel*" AND with a country of "*Australia*" will be displayed in the unit list.
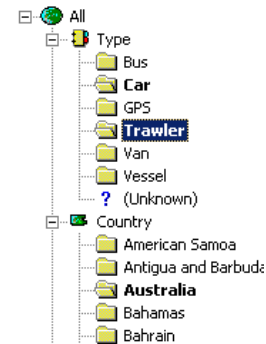
Displaying a Unit on the Map

You can display the current geographic location of mobiles on the map in several ways:

- To show the current location of all mobiles in your fleet, 'drag-and-drop' the [*All*] icon onto the map window.

- To show a section of the fleet, 'drag-and-drop' a category folder from the filter list directly onto the map window.

- To show specific mobile units, first use the filter (as described above) to select part of the fleet. Then use the Unit List (bottom of the window) and 'drag-and-drop' a specific mobile units from the mobile list onto the map window (or)

- Double-click on the mobile in the unit list (or)
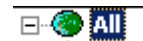
- Right-click on a mobile and choose the "Explore tracks" menu option

The selected unit is displayed at its current location on the map, and replaces any previously displayed mobiles.
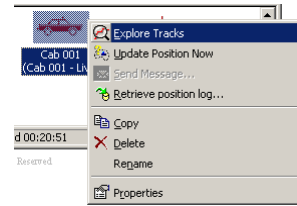
Displaying multiple units

To select multiple adjacent mobiles from the unit list:

- Click and drag the pointer across the mobiles of interest (for example from top-left to bottom-right). You will see a block of mobiles selected similar to the example shown.
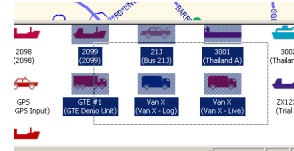
To select multiple mobiles at random:

- Press the [*Ctrl*] key while clicking in turn on each unit of interest. You will see a block of mobiles selected similar to the example shown.
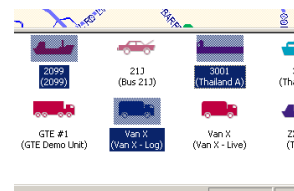
When all units have been selected "drag-and-drop" the units to the map window, or right-click and choose the [*Explore Tracks*] option. The new mobiles replace any selection previously displayed on the map.

If you want to select all mobiles in a particular group or category:

- Drag-and-drop the folder of interest from the filter window to the map window.
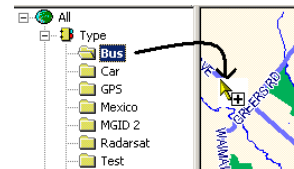
Displaying a group of mobiles is different from selecting the same mobiles individually.   The difference is best illustrated by an example. If you select all busses in the sample database individually (from the unit list), then new mobile units were added to the fleet the map selection does not change. It shows only the units that were specifically selected for display on the map.

However, if you select the "*Bus*" folder, as shown above, then any new mobile units added of type "*Bus*" are automatically displayed (added) to the map.

Displaying groups is particularly useful when the selected group represents a status attribute of the mobile (e.g. reporting rate, a digital input sensor such as door open/door close status). For example some system configurations have mobile data terminals connected to the mobile unit. These configurations include additional folders indicating mobile status such as on/off-duty, type of cargo or area of operation.

By using the techniques illustrated it is then possible to monitor, for example, all off-duty vehicles. As drivers change status through their mobile data terminals the map automatically changes to show the appropriate mobile units.

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Viewing a Different Part of the Map

The Move tools menu is used to navigate within the map window. This includes zoom operations and selecting a specific map view based on known coordinates.

Zooming In to the Map

Select "*Zoom In*" from the Move tool menu.

The shape of the pointer changes to indicate that the Zoom In tool is active.   While the Zoom In tool is active you can:
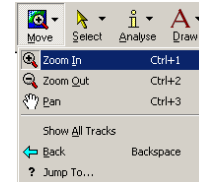
- Enlarge a single point of interest by clicking the Zoom In pointer at that point on the map. This redraws the map at twice the scale and positions the selected point is at the centre of the map window.

- Enlarge a region of interest by clicking and dragging the Zoom In pointer across (for example, from the top, left-hand side to the bottom, right-hand side of) the area of interest. This redraws the map so that the selected area of interest fills the map window.

- Use a combination of these techniques to size the map as required. Switch to another tool when you're finished with this tool.

- *NOTE: If your mouse has a Scroll Wheel you can use this tool by clicking in the map windows, then scrolling forward to zoom-in or backwards to zoom out.*

Zooming out from the Map

Select "*Zoom Out*" from the Move tool menu.

The shape of the pointer changes to indicate that the Zoom Out tool is active. While the Zoom Out pointer is active you can:
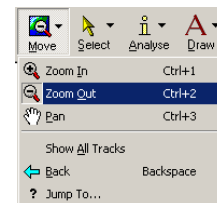
- Reduce a single point of interest by clicking the Zoom Out pointer at that point on the map. This redraws the map at half the scale and positions the selected point is at the centre of the map window.

- Reduce a region of interest by clicking and dragging the Zoom Out pointer across (for example, from the top, left-hand side to the bottom, right-hand side of) the area of interest. This redraws the map so that the area currently displayed in the map window is as small as the selected area.

- Use a combination of these techniques to size the map as required.

- *NOTE: If your mouse has a Scroll Wheel you can use this tool by clicking in the map windows, then scrolling forward to zoom-in our backwards to zoom out.*

Using the Pan Tool

Select "*Pan*" from the Move tool menu. The shape of the pointer changes to indicate that the Pan tool is active.
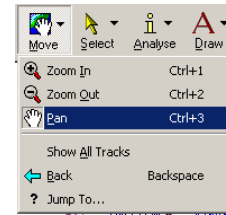
- Click and hold the left-hand button of the mouse while moving the pointer in any direction. The map slides across the map window in the same direction as the pointer.

- Release the mouse button when the map is positioned as required.

- You can continue to use the Pan tool to reposition the map within the map window. Switch to another tool when you're finished with this tool.

- *NOTE: If your mouse has a Scroll Wheel you can use this tool by clicking once on the scroll wheel button, then moving the mouse. The map will pan to follow the direction of mouse movement.*

Other Options

Back. Select this to cancel the last map movement command and restore the map to the previously displayed view.

Show All Tracks. This option immediately resizes the map so that all selected mobiles can be seen.

Jump To. Displays a dialog allowing you to specify the map area to view, and options to change the map scale. To change the distance units (e.g. degrees, miles) use the [*Select*]→[*Map Properties*] menu option.
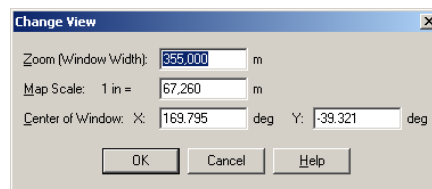
Automatic Map Zooming

When a new set of mobile unit(s) is placed on the map, SmartTRAC automatically sets the zoom and pan settings to ensure all mobiles within the new selection are visible.

When new data is received from mobile units, SmartTRAC redraws the display. However, in this case it does not alter the zoom or pan settings by default. If you would like SmartTRAC to automatically zoom and re-center the display when mobile units update; turn the [*View*]→[*Auto Follow*] option ON.

Auto Follow is particularly suited to display terminals that operate in unattended mode such as video projectors or flat panel wall displays. When activated, Auto Follow allows SmartTRAC to continuously adjust the display for optimum presentation of the selected mobile units.

Viewing Different Levels of Detail

Displaying a Mobile's Track

By default only the current location of a vehicle is displayed. Enabling the track display provides additional information based on the historical location and path of the vehicle. To display tracks:

- Open the [*Analyze*] menu, and click on [*Tracks*].

- The map is redrawn to include the route traveled by each mobile.

- To turn tracks off, select the [*Analyze*] → [*Tracks*] menu option again.
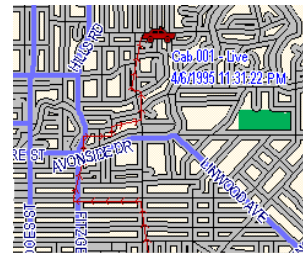
As tracks often overlap and double-back small arrows along the track are used to indicate direction. The mobile unit symbol at the end of the track (current location) is also orientated to show the direction of the mobile based on the last two position reports received.

Displaying the Location of each Position Report

Track data provides an overview of the history of a vehicle. For further detail on each position report received (the dots that the track is connecting) it is necessary to display position reports. To do this:

- Open the [*Analyze*] menu, and click on [*Position Reports*].

- The map is redrawn to include the location of the displayed mobiles at each position report.
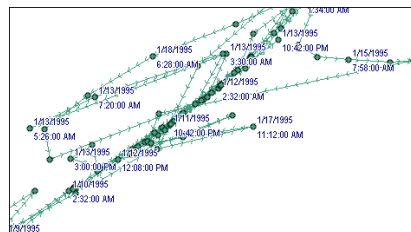
Displaying a Unit's Opportunity Ellipse

Opportunity ellipses identify the distance a unit could have strayed from its track according to its current speed. You can view the opportunity ellipses for a selection of mobiles as follows:

- If the mobile isn't already displayed on the map, add it to the map now.

- Open the [*Analyze*] menu and click the [*Ellipses (Routine)*] option to view ellipses for all displayed units.
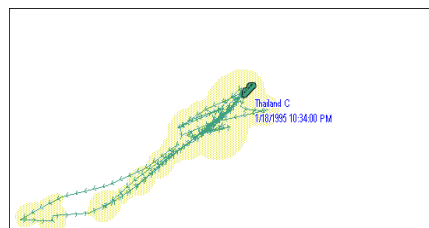
Viewing Sightings

Mobile Units typically report their position automatically. For surveillance orientated systems a facility is also provided to enter sightings, or manual positions, that can then be compared with the automatically received locations from mobile units. To display sightings:

- Open the [*Analyze*] menu, then click [*Sightings*].

- The map is redrawn to show the location of any sightings of the displayed mobile; a dot and description mark each sighting.

- Sightings are generally viewed in conjunction with the automatically reported track. The example illustrated shows two Sightings for "*Trial A*". One is consistent with the trace from automatic reporting, the other appears to be in error, or has been reported against an incorrect mobile designation. A surveillance operator would then use this information to investigate further why this discrepancy could have occurred.

- Systems configured to support sightings information also have a special mobile unit added. This is named "*Unresolved Sightings*" which is used to display sightings that are not presently assigned to any mobile unit within the fleet. Such sightings typically represent partial surveillance information; i.e. a vessel was spotted by a surveillance aircraft but could not be identified properly by international radio callsign.

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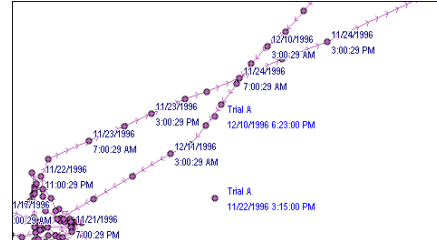
Selecting Mobiles from the Map

The Map Selection works in conjunction with the *Unit Filter*, *Unit List* and *Status* bar.

Selecting a Single Mobile

- Select the [*Pointer*] item from the [*Select*] tool menu.

- The shape of the mouse pointer changes to indicate the selection tool is active.

- Click on any mobile unit on the map.

- The selected mobile is highlighted on the map and the corresponding mobile in the unit list is also marked with a gray rectangle. Any previously selected mobiles are automatically deselected.
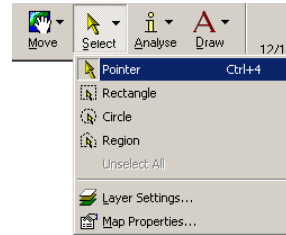
Selecting All Mobiles within a Rectangle/Circle

- Select the [*Rectangle*] or [*Circle*] item from the [*Select*] tools menu.

- The shape of the mouse pointer changes to indicate that the selection tool is active.

- Position the mouse pointer at one corner of the area of interest on the map.

- Click and drag across the area of interest on the map (for example from top-left to bottom-right).

- A rectangle or circle is drawn over the map; the boundary of which is controlled by the current position of the pointer with respect to the point you commenced dragging.

- Drag the pointer until the rectangle encloses all units of interest, then release the mouse button.
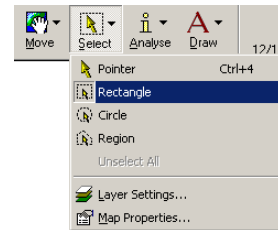
All mobiles within the boundary are selected and highlighted on the map. Also, the corresponding mobiles in the unit list are marked with a gray rectangle. Any previously selected mobiles are automatically deselected.

Selecting all Mobiles within a Particular Geographic Area

- Select the [*Region*] item from the [*Select*] tools menu.

- The shape of the pointer changes to indicate that the selection tool is active.

- Click the pointer anywhere within the zone of interest.
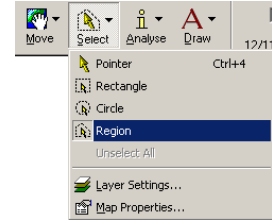
All mobiles within the zone are selected and highlighted on the map. Also, the corresponding mobiles in the unit list are marked with a gray rectangle. Any previously selected mobiles are automatically deselected.

- You can use any region style object from the map as a boundary area for this function.

- The [*Draw*] tools can be used to create custom regions for use with this tool. Drawing tools and their use are discussed in detail later in the section *Drawing and Annotating the Map*.

Map Selection and the Unit List

When selecting units on the *Map*, the same units are also highlighted in the *Unit List*. This allows cross comparison between geographic details (location) and the unit details such as name and mobile unit type.

This combination of *Map* and *Unit List* selection can also be used to more easily locate, view and edit mobile details. For example:

- Select mobile unit(s) on the map using individual, circle or rectangle tools.

- The same units are also highlighted in the Unit List (as gray rectangles)

- Right click on one of the selected units in the *Unit List*. The highlight color changes to blue, and a menu appears

- Select [*Properties*]
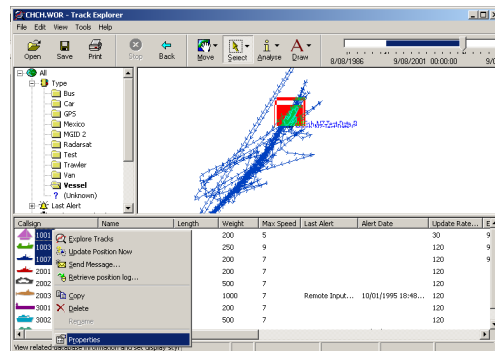
The Properties dialog opens:

- If multiple units are selected then the attributes that are common for all selected mobiles are displayed. Other attributes are left blank.

- If only one mobile is selected then full details for that mobile unit are displayed.

- Using the Properties dialog it is possible to edit the attributes of the mobile such as its name, symbol color or reporting rate. Further

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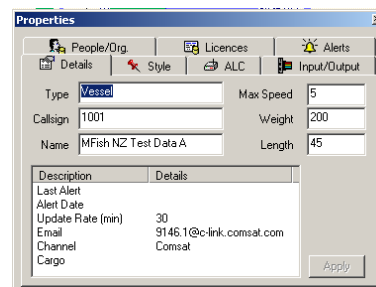
information on these functions is given in the section *Editing Mobile Details*.

- When you finish viewing mobile details you can close the [*Properties*] dialog to save space -- or leave it open to show the attributes of the selected mobiles automatically as the selection changes.

Attributes of a Mobile

A mobile displayed in the *Unit List* or in the *Properties* dialog has several categories of attribute.

Some are standard on all SmartTRAC systems - such as a mobile callsign, name and type.

Other attributes may be enabled or disabled by a systems administrator depending on the application SmartTRAC is configured for.

Although the exact set of attributes can vary, the most commonly configured attributes are:

Attribute	Description
Callsign	A short identifier for the mobile. Typically a Car Number, Vessel Radio Callsign or similar. The callsign should be a compact, but unique, identifier for the mobile unit.
Name	The full name of the mobile unit. This attribute is optional and does not need to be unique.
Type	The type of unit. The use of this attribute is at the discretion of the system administrator. Typically it is based on either the type of mobile asset (car, truck etc) or the usage of the asset.
Country	The country of origin/ownership of the mobile unit.
Flag	For maritime systems only; the flag of registration for a vessel
Length	For maritime systems only; the length of the vessel in meters
Weight	The weight of the unit in tons/tonnes
Max Speed	The maximum speed the unit can travel. Expressed in the distance units of the map. For example; miles/hour if the system map being used designates miles, km/hour if the map designates kilometers and knots if the map is measured in nautical miles.
Last Alert	The generated event "Alert" in relation to this unit. Alerts are significant events, as configured by a manager or systems administrator.
Last Alert Date	The date and time that the "Last Alert" was generated, in local time.
Update Rate	The automatic reporting rate for the unit in minutes. Units that report more often than once per minute have a decimal figure; for example 0.5 minutes = 30 second reporting.
E-Mail	The e-mail address of the mobile, if supported. Mobile units with an e-mail address can have messages sent to them in conjunction with your e-mail application.
Channel	The type of wireless network the mobile unit uses. If this field is not displayed only one network has been configured for use on this system.
Input #1,2,3 …	Digital or analog input sensors (temperature, door open/close etc.). Generally the systems administrator renames these as appropriate.
Output #1,2,3…	Digital outputs. For example an engine immobilize. The systems administrator will configure these as appropriate.

Status of Selected Mobiles

The Status Bar shows information on the current selection within the Map Window. The fields available (left to right are):

Ready	1.2 mi	195°	3.4 miles/hr	+0d 00:20:51	6° 29.9003' N	98° 54.3385' E

1. **Context Help**: Shows a short description of the current menu function. To activate this; open a menu and move the pointer over it. When no menu activity is occurring, this field shows "Ready".

2. **Range**: Active only when targets are designated on the map. To designate targets:

   - Use any [*Select*] tool to click on any mobile unit on the map. This designates the first target, known as the "A" target.

   - To define a second target (or "B" target), hold down the [*Shift*] key and click on another mobile unit.

   - If only an "A" target is specified, the current cursor location takes the place of the "B" target. In this way you can select one target, then move the mouse over points of interest. The display will then update the range from the selected target to the current point.

   - The units used are based on the map settings. For example; you would see "mi" (for miles) if the map is configured to measure distances in miles. "km" (kilometers) and "nmi" (nautical miles) are also common settings for distance measurement.

3. **Bearing:** Active only when targets are designated on the map.

   - The bearing from the "A" target to "B" target in degrees (or)

   - If there is no "B" target defined, this field shows the bearing from the "A" target to the current cursor location.

4. **Speed:** Active only when targets are designated on the map.

   - The current speed of target "A".

   - This is calculated from the last two position reports received from this mobile.

5. **Estimated time of Arrival (ETA):** Active only when targets are designated on the map.

   - The time taken to traverse from target "A" to "B" (or from target "A" to the current cursor location if no "B" target selected).

   - The ETA is shown in days, hours, minutes and seconds.

   - This function assumes the shortest possible path (known as a great circle route) is taken.

   - The speed of the unit is assumed to remain constant.

6. **Latitude:** The Latitude of the current cursor location. Normally this is expressed in the format Degrees, Minutes, Decimal Minutes (although a

systems administrator can reconfigure this to alternate formats). The latitude is expressed in the datum currently selected for map display.

7. **Longitude:** The Longitude of the current cursor location. Normally this is expressed in the format Degrees, Minutes, Decimal Minutes (although a systems administrator can reconfigure this to alternate formats). The longitude is expressed in the datum currently selected for map display.

Deselecting Mobiles

Selected mobiles are automatically deselected whenever you make a new selection.

- If you want to add some mobiles to the current selection press the [*Shift*] key while using the Select tools in the usual way.

- If you want to deselect all mobiles, use the [*Select*] → [*Unselect All*] menu option.

Monitoring Mobile Movement

The Analyze menu contains the tools used to display information related to a mobile's activity.   Before using these tools you should first display the relevant information from a selection of mobile(s) on the map.

Information Tool

The information tool is useful when there is too much data to display effectively. To use the Info tool:

- Select the [*Info*] tool from the Analyze tool palette.

- Click on an object of interest (e.g. a mobile unit or map location)
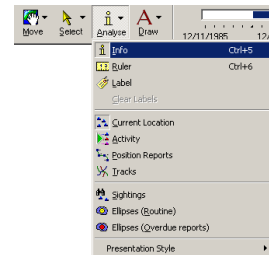
The info dialog box appears.

- If only one layer is selectable then this dialog will show the details of the object under the cursor location.

- If multiple layers have selectable objects, a summary is presented. Select a line in the summary list to show full details of the item in the selected layer:
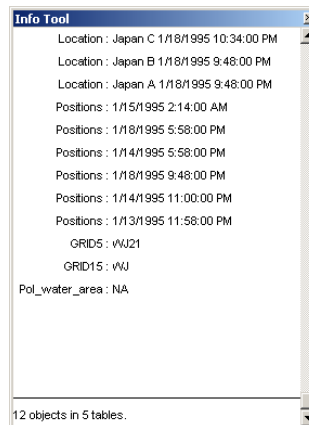
Measuring Distance

You can measure the distance between locations on the map as follows:

- Select [*Ruler*] from the [Analyze] tool menu.

Ruler	☒
Distance = 1,600 km (Spherical)	
Total = 8,600 km (Spherical)	
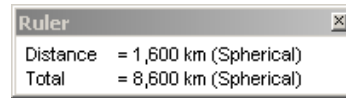
The Ruler dialog appears and the shape of the pointer changes to show that the Ruler tool is active. The Ruler dialog overlays part of the map and can be moved if it is hiding information of interest. Initially the values shown in the dialog are zero.

- Click on the first point of interest on the map. A square marker identifies the selected location.

- Move the pointer to the second point of interest.

The Distance shown in the Ruler dialog is updated as you move the pointer across the map. You can now continue to move the pointer around the map display, noting the distance between the fixed point and locations of interest on the map.

When you want to make measurements from a different point, double-click anywhere on the map, or press the Esc key. When you've finished measurements switch to a different tool and close the Ruler dialog.

If you want to reposition the map between measurements select the appropriate Move tool and move the in the usual way. The Ruler dialog remains active and you can resume measurements at any time by selecting the Ruler tool.

NOTE: When measuring distances you can press the "S" key, to snap to the nearest point (symbol, line etc). To disable snap, press the "S" key again.

Label Tool

You can add pre-defined labels to objects such as mobiles, tracks and reporting points on the map.
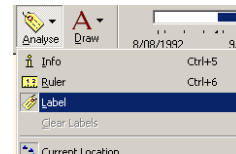
- Select "Label" from the [*Analyze*] tools menu. The shape of the pointer changes to indicate that the Label tool is active.

- Click the pointer on the object to be labeled. A text label appears beside the selected object on the map.

- Repeat until all objects of interest have been labeled.

- When you've finished labeling switch to a different tool.

Note: Advanced users can experiment with the custom labeling options in the Layer Settings dialog, available via the Select tools menu.

The text shown on the label is based on the map layer that is topmost at the location being clicked.

Some map layers are set to automatically label items at a certain zoom level (magnification). However, to reduce screen clutter most elements of the map backdrop will label only when you specifically use the Label Tool.

Once a label is placed you can drag it to a more convenient location on the map. An arrow will extend back to the original location.

A label can also have its content, size text style and alignment altered. To alter a label double click on the item, which displays the options in the Label Style dialog.
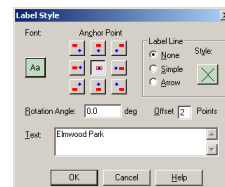
Clear Labels

When you want remove all labels from the map:

- Click on the [*Analyze*] tools menu and choose the [*Clear Labels*] option.

- Confirm that you want to remove all custom labels when prompted to do so.

Displaying Historical Data
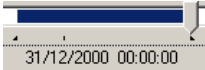
Date Bar
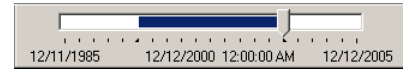
During routine fleet monitoring the Track Explorer displays and updates tracks on screen each time a position report arrives; i.e. an on-screen track represents a unit's activity from a particular point in time until now.

SmartTRAC also automatically records all data received from each mobile so that activity can be reviewed at a later date. The *Date Range* slider allows you to specify the date/time interval of interest when viewing positions, tracks or other information from a mobile unit.

The date bar works as follows:

- The blue area of the bar depicts the track duration. This area cannot be altered directly but moves automatically such that the slider is always with in the "*track window*" denoted by the blue area.

- The slider indicates where on the track the current location icons are displayed. Click and drag to alter the selected date as follows:

  - If the slider is located at the right edge of the track then the icons display the most recent position received within the selected date and time range.

  - Conversely, if the slider is at the left edge of the track the icons are displayed for the first position in the selected date & time range.

  - Placing the slider in any other position along the track causes the map to redraw with the icons showing the approximate geographic location of each mobile at the selected date and time.   The selected date and time is updated as you move and shown directly below the slider control.

  - *NOTE: The position approximation is made based on the nearest two positions received (by date and time) against the requested date. The algorithm used assumes that the mobile traveled in a straight line between the points. If the mobile unit reports infrequently, or position reports are widely spaces, this algorithm can produce results that are non-optimal. For example; placing a mobile between streets in a city or displaying a maritime asset on land (i.e. where the track goes from one side of an island to another). These limitations are caused by the resolution of the source data.*

Within SmartTRAC all dates and times are stored in the database in UTC (Universal Coordinated time) also known as GMT or Greenwich Mean Time. Before display the dates and times are converted to local time. This means that two users accessing the same database, but located in different countries or timezones, will see different date & times labels although the source data is identical.

To see which timezone your computer is configured for, double click on the clock on the Windows Taskbar. If you have default Windows settings this is located at the bottom right corner of your computer monitor.

This displays the following dialog. Select the "*Time Zone*" section to specify how SmartTRAC should translate dates and times from UTC to local time.
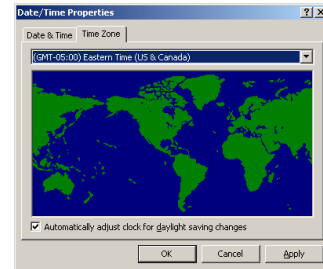
Changing the Time/Date Interval of Interest

You can change the active time interval directly as follows:

- Right-click on the *Date Range* slider and select the [*Date Range*] menu option.

- Set the track length (for example 2 weeks) and the approximate date of interest (for example 1 September 2000)
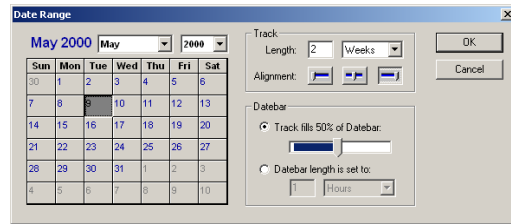
- The "*Datebar*" section permits the scale of the datebar to be specified. By default this is automatic. You can also specify an explicit scale; i.e. 1 Week, 3 Months as appropriate for the type of analysis being performed.

- The "Alignment" specifies where the icons are drawn relative to the track:

  This option starts the date range from the selected date. For example; selecting 1 Week from 1/Jan/2001 would result in a track that from 1 Jan to 7 Jan 2001 with the icons placed at 1 Jan 2001. *This method of display is suitable for display of historical tracks only.*

  This option centers the track on the selected date. Use this option where you want to see track immediately prior to and following a specific event. *This method of display is suitable for display of historical tracks only.*

  This option displays track history prior to the selected date. *Use this option when monitoring activity in real time.*

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Viewing which Mobiles were Active at a Particular Time

- Click on the date range slider and drag it left (to go backwards from the current date) or right (forwards from the current date). When the date and time of interest are displayed below the slide bar release the slider.

- Alternatively, you can use the Date Range dialog (above) to go directly to a specific date range and duration.

- The displayed mobiles are repositioned according to the retrieved data, or removed from the map if they weren't active during the selected time period.

SmartTRAC Information Layers

When information is displayed on the map it is typically shown in graphical form against the map backdrop. Some attributes of the data are implicit to presentation in this manner - for example latitude & longitude. Using tools such as the *Info* tool and *Labeler* (see preceding sections) further information is available.

This section describes what information is available for each layer. This is most applicable when objects are selected with the *Info* tool, or data is exported to other applications such as Microsoft® Excel.

Current Location

Activate this layer by selecting [*Analyze*]→[*Current Location*]. This following information is then available with the [*Info*] tool in relation to each symbol displayed.

Attribute	Description
ShortName	The short identifier; identical to the callsign
LongName	The full name of the mobile unit
Date & Time	The date and time that the position was obtained. NOTE: This may differ from the current time as the unit could be blocked from transmitting, be unable to establish its location through GPS, or may not be configured to report automatically.
Latitude	The latitude of the mobile unit. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
Longitude	The latitude of the mobile unit. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
Altitude	Altitude in meters above mean-sea-level. This value is 0 if the altitude is unknown or not supported by the mobile unit.
Distance	The distance between the previous position and this one. The distance is measured on the most direct route from the previous position, known as a great circle route. The units of measurement are as specified according to the settings for the map. Common units of messages are miles/hour, km/hour or nautical miles.
Speed & SpeedUnits	The speed, expressed in SpeedUnits (i.e. miles/hour, km/hour, knots) at which the unit is estimated to have traveled. The speed is calculated as an average from the last two positions, assuming a straight line (shortest distance) between the last two positions on the track.
Reported Speed	The speed, expressed in SpeedUnits that the unit reported it was travelling *at the time of the position report*. This may be significantly different from the average speed and is also commonly called the instantaneous speed. Many tracking units do not report this value, in which case the display is -1.
Course	The course-over-ground in degrees. For land based systems this is the same as the heading or bearing of the unit. In maritime or aeronautical systems this is the true course (over ground). Due to the influence of tide and wind the bearing of the vessel or aircraft can differ significantly from its course. The course is calculated as an average from the last two positions, assuming a straight line (shortest distance) between the last two positions on the track.
Reported Course	The course-over-ground in degrees as reported by the unit *at the time of position report*. This is also known as the Instantaneous Course. Many tracking units do not report this value, in which case the display is -1.
Pos Type	The type of position. Not all mobile types support all codes. Generally these codes are not used directly, instead they are accessed by the Alerting system and are combined into easily understood groupings in the "*Unit Status*" folder related to mobile units. Advanced users can find a full list of the supported codes for a

Attribute	Description
	particular system in the VMS_ALC_POSITION_TYPE table within the database. Commonly included values are: • 0: Normal (GPS) position • 11: Normal (GPS) position • 64: The mobile unit has powered on • 65: The mobile unit is powering off • 66: A Power Failure (unplanned shutdown) occurred • 80: The mobile unit is entering a low power (sleep) mode • 81: Normal (GPS) position, from a unit in sleep mode • 82: The mobile is exiting a low power (sleep) mode • 83: A low power unit has activated to accept commands • 257: Unit has changed to internal/battery power source • 258: Unit has moved to external power source • 259: Battery Low • 260: Assistance Required / Panic Button • 300-304: Doppler/Direction finder position reports • 256: Manual Position Reports • Codes above 1024 are internal representations of digital or analog sensors (temperature etc.). Full details of how these input types are coded can be found in the Systems Administrator and Developer Documentation for SmartTRAC.
Quality	The quality of fix. 0 is the lowest (most unreliable) value through to 9 which represents the best quality fix possible (most reliable). The exact interpretation of this field depends on the type(s) of mobile units and wireless networks used with the system. Further information is contained in the Systems Administrator documentation.
EntityId	This value is generated by SmartTRAC for internal purposes

Activity

Often, when many mobile units are displayed the track display can become cluttered. In this case it is difficult to determine the sequence of events - that is, the order in which activity occurred. The *Activity* layer provides an alternative view of the same information that is normally displayed in a static manner.

Using the *Activity* layer, after selecting an appropriate date provides an animated replay of the sequence of movements from the selected date/time to the end of the active time interval. This real-time animation of activity can be a valuable tool in better understanding fleet movements and activity across time.

The Activity Layer is activated through the [*Analyze*]→[*Activity*] menu item.

- Activating the [*Activity*] Animation deactivates the [*Current Location*] layer.

- Conversely, activating the [*Current Location*] layer will deactivate (stop) any Activity Animation.
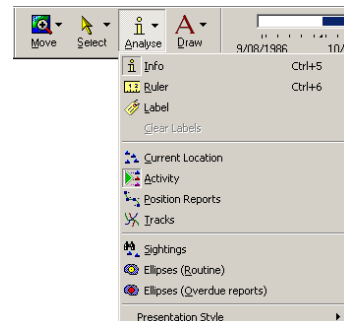
The *Activity Animation* uses the same data as the Current Location layer, specifically an icon representing the location of a mobile unit at a given point in time. However, unlike other layers, the Activity layer creates an animation of the current map view by automatically stepping through the selected date range. For this reason you cannot

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use some tools such as the Info tool and Labeler in conjunction with an *Activity* Animation.

To start an Activity Animation:

- Select the date/time interval of interest using the Date Range tools.

- Select [*Activity*] from the [*Analyze*] tools menu.

Movement of the selected mobiles is replayed on screen. You can continue to use most tools and functions during animation.

- To replay a portion of the animation, move the Date Bar Slider back or forward. The animation will fast forward or rewind as the current location is altered. The current date

- To stop the animation, select the [*Current Location*] layer in the Analyse tools menu.

For performance reasons there are some limitations on which tools are available, and some functions may operate more slowly, while an Animation is running.

Position Reports

Activate this layer by selecting [*Analyze*]→[*Position Reports*].

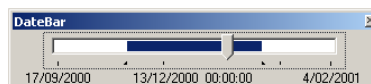Information available for each point in a position track is identical to that shown for a mobile under [*Current Location*]. Please refer to the [*Current Location*] description for details on each attribute.

Tracks

Activate this layer by selecting [*Analyze*]→[*Tracks*]. This following information is then available with the [*Info*] tool in relation to each track line for a mobile.

Attribute	Description
ShortName	The short identifier; identical to the callsign
LongName	The full name of the mobile unit
TrackStartDate & TrackStartTime	The start date & time for the track. This matches the currently selected interval on the *Date Bar* and is the same for all tracks displayed on the map.
TrackEndDate & TrackEndTime	The end date & time for the track. This matches the currently selected interval on the *Date Bar* and is the same for all tracks displayed on the map.
FirstPosDate & FirstPosTime	The first position received within the selected track interval for this mobile. Each mobile unit on the map has its own first pos date & time.
FirstPosLatitude	The latitude of the mobile unit for the first position in the track. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
FirstPosLongitude	The latitude of the mobile unit for the first position in the track. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
LastPosLatitude	The latitude of the mobile unit for the last position in the track. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative

Attribute	Description
	representations). The datum is WGS84.
LastPosLongitude	The latitude of the mobile unit the last position in the track. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
Entity Id	This value is generated by SmartTRAC for internal purposes.

Sightings

Activate this layer by selecting [*Analyze*]→[*Sightings*]. This following information is then available with the [*Info*] tool in relation to each sighting report. *NOTE: Sightings are only available on Surveillance Edition systems.*

Attribute	Description
ShortName	The short identifier; identical to the callsign
LongName	The full name of the mobile unit
Type	Primary categorization of sighted entity type
Flag	Country of flag (maritime only) as two digit code
Date & Time	Date & Time the sighting was recorded, in local time
Latitude	The latitude of the mobile unit. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
Longitude	The latitude of the mobile unit. The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
Speed & SpeedUnits	The speed, expressed in SpeedUnits (i.e. miles/hour, km/hour, knots) at which the unit is estimated to be proceeding. If the speed of the sighted mobile unit is unknown the Speed will be set to -1.
Course	The course-over-ground in degrees that the unit was proceeding at when sighted. If unknown the Course is set to -1.
Activity	Activity at time of sighting. These codes are defined by a systems administrator and are specific to the surveillance application the SmartTRAC system is configured for.
PhotoNum	The frame number (film camera) or file number (digital camera) that records the sighting. Set to 0 if no photographic record exists. Frame numbers should be unique with respect to a specific *ObserverTrip*.
Confidence	The confidence in the validity of the sighting: 1. Confirmed by other sources 2. Probably true 3. Possibly true 4. Doubtfully true 5. Improbable report 6. Truth cannot be judged
ObserverCraft	Name or identifier for the observation craft; i.e. aircraft number, vessel callsign, unique identifier for satellite acquisition vehicle
ObserverSource	Name of the human source (if known), or automatic observation identifier
ObserverTrip	Unique trip identifier. The combination of ObserverCraft and ObserverTrip uniquely identifies this surveillance mission.
ObserverLatitude	As per *Latitude*, but for the observer craft
ObserverLongitude	As per *Longitude*, but for the observer craft
Distance	Distance from the observation point to the observed vessel
Accuracy	Estimated accuracy in meters of the Latitude & Longitude. This figure should include both the margin of error in establishing the location of the observer and the margin of error in then establishing the location of the target (i.e. if the target location is established by range and bearing from a radar source).
EntityId	This value is generated by SmartTRAC for internal purposes.

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Ellipses (Routine & Overdue)

Activate this layer by selecting [*Analyze*]→[*Ellipses (Routine)*] or [*Analyze*]→[*Ellipses (Overdue Reports)*].   This following information is then available with the [*Info*] tool in relation to each ellipse.

Attribute	Description
ShortName	The short identifier; identical to the callsign
LongName	The full name of the mobile unit
StartDate & StartTime	The start date & time for the ellipse. This is based on the first (from) position that the ellipse is measuring.
StartLatitude	The latitude of the mobile unit for the first position in the ellipse (from). The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
StartLongitude	The latitude of the mobile unit for the first position in the ellipse (from). The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
EndDate & EndTime	The end date & time for the ellipse. This is based on the second (to) position that the ellipse is measuring.
EndLatitude	The latitude of the mobile unit for the second position in the ellipse (to). The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
EndLongitude	The latitude of the mobile unit for the second position in the ellipse (to). The format is normally Degrees, Minutes, Decimal Minutes (although this can be reconfigured by the systems administrator to alternative representations). The datum is WGS84.
Distance	The shortest distance between the two points the elipse is based around.
Speed & SpeedUnits	The speed expressed in SpeedUnits (i.e. miles/hour, km/hour, knots) at which the unit is estimated to have traveled between the two points in the ellipse. The speed is calculated as an average from the last two positions, assuming a straight line (shortest distance) between the last two positions on the track.

The difference between the speed calculated in this manner and the |
| Course | The course-over-ground in degrees. For land based systems this is the same as the heading or bearing of the unit. In maritime or aeronautical systems this is the true course (over ground). Due to the influence of tide and wind the bearing of the vessel or aircraft can differ significantly from its course. The course is calculated as an average from the last two positions, assuming a straight line (shortest distance) between the last two positions on the track. |
| Entity Id | This value is generated by SmartTRAC for internal purposes. |

Presentation Styles

By default the tracks, icons, line type and line thickness are determined when a mobile unit is added to the system.

Presentation styles are alternative ways to style data for presentation on the map.

A systems administrator can define Presentation Styles, or alter existing styles. To see what styles are defined for your system open the [*Analyze*]→[*Presentation Style*] menu.
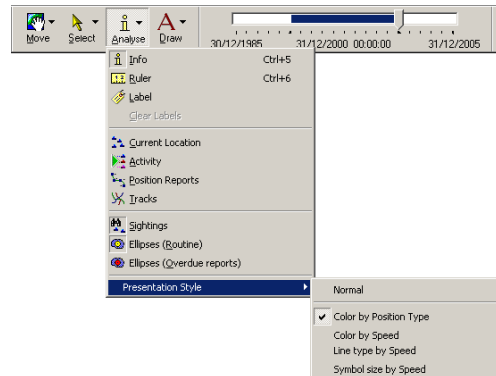
By default the following styles are present. However you should confirm with your systems administrator that the settings used on your system are consistent with the defaults shown here before relying on the following definitions.

Normal

All position and track data displayed on the map uses the styles set for the mobile unit. This is the default style.

Color by Position Type

Track and position data is colored according to the status of the mobile unit when the position report was recorded. The default color scheme is as follows:

- **Blue**: Indicates a normal position report

- **Green**: Indicates the mobile is in low-power (sleep) mode. Such units cannot be contacted by SmartTRAC but will still report their position automatically at a pre-programmed rate.

- **Red**: Indicates a power on/off or fail event. This typically indicates that the mobile has been deactivated deliberately.

- **Pink**: Indicates a unit failure (i.e. antenna blocked, antenna is disconnected, unit tampered with or battery low). This color indicates that the unit may require servicing.

Color by Speed

Track and position data is colored by speed. The default color scheme is as follows:

- Red: Indicates the mobile unit is stationary or moving at a very slow speed. By default the threshold is approximately 5 km/h, 3 miles/h or 2.5 knots.

- Orange: Indicates the mobile unit is moving at a slow speed. By default the threshold is approximately 15 km/h, 10 miles/h or 8 knots.

- Gray: Indicates the mobile unit is moving at a normal speed. By default this is over 15 km/h, 10 miles/h or 8 knots.

Defining Additional Presentation Styles

Systems administrators and advanced users should consult the SmartTRAC Server documentation and technical notes for information on Presentation Styles.

This provides information on adding new styles to a system or changing the default ranges/styles described in this section.

Exporting Data

Most data in SmartTRAC can be exported to other applications. A variety of methods and formats for exporting data are available. These include:

- Printing the map window

- E-mailing the map window

- Saving a map window as a picture (bitmap)

- Copying and Pasting data to other applications

Printing the Map

If a printer is connected to this PC you can print the current view of the map, including all mobiles, tracks, labels and annotations:

- Click [*Print*] in the toolbar (or)

- Select the [*File*] menu and choose the [*Print*] menu.

- Set the print options for your printer in the usual way, then click OK.

- *NOTE: For advanced options, use the [File]→[Print Setup…] option before selecting the [Print] menu.*
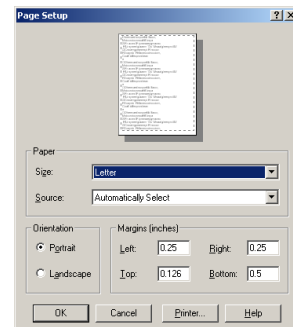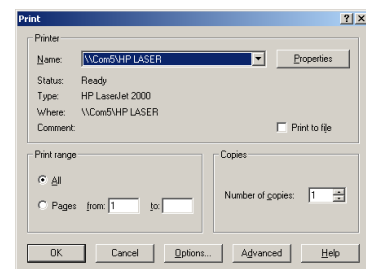
E-Mailing the Map

If a supported e-mail application is installed you can e-mail a copy of the map directly.

- Select the [*File*] menu and choose the [*Send Map…*] option.

- The map is embedded into a new e-mail message.

- Address the e-mail, add any comments or other attachments to the message, then click [*Send*].
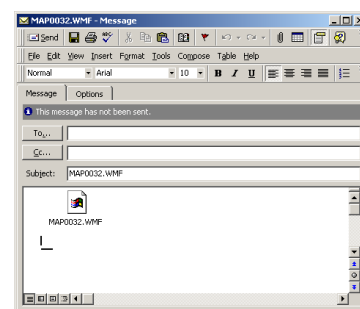
Saving the Map Window as a Picture

The map window can be exported in a variety of graphics formats, for inclusion in other documents, web pages etc. To export the map as a picture:

- Select the [*File*] menu and choose the [*Export Picture…*] option.

- The "*Save Window As*" dialog appears. The size of the exported image can be specified (by default the current window size is selected).

- Further control of how certain types of map objects are exported is available with the [*Advanced*] option.

- Click [Save…] to select the format and filename for the image.
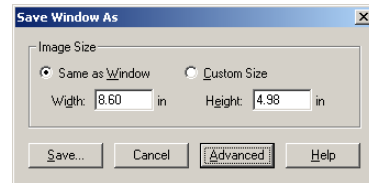
- *NOTE: Depending on the type of image file, and the size of the image saved this function may create large files. It is recommended that the JPG format or Windows Enhanced Metafile be specified, as these are the most compact picture formats.*
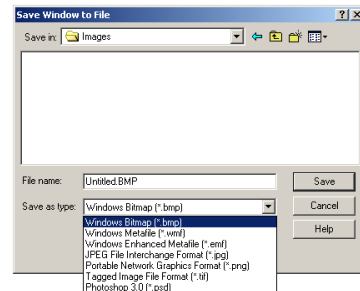
Exporting Mobile Unit Details

To copy the attributes of the mobile (callsign, name, type etc.)

- Select mobile(s) either on the *Map* or in the *Unit List*. Any selection tool described in the preceding chapters can be used to accomplish this task.

- Right-click on the mobiles in the *Unit List* and select [*Copy*]

- Open another application, for example Microsoft® Excel

- Select [*Edit*]→[*Paste*]
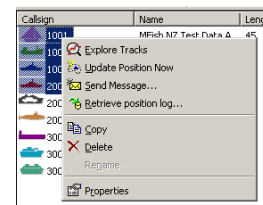
NOTE: As an alternative, and faster, method you can drag-and-drop mobiles directly from the Unit List into another application.

Exporting Track Details

Current locations, position reports or tracks can be copied in either text or graphical format by selecting [*Edit*]→[*Copy*]. The resulting information can then be pasted into programs such as Microsoft Word or Excel for further analysis.

The exact sequence of steps differs depending on the type of data (text or picture) that is desirable:
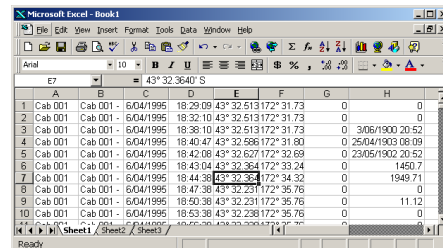
To copy a selection from the map as a graphic image:

- Use the [*Analyze*] options to enable only the layer that you wish to copy. For example; [*Position Reports*].

- Select the mobiles on the map and then choose the [*Edit*]→[*Copy*] menu item.

- Open another application, for example Microsoft® Excel, and select [*Edit*]→[*Paste Special…*]

- Select the [*Picture (Enhanced Metafile)*] option.
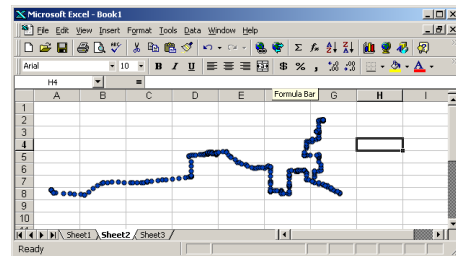
To copy a selection from the map in textual form:

- Use the [*Analyze*] options to enable only the layers that you wish to copy. For example; [*Position Reports*].

- Select the mobiles and then choose the [*Edit*]→[*Copy*] menu item.

- Open another application, for example Microsoft® Excel, and select [*Edit*]→[*Paste Special…*]

- Select the [*Unformatted Text*] option.

- A tabular view of the selected data is inserted. The information is dependent on the type of data; i.e. positions, tracks, current location of the mobile unit. For a full description of the fields applicable in each case please refer to the section *SmartTRAC Information Layers*.

Exporting the Entire Map

It is possible to export an entire map image. This differs from exporting only a portion of the data. When the entire map is exported the receiving application, such as Microsoft® Word or Excel can access all details on the map and tools such as zoom and pan can be used directly in the receiving application.

To export the map:

- Click anywhere within the map window.

- Choose the [*Select*]→[*Unselect All*] menu item (if this item is grayed out the there are no items to unselected and you can go to the next step).

- Select the [*Edit*] →[*Copy*] menu item.

- Open another application, for example Microsoft® Excel.

- Select [*Edit*]→[*Paste*]

- The map window is inserted into the application.

- Double-click to activate the map image. A toolbar appears with a basic set of map navigation tools. You can then resize the map and change the view or layer settings.

- *NOTE: A map inserted into another application is only active on the machine that created the image and other machines with an identical SmartTRAC configuration. If you subsequently send a document containing an embedded map to other people they can view the image, but not resize it or change the map layer options.*
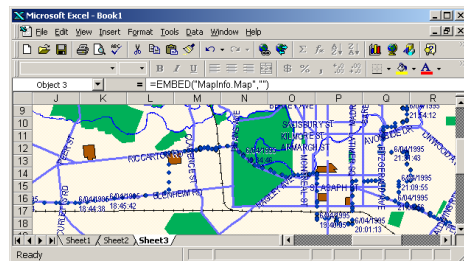
Sending Commands to Mobile Units

Mobile tracking units report their position automatically to SmartTRAC. The configuration of the mobile unit can also be altered remotely for example to make the unit report its position more frequently.

NOTE: The exception is when using a wireless or satellite network that is one-way only. If a mobile unit can send data to SmartTRAC, but not visa versa, then the command functions described here are not supported.

Depending on the sophistication of the tracking device(s) used additional functions may also be available. These include two-way messaging (e-mail), logging of position data while out the mobile is outside wireless coverage areas and control of external devices (engine immobilizes, door lock/unlock etc).

SmartTRAC supports most functionality offered by tracking devices available in the market today. However, there are differences in regard to the functions supported for any given vendor's tracking equipment. Also, not all vendors support the functions provided by SmartTRAC so some requests to a mobile unit may fail.

As far as possible SmartTRAC makes the details of how a tracking device operates transparent to an operator. Basic tracking operations work similarly on different vendor's equipment. Translation is performed automatically to perform a function as close as possible to that requested; for example where a tracking device cannot report its position automatically SmartTRAC will request an updated position on a regular basis to simulate the same feature.

NOTE: Absolute publishes technical notes for systems administrators and advanced users that describe in detail how support is implemented for each wireless network and vendor platform. Please refer to the Tech Center on www.AbsoluteCommunications.com *for further information.*

Requesting an Immediate Position Update

Mobile units typically report according to pre-configured criteria. In addition, you can also request an immediate position update at any time. To do this:

- Use any combination of the map selection tools, for example; [*Map*]→[*Pointer*] to select mobile units on the *Map* (or)

- Highlight mobile units directly in the *Unit List*.

- Once you have selected the mobile unit(s), right-click on the highlighted item(s) in the *Unit List*.

- Choose the [*Update Position Now*] item.

- A request is queued for transmission to each mobile. The position of the selected mobile(s) will be updated on the map as new data is received.

NOTE: You can continue working while the request is in progress. Depending on the wireless network(s) in use with the system the response to this request can vary from 1 second to 15 minutes. See your systems administrator or the

Absolute technical reference material for further information on how quickly you should expect a given tracking device to respond.

Sending an E-Mail Message

If the mobile unit has an e-mail address, or supports text messaging to you can send a message to the driver/captain:

- Select mobile unit(s) from the *Unit List*.

- Right-click and choose the "Send Message" option.

- Your e-mail program is displayed, with the address details already entered.

- Type a message and click [Send] to transmit the message.

- *NOTE: If the Send Message option is grayed out the mobile does not support e-mail or you do not have a supported e-mail application installed on your computer.*
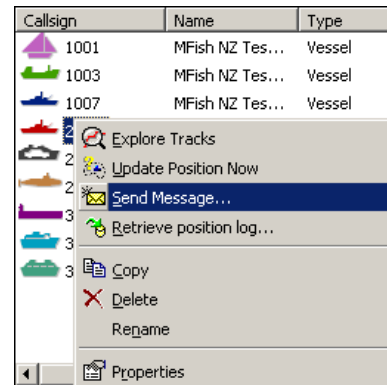
A message is transmitted to the mobile unit.

You can send to multiple units simultaneously by selecting a group of mobiles from the List, then right-clicking to bring up the menu.

NOTE: Depending on the wireless network(s) being used with the system the delivery of the e-mail to a mobile can take 5 second to 2 hours. See your systems administrator or the Absolute technical reference material for further information on how quickly a unit should receive the message.

Downloading a Logfile

Some mobile units can store a "*logfile*" of information onboard the vehicle, vessel or aircraft. This information is not sent to the base automatically but is stored in case it may be required at a later date. The size of the log (i.e. how many positions can be stored) and the criteria for what information is logged differ according to the unit vendor.

To request information from the logfile use the [*Retrieve Position Log…*] command. This will request any supplementary log information from the mobile unit against the currently selected date range.

NOTE: For information on selecting a date range, refer to the Date Bar section.

To download the logfile from a mobile unit:

- Highlight the appropriate mobile(s) in the Unit List and right click.

- Choose the [*Retrieve Position Log*] item.
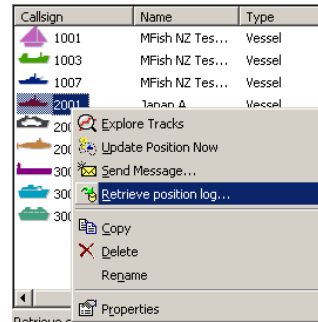
- The date range is displayed for confirmation.

- If you select "Yes" a command is queued requesting a log download.

NOTE: You can continue working while the download is in progress.

Depending on the wireless network(s) in use with the system the response to this request can vary from a few seconds to several hours (for a large log download). See your systems administrator or the Absolute technical reference m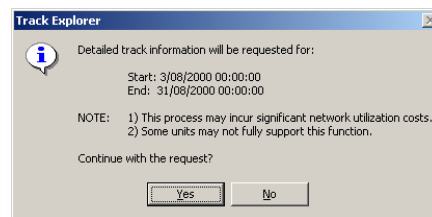aterial for further information on whether Log Downloads are supported, and what limits apply to the size of the log for a particular type of tracking device.

Selecting a Reporting & Logging Rate

Use the reporting rate to determine how often mobile unit reports its position to the SmartTRAC system. The criteria can be based on time; i.e. report every 15 minutes, or a combination of time and distance, i.e. report every 15 minutes or every 5 miles.

A Logging Rate can also be specified. This relates to the *Log Download* function and determines how often the unit should store positions internally.

NOTE: Only the most advanced types of tracking unit presently support this function - and some units log information differently (i.e. based on door open/close triggers, the vehicles stopping etc) and may ignore or only partially support the settings specified here.

To specify the reporting and logging rate parameters:

- Highlight the appropriate mobile(s) in the Unit List and right click.

- Choose the [*Properties*] item.

- The Properties dialog is displayed.

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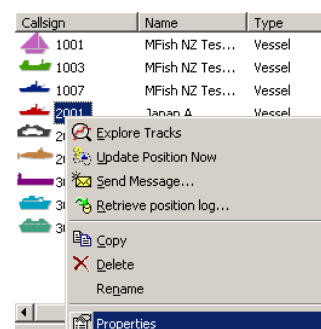
- Select the [*ALC*] tab

- Specify the reporting rate to the base. In this example every 120 minutes (2 hours) or every 30 nautical miles has been selected.

- Optionally; specify a Logfile rate and distance. In this example the logfile is updated every 15 minutes.

- Click [*Apply*] to save the settings.

- The appropriate messages will be queued to reconfigure the mobile.
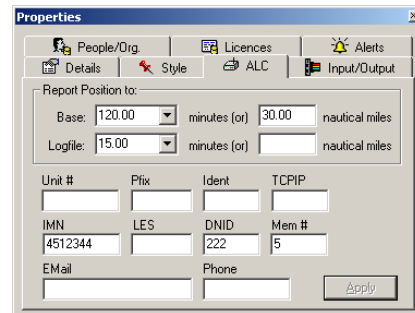
NOTES:

- *The (default) setting for a reporting rate means to use the system default value. This is configured by the systems administrator and is used by all mobile units which do not have an explicit reporting rate specified.*

- *To report faster than one minute select a decimal number. For example; 30 seconds = 0.5 minutes.*

- *Take care when entering longer values. The figures are in Minutes, and entering 4:00, incorrectly intending 4 hours is interpreted as four minutes. The correct setting for this example would be to enter 240 (minutes).*

- *Some mobile units do not support the distance parameter (i.e. the miles, kilometers, nautical miles field). In this case only the time value is used and the distance parameter is ignored.*

The current reporting rate can be viewed on the Filter. As an alternative to changing the reporting rate from the Properties dialog you can drag-and-drop mobiles into the appropriate folder directly from the Unit List. This is equivalent to changing the "Report to Base" setting on the [ALC] settings.

Page 44
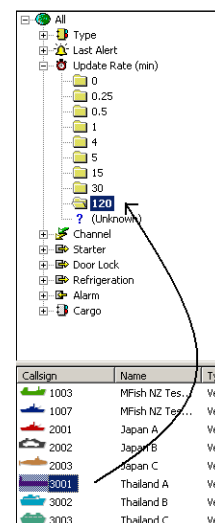
Setting Digital Output Lines

Some mobile units have "output lines". These can be connected to a variety of external sensors to provide control of activity such as engine immobilizers, remote door lock/unlock control, valve control and other similar devices.

The systems administrator determines the number of digital output lines and their configuration. To view the output lines configured for the system (if any):

- Highlight a mobile(s) in the Unit List and right click.

- Choose the [*Properties*] item.

- The Properties dialog is displayed.
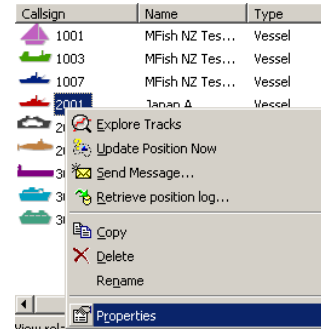
- Select the [*Input/Output*] tab

- To change the status of a Digital Ouput line, select from the drop down list of options.

- Click [*Apply*] to save the settings.

- The appropriate messages will be queued to transmit configuration parameters to the mobile.
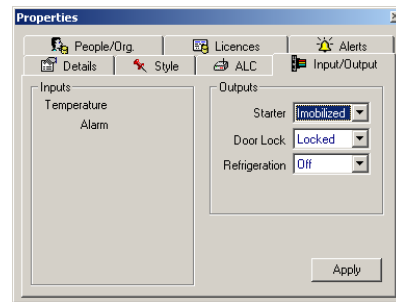
NOTE:

The current status of the digital output lines can be viewed on the Filter. As an alternative to changing the status from the Properties dialog you can drag-and-drop mobiles into the appropriate folder directly from the Unit List.

Page 45
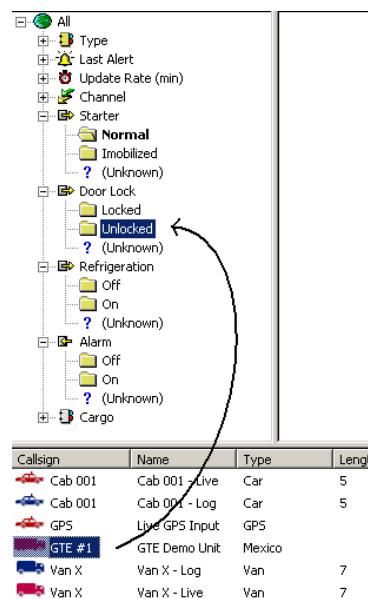
Viewing and Editing Mobile Details

The Properties Dialog
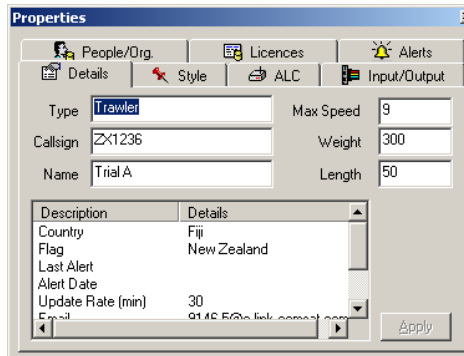
The Properties Dialog displays detailed attribute information on either;

- A single selected mobile (or)

- A group of selected mobiles.

You open the Properties dialog by right clicking on unit(s) in the *Unit List*. Attributes are categorized according to type with tabbed dividers along the top of the Properties dialog.

NOTE: Once the properties dialog is open it will automatically update whenever the selection on the Map or Unit List changes. You can therefore use the Properties dialog in conjunction with all map selection tools (i.e. [Select]→[Pointer] and [Select]→[Rectangle]).

Depending on whether a single mobile is selected, or a group of mobiles, the behavior of the Properties dialog changes. The following table indicates what information is available under each category in both cases:

|	Single Unit Selected	Multiple Units Selected
Details	• A summary of mobile unit identification attributes. • Most details can be edited by changing the value then clicking [*Apply*].	• A summary of those attributes that are common to all selected mobile units. • Editing a value will change it for all selected mobiles. This allows group reassignments, for example to change the "Type" attribute on several mobiles simultaneously.
Style	• Display style settings for the mobile. • Styles can be edited by selecting the appropriate style attribute (icon, symbol, size, track) then selecting an item on the list and clicking [Apply].	• Display style settings that are common to all selected mobile units. • Changing a style will apply it to all selected mobiles. This allows group assignments, for example to change a set of icons to the color Red.
ALC	• Displays communications settings and configuration for a mobile. • Settings can be edited by changing the value then clicking [*Apply*].	• Displays communications settings and configuration that are common to all selected mobiles. • Changing a value will apply it to all selected mobiles. This allows group assignments, for

	Single Unit Selected	Multiple Units Selected
		example to change the position reporting rate for a group of mobiles.
Input/Output	• Displays digital/analog input and current status of digital outputs. • Digital output settings can be altered by selecting an option from the list then clicking [*Apply*].	• Displays digital/analog input and current status of digital outputs that are common to all selected mobiles. • Changing a digital output setting will apply it to all selected mobiles. This allows group assignments.
People/Org	• Displays information on People and Organizations that have a relationship with this mobile unit.	Not Supported
Licenses	• Shows licenses/permits issued by area. These details are typically imported from another system. See your systems administrator for details.	Not Supported
Alerts	• Shows alert history for the selected mobile. Alerts are system generated events configured by a	Not Supported

NOTE: Depending on your security settings, you can edit none, some, or all attributes of a mobile unit. If you receive an error "Insufficient Privilege" when changing attributes this indicates that access to that attribute has been restricted.

Details
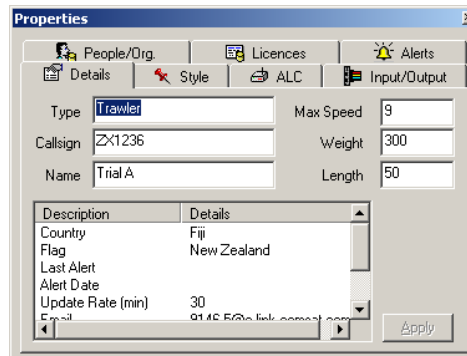
The details tab permits viewing and editing of attributes related to mobile categorization and identification. The attributes that can be edited are as follows:

	Description
Type	The type of unit. The use of this attribute is at the discretion of the system administrator. Typically it is based on either the type of mobile asset (car, truck etc) or the usage of the asset.
Callsign	A short identifier for the mobile. Typically a Car Number, Vessel Radio Callsign or similar. The callsign should be a compact, but unique, identifier for the mobile unit.
Name	The full name of the mobile unit. This attribute is optional and does not need to be unique.
Max Speed	The maximum speed the unit can travel. Expressed in the distance units of the map. For example; miles/hour if the system map being used designates miles, km/hour if the map designates kilometers and knots if the map is measured in nautical miles. This setting is required when generating *Opportunity Ellipses*. It is not required for all other layer types.
Weight	The weight of the mobile
Length	The length of the mobile; in either feet or meters as appropriate.

Click [*Apply*] to save changes.

NOTE:

There are several other attributes shown that cannot be edited directly. Most of these attributes can be altered outside the Properties dialog.

For example to change the "Country" attribute you would use drag-and-drop behavior to move the mobile to a different country folder.

The example shown changes the country designation to "Belgium".
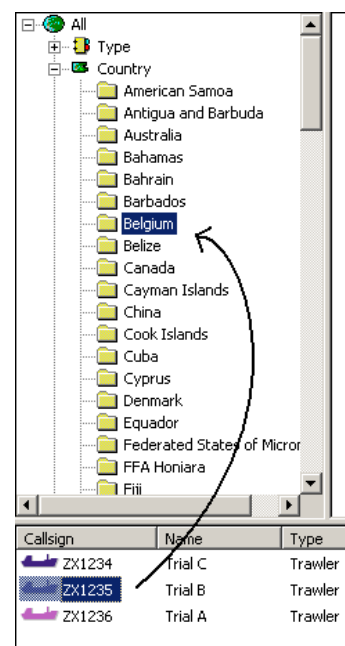
Symbol, Size, Track Thickness & Color
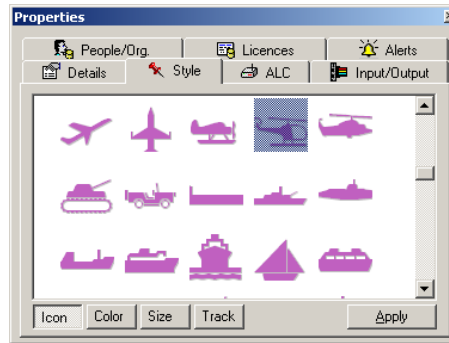
The style tab permits viewing and editing of attributes related to mobile display. The attributes that can be edited are as follows:

	Description
Icon	The symbol (icon) that marks the location of a mobile
Color	The color of the icon and track display for a mobile
Size	The size of the icon
Track	The line thickness of the track

To change a style, select one of the four attributes and make a selection from the list. To save the changes either double-click on the new selection, or select [*Apply*].

If the units selected are presently drawn on the map, the display will redraw with the new styles.

NOTE: If any of the style attributes is the same for all selected mobiles the current setting is displayed, otherwise a generic "" symbol is displayed.*

Automatic Location Communicator Settings
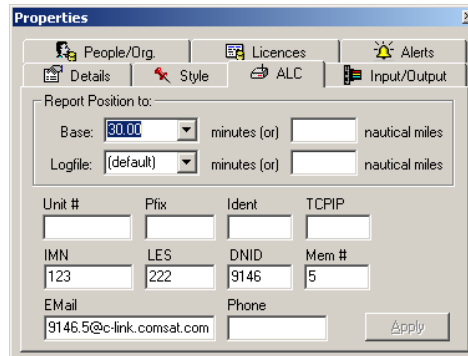
The ALC (Automatic Location Communicator) tab permits viewing and editing of communications configuration parameters.

For details on configuring the Reporting Rates (the top section) please refer to *Sending Commands to Mobile Units*.

The other parameters describe how the mobile unit is identified. Different wireless and satellite networks require different combinations of identifiers. The definition of each identifier is as follows:

	Description
Unit #	A unique identifying number for the mobile unit. This field is generally used where no other identifier is available.
Pfix	Prefix; used on Trunked Mobile Radio Networks
Ident	Ident; used on Trunked Mobile Radio Networks
TCPIP	TCP/IP address in format "x.x.x.x". This is used by mobile units that have wireless internet addresses
IMN	Inmarsat Mobile Number. Uniquely identifies mobiles that operate on the Inmarsat network.
LES	Inmarsat Land Earth Station (LES) code.
DNID	Inmarsat Data Network Identifier. Indicates the group to which a mobile belongs on the Inmarsat network for position reporting purposes.
Mem#	Inmarsat Member Number. Identifies a mobile uniquely in conjunction with the Inmarsat group (DNID) number.
EMail	An Internet e-mail address. This type of address is used by mobiles that operate on a wireless internet system that supports e-mail.
Phone	A phone number. Uniquely identifies mobile units that use the cellular network for communications.

The combination of identifiers to be entered depends on the type of tracking device and how the system is configured.

NOTE: The following table is intended as a guideline only - your systems administrator may have altered the default settings in this regard.

Select the type of tracking device from the left column. The identifiers that should be entered, based on the tracking device type, are shown below:

	Unit #	Pfix & Ident	TCPIP	IMN	LES	DNID & Mem #	E-Mail	Phone
GSM Cellular	O							M
AMPS Cellular	M							M
Cellular Packet Data	O		M					
GPRS/GSM Cellular	O		M					M
Inmarsat-C	O			M	O	M		O
Inmarsat-D+				M				
Argos	M							
Trunked Mobile Radio		M						
Orbcomm								M
Private Radio Network	M							

- M = Mandatory. This field must be entered.

- O = Optional. This field may be entered. See the SmartTRAC Technical reference material pertaining to the tracking device(s) in use for the system for information on whether this field is appropriate for your system.

Communication Channels

If you have multiple types of tracking device, the system may be configured to support several *Communications Channels*.

The is indicated by the *Channel* folder on the *Filter*. Open this folder to see wireless networks are available for communication with mobile units.

If you make changes in the Properties dialog that alter which network a given unit communicates via, you must also update the Channel.

An example is substitution a cellular tracking device with a satellite transponder on a given mobile unit. In this case edit the mobile details in the *Properties* dialog then use the Unit List and Filter to reassign the mobile to the correct channel - in this example the "*Inmarsat : Comsat*" folder.
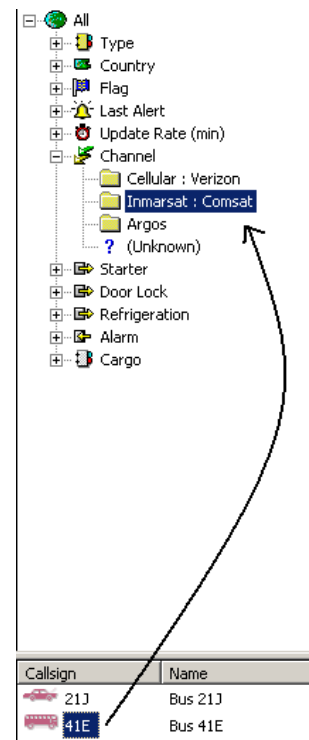
Input and Output Sensors
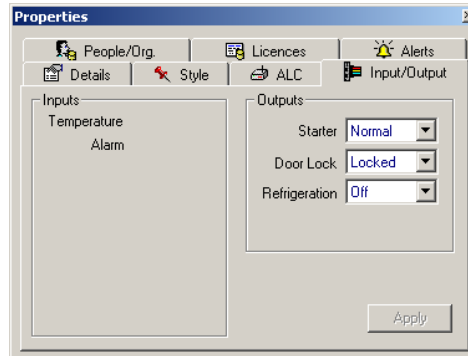
A system can be configured with input and output sensors. These are connected to external devices on the vehicle.

For a complete description of controlling output lines please refer to the section *Sending Commands to Mobile Units*.

The two types of sensor available are:

	Description
Inputs	A list of inputs defined for this system with values shown. If no value is indicated then the particular mobile unit selected does not have this sensor type installed.
Outputs	Digital output lines configured for use with the system. If no value is shown then the status of this output line is unknown.

After changing an output value, click [*Apply*] to send the appropriate commands to the mobile unit.

People and Organizations
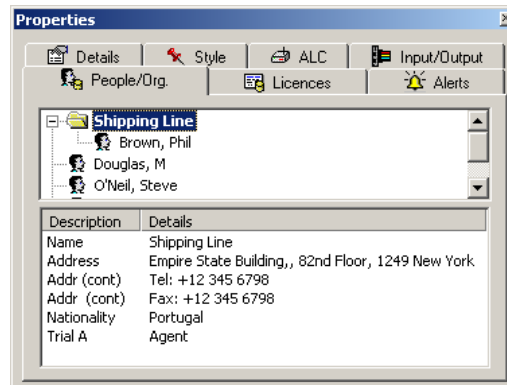
The People and Organizations tab shows particular associations between a person/organization and a particular mobile unit. The nature of the association is referred to as a "Role".

Roles are system specific but typically include definitions such as "Driver","Owner" and "Agent".

The top portion of the display indicates a list of all organizations (folders) and people (icons) that have some relationship with this mobile unit. If your systems administrator has imported hierarchy information then the association of people within their respective organizations is also displayed.

The details available are:

	Description
Name	The name of the person or organization
Address	The address, phone and fax numbers for the person or organization
Roles	A list of one or more roles. The left hand column (description) is the mobile unit that the role relates to and the right hand column defines the type of association.

Licenses
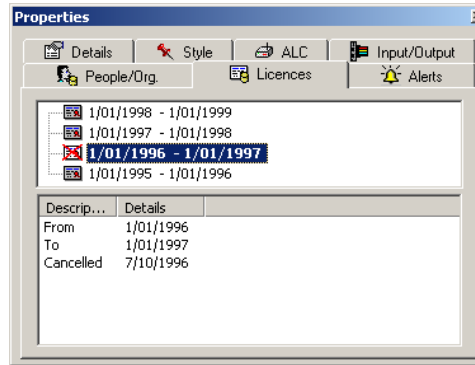
The Licenses tab shows licenses or permits issued to mobile unit. A date range and a status identify each license. Status codes are as follows:

- A white license indicates a current status

- A gray license has expired

- A license with a cross mark has been cancelled

Selecting a license displays additional details. The exact details are defined by the system administrator, so your display may appears slightly different to the example shown here. In most cases the details available will include:

	Description
From	Date the license comes into effect
To	Date the license is valid until
Cancelled	Cancellation date for the license
Trip	A trip identifier, if this is a single use license
Areas	A list of geographic areas where the license is valid
Restrictions	Designations of restrictions on the license; i.e. hours of operation, types of fishing gear. The exact interpretation of these attributes is dependent on the system configuration.

Alerts
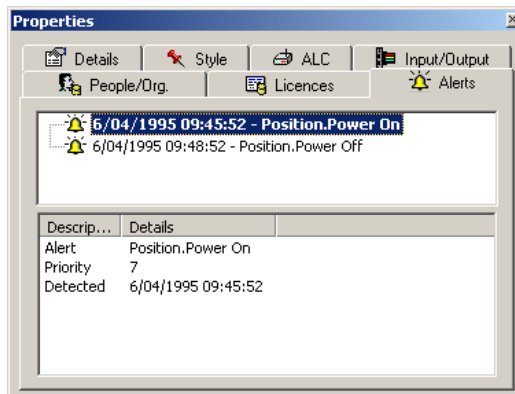
Alerts are generated in relation to significant activity or events. Almost any activity on the system can be configured to trigger an Alert. For further details on configuring Alerts and how they operate please refer to the *Configuring Alerts section* of this manual.

When an Alert is generated all details are stored in the database. The Alerts tab is then used to review details on alerts received for a specific mobile unit.

NOTE: A summary of the most recent Alert for each mobile is displayed on the Filter and Unit List. These tools can be used to monitor activity in relation to the status of a mobile.
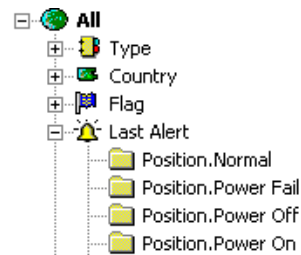
Details available for each Alert include:

	Description
Alert	Type of alert. Described in the following table.
Priority	Priority assigned to the alert by the system administrator.
Detected	Date that the activity causing the alert commenced. This may not be the same as the date the alert was issued, as the alert could relate to older data that was downloaded (i.e. from a logfile) at a later date.
Details	Alert specific details, provides additional information based on the specific type of alert.

NOTE: Before Alerts will be generated the Alerting System must be configured. See the Configuring Alerts section for details on this process.

Alerts are categorized according to a hierarchy. The first portion is system category and describes the general nature of the alert. Each portion of the Alert Code is then separated with a "." (full stop) and describes in progressively more detail the exact nature of the Alert.

To check which Alerts are supported on a given system configuration, perform the following steps:

- Open the Alert Configuration from [*Tools*]→[*Alert Properties*]
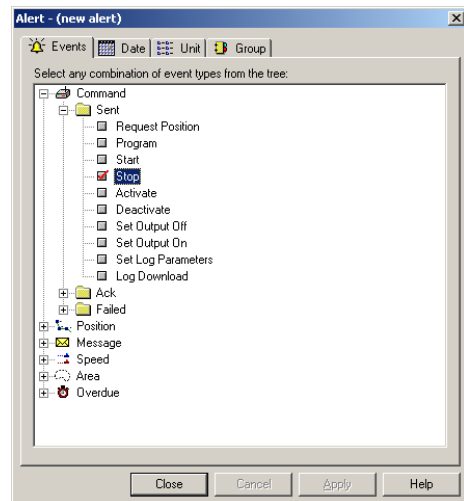
- Click on [*New…*]
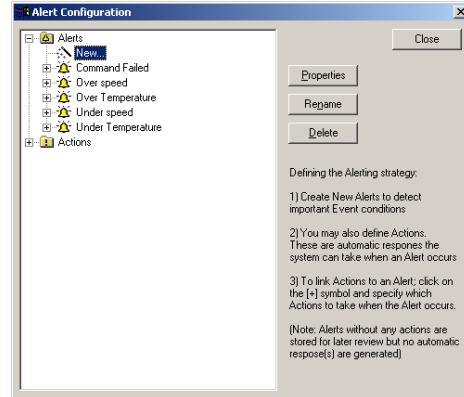
- Expand the [*Event*] folder. By concatenating the folders in this view the Alert Code can be established.

- For example; the "*Stop*" item shown here has an Alert Code of "*Command.Sent.Stop*" formed by concatenating the "Stop", "*Sent*" and "*Command*" folders.

A description of the Alert Categories is as follows:

Type	Description
Command.Sent	A command, reprogramming a mobile unit, was transmitted
Command.Ack	A command, reprogramming a mobile unit , was successful
Command.Failed	A command, reprogramming a mobile unit, failed
Position	The alert relates to a status received in relation to a position report. For example; Power On, Power Off. The exact list of status codes supported is system specific.
Position.Unknown Unit	A position report was received from an Unregistered mobile. This can happen where a new transponder has been commissioned but not yet added to the system. The final portion of the alert code is as per the *Position* alert.
Messages	Send/Received/Failed indication on the transmission of a text message (e-mail) to or from a mobile.
Speed.Stationary	The mobile unit is stationary
Speed.Slow	The mobile is moving within the "slow" speed range. This threshold is configured by the systems administrator.
Speed.Fast	The mobile is moving in the high speed range.
Speed.Exceeds Maximum	The mobile has exceeded the maximum speed specified in the *Details* tab on the *Properties* Dialog.
Area.Entry	The unit has entered a defined area
Area.Exit	The unit has exited a defined area

Type	Description
Area.Within	The unit has reported a position with a defined area
Overdue	The unit has stoped reporting at its programmed rate. The digits after the alert indicate the tolerance; i.e. 01:00 indicates one hour.

Adding and Deleting Mobiles

Adding a Mobile to the Fleet
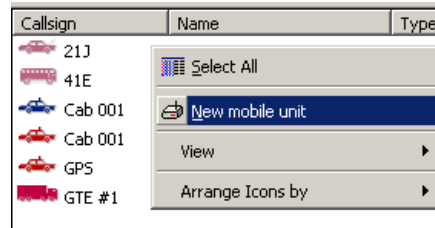
New mobile units are added to the system by right-clicking on the *Unit List* and selecting the [*New…*] option.

This creates a new mobile, and opens the *Properties* dialog so you can enter values for the mobile unit and its wireless or satellite network communications configuration.

For details on setting these mobile attributes refer to the preceding section: *Viewing and Editing Mobile Details*.

Default Values

If a *Filter* has been specified for the *Unit List*, those attributes are filled in automatically when a new unit is created.

For example;

- Selecting a filter criteria of "Type"="Trucks" and "Update Rate" = 30 minute filters the *Unit List*.

- Selecting [*New*] will create a new mobile, of type "*Truck*" with a reporting rate of 30 minutes.

Adding Many Units

When entering details for many units many attributes may be the same, or similar. For example;

- The type, size (length)

- The style (icon, size, thickness)

Rather than enter these individually for each unit, use the following process:

- Create each new unit

- Enter only the details that are different for each unit (i.e. the name and mobile unit identification numbers)

- When complete, select all the new units in the *Unit List*. The Properties dialog will change to the group mode.

- Set the relevant attributes for the entire group.

Deleting a Mobile
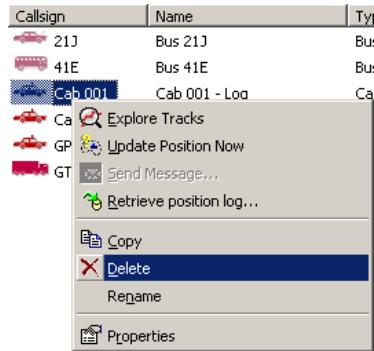
To delete an existing mobile;

- Select the mobile in the *Unit List*

- Right-click and select "*Delete*"

- You are asked to confirm the deletion

NOTE:

- *Depending on system configuration deleting a mobile may not remove track data or other information from the database as indicated.*

- *If the system is configured with an Oracle Database, and auditing is enabled, this function marks the mobile as inactive and removes it form the display. In this configuration only systems administrators can permanently delete data.*

- *If you delete a mobile unit in error, ask your systems administrator to restore the deleted unit for you (this is only possible on systems configured with auditing enabled).*

USER REFERENCE MANUAL

SMARTTRAC™

Creating Custom Groups of Mobiles

If you frequently work with a group of mobiles that aren't included in a standard SmartTRAC group you can create a personal group to store the mobiles in:

- Right-click on the *Filter*, choose the [*New*] option and select [*Group*].

- A new group appears in the *Filter*.

- Type a name for the group, then click elsewhere in the *Filter*.

- The group is created and contains a single *Unknown* category containing all mobiles.
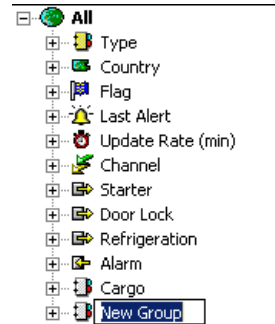
You then create categories within the group:

- Click (select) the group to add a category to.

- Right-click in the Filter window, choose the [*New Category*] option.

- A new category appears in the Filter window.

- Type a name for the category, then click elsewhere in the filter.
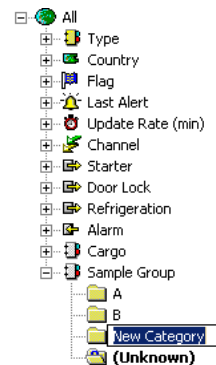
To select which units are in each group:

- Click and drag the units of interest into the category folder.

- You can also drag category folders from other groups, to place the entire contents of another category into this one.
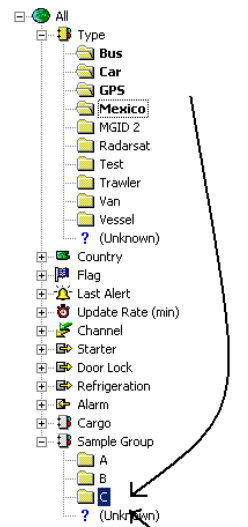
The new group and categories are stored when you exit and also shared with other users.

NOTE: If other users add new categories these do not appear on your display until you next restart SmartTRAC Workstation.

Customizing the Map Display

Layer Settings

The map display is created from a series of layers. Each layer is like a transparent sheet, with a specific type of information drawn on it. The layers stack from bottom to top, with information in upper layers drawing over lower ones.

The topmost layers contain the track and position information that SmartTRAC draws on the display. Layers below this are defined by your map supplier and will vary according to the type of map you are using.

Layers can change visibility at different zoom levels. For example showing street names on a map of the entire world would not be feasible, but as you zoom in on the map display it becomes appropriate for this layer to become visible. The technique used to achieve this style of display is called zoom-layering. You can change the settings at which each layer displays, and customize many display options, through the Layer Settings dialog.

When you open the Layer Settings dialog it will display the list of layers on the map. Layers with the following names are reserved for exclusive use by SmartTRAC:

- Location
- Positions
- Track
- Sightings
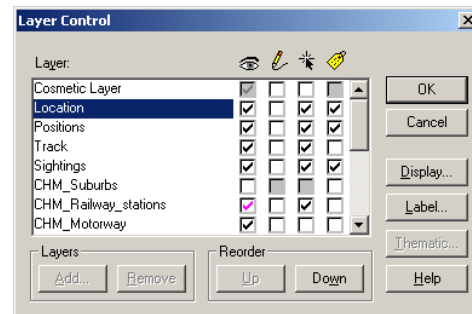
You can change the order in which layers are displayed by either:

- Clicking and dragging the layer up or down
- Clicking on a layer, and using the [*Reorder*] options

Beside each layer are four icons with checkboxes. These control the major attributes of the layer. From left to right the checkboxes are:

- **Visibility:** Indicates that this layer is visible. A purple checkmark indicates that the layer is visible, but at the present map scale it has been turned of due to zoom-layer settings.

  You can turn layer visibility off to reduce screen clutter, however do not disable visibility on SmartTRAC reserved layers. Instead use the [*Analyze*] menu options to enable/disable SmartTRAC content.

  To alter visibility settings; click on the [*Display…*] button. This opens the Display Options dialog for the selected layer.

  - Use [*Style Override*] to override the display style for all objects on the layer. For example; to force
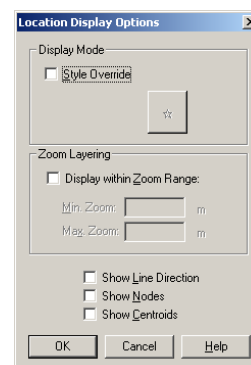
all objects on the layer to display in Blue.

- Use Zoom-Layering to specify the minimum and maximum zoom level for this layer.

- **Edit:** When you draw an object with the [*Draw*] menu tools, the Editable layer is where the object is saved. Unless you intend to modify map data permanently, it is safest to make only the "*Cosmetic Layer*" editable. The Cosmetic Layer is like a scratchpad, you can use it to draw objects on a temporary basis without affecting the map files. *NOTE: If the edit option is grayed out, the layer is read-only and you do not have permission to edit it.*

- **Select:** Indicates this layer can participate in operations with the Select tools. Occasionally it is desirable to disable selection on a layer, so objects from a lower layer will be selected instead. For example; disabling selection on the "*Location*" layer is necessary when copying position data from the "*Positions*" layer. This is because the "*Positions*" layer is normally below "*Location*" layer in the selection order.

- **Auto-Label:** If this checkbox is on, labels are drawn automatically for all objects in this layer. If not checked, labels are drawn only when an object is clicked on with the Label tool.

  As with the Visibility option, a purple checkmark indicates that Auto-Labeling is active, but labels are not currently drawn due to zoom layering.

To change labeling options, click on the [*Label…*] button. This displays the label option dialog.

- Use the Visibility options to determine when the layers are visible, and how overlapping labels should be handled.

- Use the Style options to set the font size and color.

- Use the Position options to specify the label location and offset from the object (e.g. below, and offset by 4 points).

- The "Label with…" list shows the fields that can be used for the label. The available selection varies according to the specific layer and map provider. You can also create composite labels from many fields by selecting the "Expression…" option. This displays the expression dialog.

 - To enter an expression, select all fields required from the "Columns" box.

Page 61
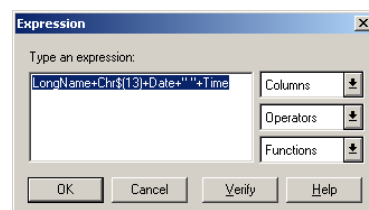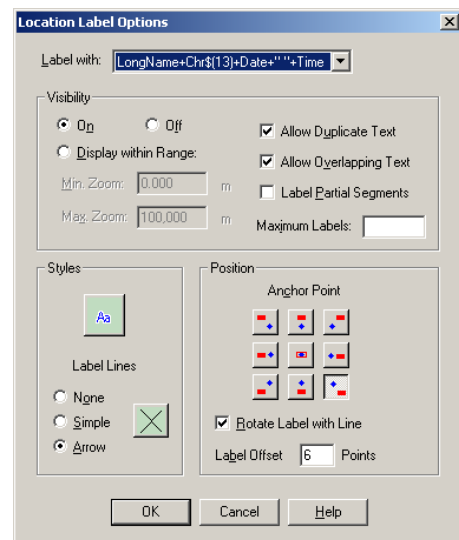
- Concatenate fields with the '+' symbol

- To put a space between two fields use the '+ " " + ' syntax; for example; *Date+" "+Time*

- To make a multi-label line, insert the expression chr$(13). This adds a new line to the label.

- For example; *Name + chr$(13) + Date + " " + Time* creates a composite label on two lines using the name of the mobile and the date and time of last report.

Map Properties

The Map Properties dialog displays the current presentation attributes for the map.

- Use the *Coordinate Units* list to specify the measurement units. To display all coordinates in the Degrees/Minutes/Seconds notation, also select the "Show DMS" checkbox.

- The distance and area units specified are used by SmartTRAC for speed calculations. The speed unit that SmartTRAC will select is related to the distance measurement unit as follows:
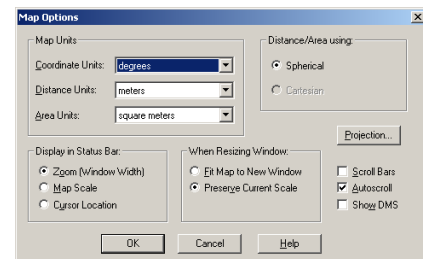
  - Miles   =   Miles/hr

  - Kilometers   =   Km/hr

  - Meters   =   Meters/second

  - Nautical Miles =   Knots

- The Projection allows you to specify the type of map view. For example the first example is a Latitude/Longitude view, the second shows the Projection of the world from the North Pole.
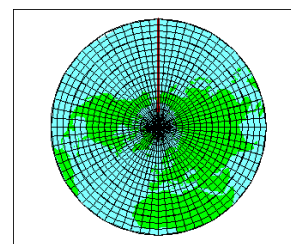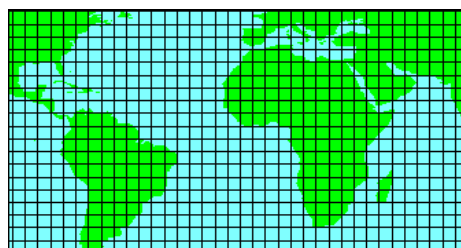
NOTE: The "Display in Status Bar" options are not supported by SmartTRAC. SmartTRAC will always display its own status bar instead of the options specified in this dialog.

Changes in this dialog apply only for the current session unless you save the map as a new template Workspace (Map) file. To save a Workspace file:

- First turn off all SmartTRAC layers through the [*Analyze*] menu (e.g. *Positions*, *Location*, *Tracks*, *Sightings*). You will know that all layers are disabled when the following

Page 62
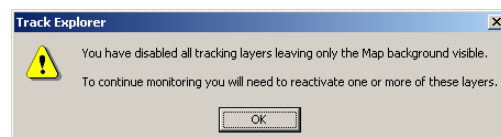
dialog appears:

- Use the [*File*]→[*Save As*…] menu to specify a name for this Map Workspace. Once the Workspace is saved, you can reopen it later with [*Open*] and all the options specified for the map display will be activated.

- Re-enable tracking layers through the [*Analyze*] menu.

Drawing and Annotating on the Map

Overview

The options in the Draw menu can be used to add custom text, symbols and simple graphics to any layer in the map.
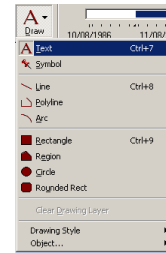
NOTE: If these tools are shown on your system grayed out then you must first select a layer to edit, please refer below.

Editing a layer creates a permanent change to the map and for this reason only administrative users are normally permitted to edit layers. To see which layers are editable on your system, open the [*Select*]→[*Layer Settings*] dialog. Layers that have a white checkbox under the Pencil symbol can be edited. Other layers are read-only and cannot be altered.

Only one layer can be selected for editing. Making a layer as editable removes the checkbox from the previously selected editable layer.

It is most common to create temporary objects, known as annotations, on a map. For this purpose the drawing tools are used, but rather than altering the underlying map the editing is performed on the "*Cosmetic Layer*".
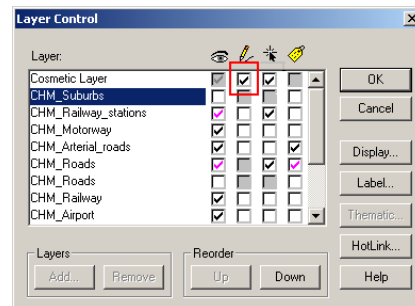
The *Cosmetic Layer* is analogous to a scratchpad or overlay on top of the map window. It is the only layer that can be used for used for making annotations on the map. The annotations can still be saved as a separate file using [*File*]→[*Save As…*] but drawing objects on the Cosmetic Layer do not affect the underlying map base.

If the *Cosmetic Layer* is not editable, select the checkbox shown above and click [*OK*]. The drawing tools will then be enabled.

The Snap Option

Often when using drawing tools it is desirable to create a new object based in part, or located relative to, an existing drawing object or feature of the map (i.e. a street, or a coastline). The "Snap" function provides a convenient way to trace objects of the map as part of a new object.

- To enable Snap press "S" while using any drawing tool. The mouse cursor will indicate with crosshairs the closest existing map object under the cursor. When you click to define a point in the new object, the location is "snapped" to the location of the crosshairs.
.
- To disable Snap press "S" again.

Drawing Tools

Text

Select the [*Text*] tool from the [*Draw*] menu:

- Click on the map to place a text label

- Type text directly onto the Map

A text object that has been placed can be edited later:

- Use the [*Select*]→[*Pointer*] menu option to change to the selection tool.

- To move the label to a different location, click on the label and drag it to a different part of the map. A line is drawn back to the original point of origin.

- To edit, rotate, or change the style of a label double-click on the label to display the *Text Object* dialog box.
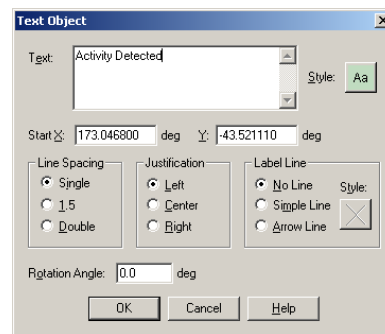
NOTE: You can specify the default style, font, size etc for all new text objects by selecting the [Draw]→[Drawing Style]→[Text] menu option. This opens the [Text Style] dialog box.

Symbol

Select the [*Symbol*] tool from the [*Draw*] menu:

- Click on the map to place a symbol

A symbol object that has been placed can then be edited:

- Use the [*Select*]→[*Pointer*] menu option to change to the selection tool.

- To move the symbol to a different location, click and drag it to a different part of the map.

- To change the symbol type double-click on the symbol to display the *Point Object* dialog box.

NOTE: You can specify the default style, font, size etc for all new symbol objects by selecting the [Draw]→[Drawing Style]→[Symbol] menu option. This opens the [Symbol Style] dialog box.
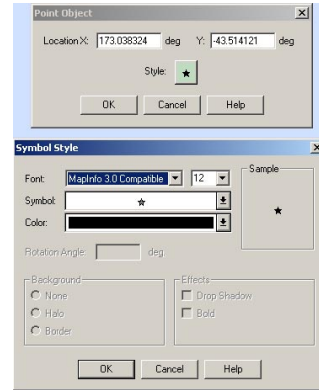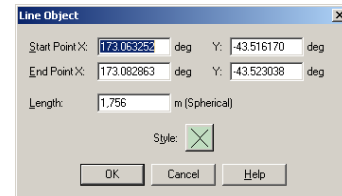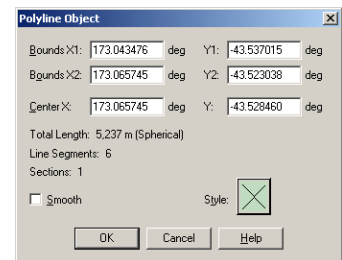
Lines, Polylines and Arcs

To draw a line between two points on the map, select the [*Line*] tool from the [*Draw*] menu:

- Click on the map at the starting position for the line and hold the mouse button down.

- Drag the line to the ending position and release the mouse button.

- Press [ESC] at any time to cancel.

- A line object can be edited later by choosing the [*Select*] → [*Pointer*] tool, then double clicking on the line.

To draw an object comprised of many line segments; select the [*Polyline*] tool from the [*Draw*] menu:

- Click on the map at the starting position for the polyline and release the mouse button.

- Move to the first point along the line and click.

- Repeat until all line segments have been placed.

- Double click to complete drawing the line.

- Press [ESC] at any time to cancel.

- A polyline object can be edited later by choosing the [*Select*] → [*Pointer*] tool, then double clicking on the polyline.

To draw an arc between two points; select the [*Arc*] tool from the [*Draw*] menu:

- Click on the map at the starting position for the arc and hold the mouse button down.

- Drag the line to the ending position and release the mouse button.

- Press [ESC] at any time to cancel

- An arc object can be edited later by choosing the [*Select*] → [*Pointer*] tool, then double clicking on the arc.

NOTE: You can specify the default style, font, size etc for all new line, polyline and arc objects by selecting the [Draw]→[Drawing Style]→[Pen] menu option. This opens the [Line Style] dialog box.

Rectangles, Rounded Rectangles, Regions and Circles

To draw a rectangle or rounded rectangle on the map, select the [*Rectangle*] tool from the [*Draw*] menu:

- Click on the map at the starting position for the rectangle and hold the mouse button down.

- Expand the rectangle to the desired size and release the mouse button.

- Press [ESC] at any time to cancel.

- A rectangle object can be edited later by choosing the [*Select*] → [*Pointer*] tool, then double clicking on the rectangle.
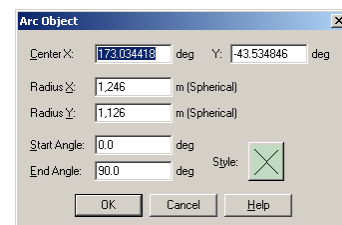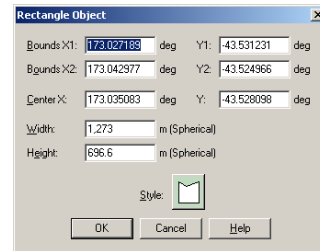
To draw a region comprised of many segments; select the [*Region*] tool from the [*Draw*] menu:

- Click on the map at the starting position for the region and release the mouse button.

- Move to the first point along the line and click.

- Repeat until all segments have been placed.

- Double click to complete drawing the region. The last two points are joined to enclose the shape.

- Press [ESC] at any time to cancel.

- A region object can be edited later by choosing the [*Select*] → [*region*] tool, then double clicking on the region.

To draw a circle between two points; select the [*Circle*] tool from the [*Draw*] menu to draw an object comprised of many line segments.

- Click on the map at the starting position for the arc and hold the mouse button down.

- Drag the line to the ending position and release the mouse button.

- Press [ESC] at any time to cancel

- An arc object can be edited later by choosing the [*Select*] → [*Pointer*] tool, then double clicking on the arc.
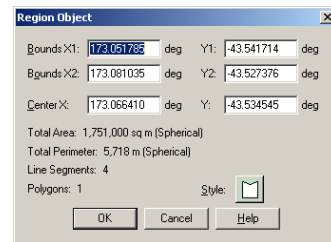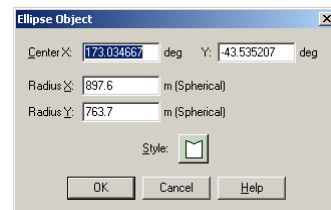
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Converting Objects

After objects have been drawn they can be converted from one format to another using the tools located under [*Draw*]→[*Object…*]

Combine

Several objects can be drawn individually, then combined into a single object. This function is used to construct complex shapes that represent a combination of different tool types, i.e. rectangles, circles and regions.

To combine objects:

- Draw objects onto the map
- Choose the [*Select*] → [*Pointer*] tool
- Click on the first object to be combined (grouped)
- Hold down the [Shift] key and select additional objects
- Select [*Draw*]→[*Object…*]→[*Combine*]

All individual objects are now combined into a single composite object. The object can now be selected, moved or edited as a single item.

Convert to Polyline

Rectangles, Regions and Circles can be converted from an enclosed (filled) object to an outline (polyline) through this tool. To convert:

- Choose the [*Select*] → [*Pointer*] tool
- Click on the object to be converted
- Select [*Draw*]→[*Object…*]→[*Convert to Polyline*]
- The object is converted into the equivalent polyline (outline) representation.
- *NOTE: If this option is grayed out then the object type selected does not support conversion to a polyline.*
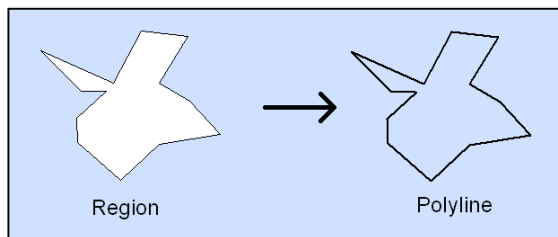
Region   Polyline

Convert to Region

Polylines can be converted from an outline object to a filled region object. To convert:

- Choose the [*Select*] → [*Pointer*] tool

- Click on the object to be converted

- Select [*Draw*]→[*Object…*]→[*Convert to Region*]

- The object is converted into the equivalent region (enclosed) representation. During this process the start and end point of the polyline are joined, to create the enclosed shape.

- *NOTE: If this option is grayed out then the object type selected does not support conversion to a region.*

Polyline → Region
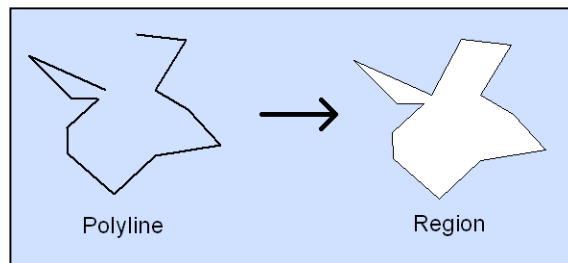
Buffer

A buffer is a region object created around one or more other objects on the map. The buffer represents a set distance from these objects and can be used in several situations, including:

- Creating areas that follow a set route, with a specified degree of tolerance. For example a 250 meter corridor along Broadway, New York.
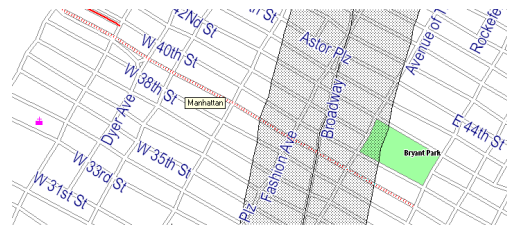
- Creating a buffer around a land feature, such as an island. For example a set of islands in the Hawaiian Island chain.
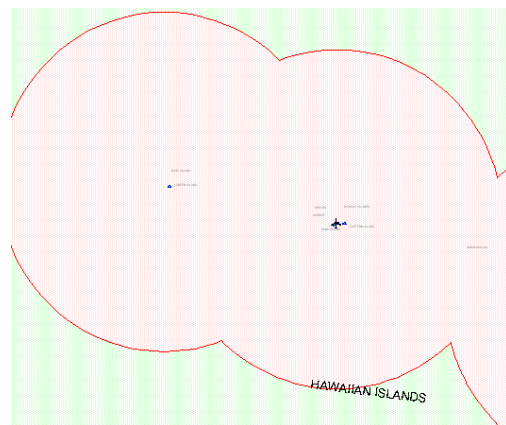
To create a buffer:

- Choose the [*Select*] →
  [*Pointer*] tool

- Click on the first object to be
  included in the buffer

- Optionally, hold down the
  [Shift] key and select
  additional objects

- Select
  [*Draw*]→[*Object…*]→[*Buffer*]

- The *Buffer Objects* dialog is
  displayed.

- Select the Value (i.e. 12) and the distance units (i.e.
  miles) of the buffer.

- The Smoothness value dictates the accuracy of the
  buffer. Higher values give a more accurate result, but
  the function operates more slowly.

- Other options on this dialog should be left at their default
  values.

- Click [OK] to create the buffer.
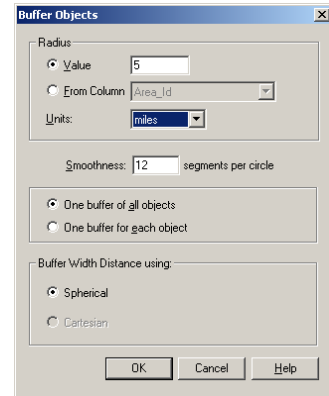
Configuring Alerts

Concepts

An alert can be automatically generated by SmartTRAC when any mobile unit behaves in an unexplained or potentially suspicious way.   For example, when a unit travels into a restricted zone, or stops for a prolonged period of time.

In SmartTRAC Workstation Alerts are viewed through the *Properties* dialog. Features are also provided within the Alerting system to forward alerts via e-mail and pager to recipients. In this case incoming alerts are listed in the mail program's window just like ordinary e-mail messages. Alert messages can be read, printed and forwarded just like ordinary mail messages too.

Architecture of the Alerting System
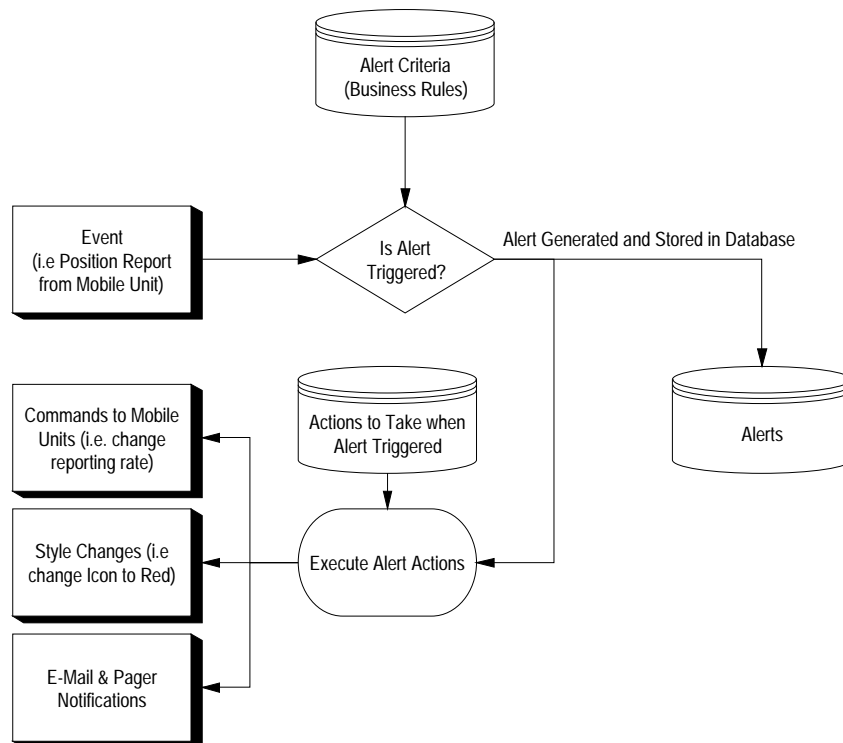
Events

An event is generated in relation to almost any transaction on the SmartTRAC system. However not all *Events* generate *Alerts*. This is because *Business Rules* are defined to filter most *Events* out - leaving only those of most interest.

Business Rules

A *Business Rule* defines the circumstances under which an *Event* becomes an *Alert*. Each Rule handles one or more Events, and considers these in conjunction with *Filter Criteria*.

A *Business Rule* examines an event to determine whether:

- The *Event* is of a type handled by this *Rule*
- The Date and Time of the *Event* is within the range specified for this Rule
- The Mobile Unit is part of a group selected for this Rule

The result of the evaluation is always a YES or NO outcome. If the outcome is YES then an *Alert* is generated. If NO then no further action is taken (the Event is ignored).

Actions

An Action is a set of steps taken in response to an Alert. Almost any type of activity that can be performed through SmartTRAC Workstation can also be executed automatically.

Actions include:

- Reconfiguring the mobile unit's reporting rate, downloading a log file or requesting an updated position.
- Sending a text message to the mobile unit
- Changing the value of a digital output control
- Setting the style of icon and track display (i.e. changing the Icon to Red when a panic button is pressed)
- Sending e-mail or pager notifications

The Alert Configuration Tool

To create, edit and delete Alerts open the Configuration Tool.

- Select [*Tools*]➔[*Alert Properties…*]

- This displays the current list of **Business Rules** (under the Alert section of the tree), and

- The current set of **Actions** (under the Action section of the tree)
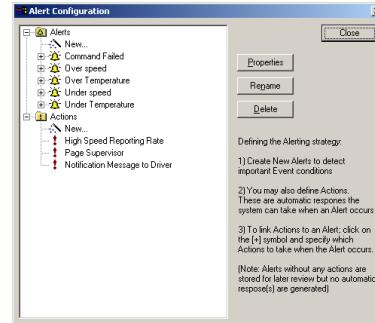
Business Rules

To define a new *Business Rule*;

1. Click on the [*New…*] item under the [*Alerts*] folder. This will open a dialog to define the criteria.

2. Change the attributes as described below, and click on [*OK*] when finished. You are then given the opportunity to name the *Business Rule*. Select a name that describes the intent of the rule; i.e. "*Detect Unit Failures*", "*Entry to Prohibited Area*".

3. You can rename or edit existing rules in the same way. Just double click on the rule to view it, or select the rule and click [*Rename*] to change the label.

Events

The simplest Rule is one that specifies a set of *Events* that will generate an *Alert*.

More complex rules still require a set of Events as a base.

- To specify which Events will trigger the alert, open the folders and browse for the correct Event(s).

- You can select any number of Events.
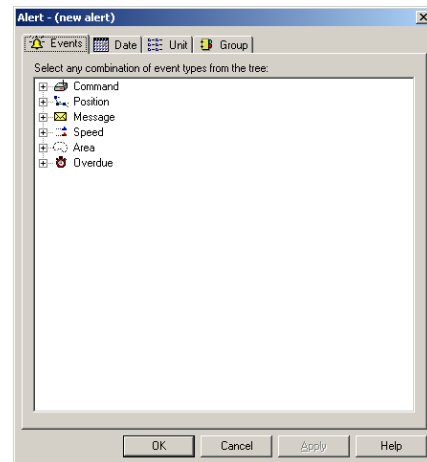
NOTE: For a definition of the Event Codes please refer to the Alerts section of this manual.

Date Range

Rules can filter the events based on the date and time:

- Select whether to trigger if the Events occur within (Include) or outside (Exclude) the specified date range.

- Specify the date and time range and whether the settings are in UTC or local time.

- The time period can also be set to repeat each day, for example so that the Alert Triggers only after-hours during summer months.
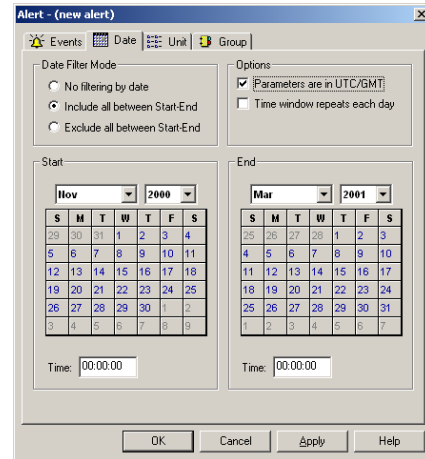
Applying Alerts to Specific Mobiles

Rules can filter the events so they are only applicable to specific mobiles, or groups of mobiles:

- Select the "[*Unit*]" option to filter by a set of individual mobiles.

- Select the "[*Group*]" option to filter by a group of mobiles.

- These tools operate the same way as the Filter in the main window (i.e. you can use the [*Ctrl*] key to select multiple groups).

Page 76
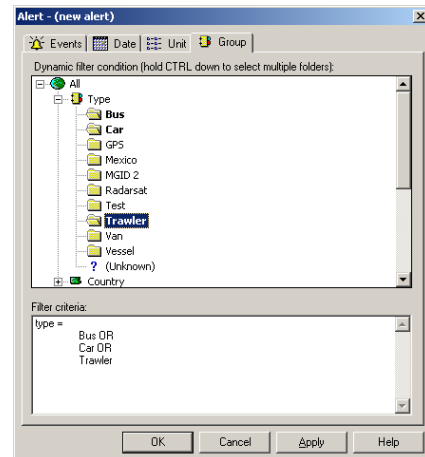
Defining Geofences

Several categories of Event are concerned with movement of mobile units between areas. Specifically the *Area.Entry*, *Area.Exit* and *Area.Within* Events.

Before it is possible to generate Alerts in these categories the appropriate areas must be drawn. An area used to monitor the behaviour of the fleet is called a *Geofence*.

Geofences can be drawn in two ways:

- In a Geographic Information System package such as MapInfo Professional. The areas can then be imported into SmartTRAC for use in Alerting. Discussion of this topic is outside the scope of the User Manual and is covered instead by the Systems Administrator material for SmartTRAC.

- Directly in SmartTRAC Workstation. This is suitable for simple types of geofence - such as a rectangle, circle or a simple area. This procedure is described here.

NOTE: Not all systems are configured for GeoFencing. If you are unable to access the Area layer described below then GeoFencing is not enabled. See your systems administrator for information on configuring the SmartTRAC Map Workspace to include the Geofence layer.

Making the Area Layer Editable
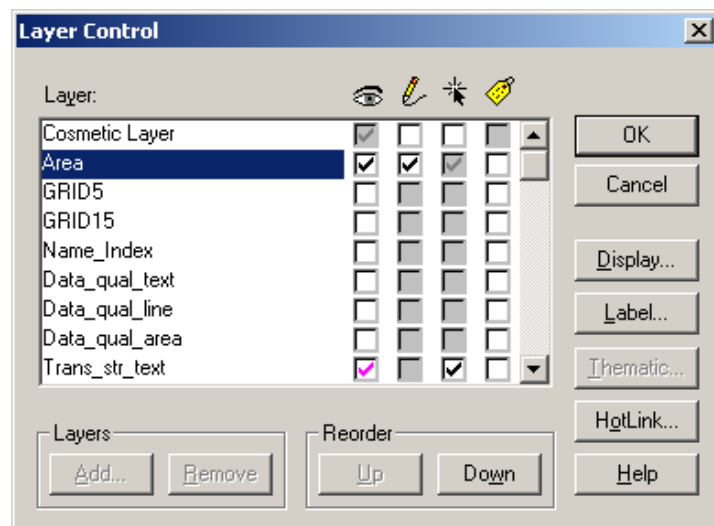
- Choose [*Select*]→[*Layer Settings*] to show the Layer Control Dialog.

- Click on the checkbox under the *Pencil* symbol to make the Area layer editable. This layer is where all Geofences are defined.

NOTE: If you can see the Area layer, but the checkbox is grayed out then the security settings for your account do not permit editing of geofences.

Defining the Geofence Area

To create a new *Geofence* use the drawing tools to define an area on the map. Refer to the section *Drawing and Annotating on the Map* for further details on the use of each type of drawing tool.

Only the following tools can be used to create Geofences:

- Rectangles

- Circles

- Regions

- Region objects produced through use of the Buffer tool ([*Draw*]→[*Object…*]→[*Buffer*])

- A combination of any of the above through use of the Combine tool ((([*Draw*]→[*Object…*]→[*Combine*]))

- *NOTE: Other drawing objects are not suitable because they do not have an area that a position can be tested to determine whether it is inside or outside. For this reason objects such as lines, text or symbols cannot be used as part of a Geofence.*

Changing the Geofence Style

Because Geofences sit on top of all other layers it is important that they are transparent. This allows the map display below the Geofence to remain visible even though the Geofence overlays the map.

To make a Geofence transparent, double click to bring up the *Properties* Dialog:

- Click on the [*Style*] setting

- Change the [*Fill Pattern*] to N (None).

- You can also specify other style settings to indicate what type of geofence you are drawing; i.e. Red for Prohibited Areas, Green for Safe Zones.

- The *Sample* section at the bottom of the dialog indicates approximately how the new Geofence will look on the map.
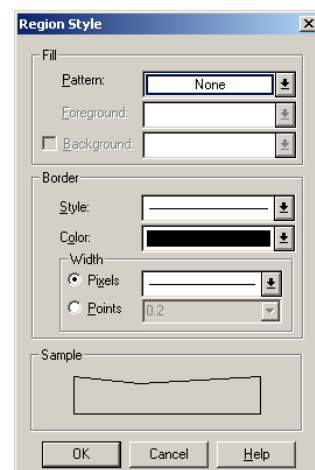
Naming and Numbering the Geofence

To work with the Alerting system each geofence must have a name and number assigned.

After you have drawn the object select the [*Analyze*]→[*Info*] tool and click on the newly defined Geofence. This will display the *Info Tool*.

If the map is cluttered you may need to select the "Area" row first, then the following dialog should be displayed.

Info Tool

Area_Id: 500
Area_Type: Route
Name: Chicago to Denver

<< >> List Area
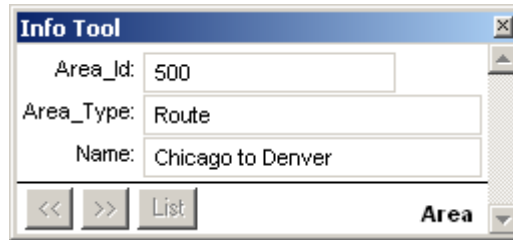
- Enter a number into the *Area_Id* field to uniquely identify this Geofence. This number can be anything that is meaningful - a route number or simply an ascending sequence; 1,2,3…

- Enter an *Area_Type*. This is optional, if entered it can be used later during display and reporting to separate different types of Geofence.

- Enter a name for the Geofence. This name is used by the Alerting System.

Modifying an Existing Geofence

- To modify the attributes of an existing Geofence use the Info tool in the same manner as for a new Geofence.

- To modify the geography (i.e. to move the geofence on the map) use the [*Select*]→[*Pointer*] tool to select the object then drag it to a new location.

- The exact location can be specified by double-clicking and typing coordinates into the dialog box.

Deleting a Geofence

To delete a geofence:

- Use the [*Select*]→[*Pointer*] tool to select the object.

- Select [*Edit*]→[*Cut*] (or)

- Press the [*Delete*] key.

Alert Actions

NOTE: If you previously worked through the GeoFencing section, return now to the Alert Configuration screen by selecting [Tools]→[Alert Properties….]

To define a new *Action*;

- Click on the [*New…*] item under the [*Action*] folder.

- Change the attributes of the *Action* as described below, and click on [*OK*] when finished.

- You are then given the opportunity to name the *Action*. Select a name that describes what happens when this action executes; i.e. "*Page Shift Supervisor*", "*Set Reporting Rate to 15 minutes*".

- You can rename or edit existing actions in the same way. Just double click on the rule to view it, or select the rule and click [*Rename*] to change the label.

Changing Mobile Reporting Rates
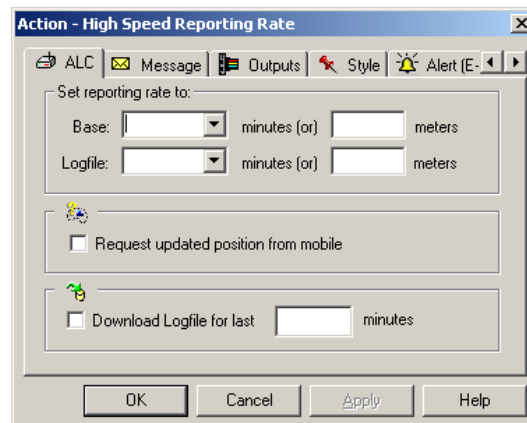
An Action that changes the Reporting Rate operates in the equivalent manner to changing a reporting rate, requesting a position update, or downloading a logfile from a mobile within Track Explorer.

For details on performing these functions refer to the section *Sending Commands to Mobile Units*.

Sending a Message to a Mobile

A message can be issued to the mobile unit that generated the Alert.

The text in the message consists of literal text and macro expressions that are expanded from the *Alert* itself and other relevant data. The full list of Macro expansions is available from the drop down dialog.
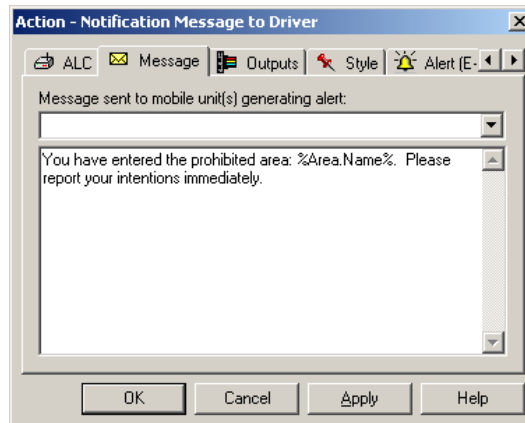
Macro expressions are grouped according to type. The table following includes the most common macros. Items with an "*" indicate that several formatting options are available; select from the drop down list to view the available formats:

ID	The unique identification number for this Alert
Type	Type of Alert. Refer to the *Alerts* section for further information
Priority	The configured priority for this type of Alert
Detected.*	Date & Time of Event. Versions with UTC are the UTC/GMT date/time.
Description	Additional parameters related to the specific Alert generated
Action.Name	The name of the Action being executed
Filter.Name	The name of the Business Rule that triggered the Alert
Msg.Sent.*	Date/Time the Message was sent from the Mobile Unit
Msg.Processed.*	Date/Time the Message was processed by the Wireless Network
Msg.Delivered.*	Date/Time the Message was processed by SmartTRAC
Msg.Text	Text message (only for e-mail/text messages to/from mobile units)
Pos.Lat.*	Latitude at time Alert was generated
Pos.Long.*	Longitude at time Alert was generated
Pos.Altitude.*	Altitude at time Alert was generated
Pos.Prev.*	As for Pos, but for the previous position received before the Alert
Pos.AveSpeed.*	Average speed of the mobile, in a variety of measurement units
Pos.AveHeading	Average course-over-ground of the mobile
Pos.Type	The type of position code. Refer *SmartTRAC Information Layers*
Area.Name	Area the mobile entered/exited (if this is an area related Alert)
Unit.Callsign	The callsign of the mobile unit (as displayed on the Unit List)
Unit.Name	The name of the mobile unit (as displayed on the Unit List)
Unit.Type	The mobile type (as displayed on the Unit List)

Changing Digital Output States
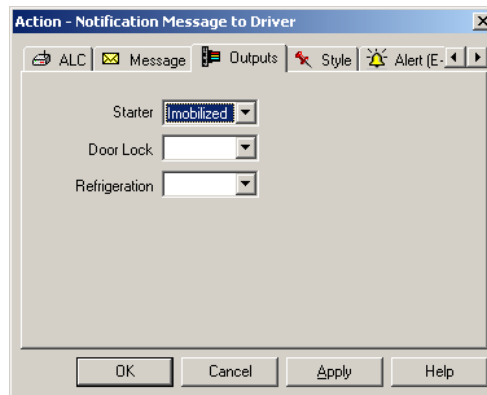
An Action defined to change the Digital Output lines operates in the equivalent performing this function within Track Explorer.

For details on performing these functions refer to the section *Sending Commands to Mobile Units*.

E-Mail Notification
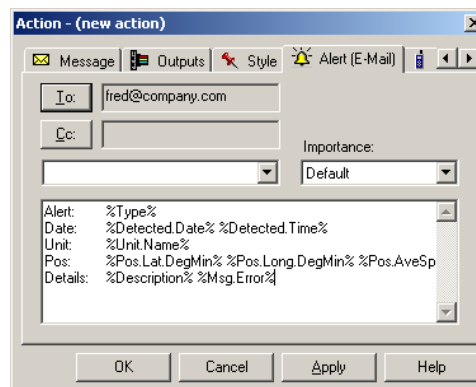
An Alert can be e-mailed to one or more recipients. Click on the [*To*] and [*Cc*] buttons to indicate where this action should send the Alerts.

As with messages sent to a mobile unit the text of the e-mail can be configured with Macro Expressions. Refer to the *Sending a Message to Mobile* section on previous pages for details.

Cellular/Pager Notification

An Alert can be transmitted via pager or cellular phone.

NOTE: If your cellular or pager provider has an e-mail gateway then use the preceding section to configure transmission to an e-mail address. Use this section only if your system is configured with a direct wireless gateway for Short Messaging Services. See your systems administrator if you are unsure which method to use.

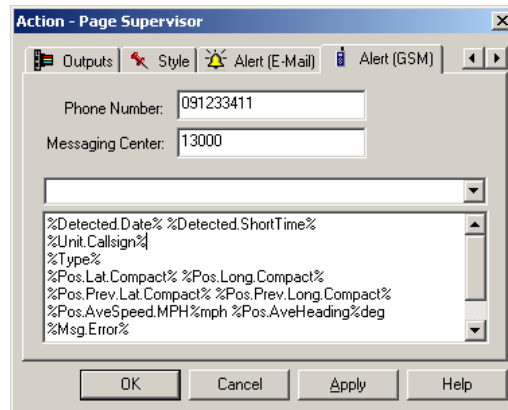Enter the cellular phone number to transmit the message to. For some older GSM (European & Asian) cellular networks and phones it is also necessary to specific the Short Messaging Service Center number. See the Short Messaging or Text Messaging documentation from your cellular provider for details.

As with messages sent to a mobile unit the text can be configured with Macro Expressions. Refer to the *Sending a Message to Mobile* section on previous pages for details.

Setting Actions to Trigger from an Alert

After you have defined *Actions*, they can be linked to the *Business Rules* defined in the *Alerts* section. To do this:
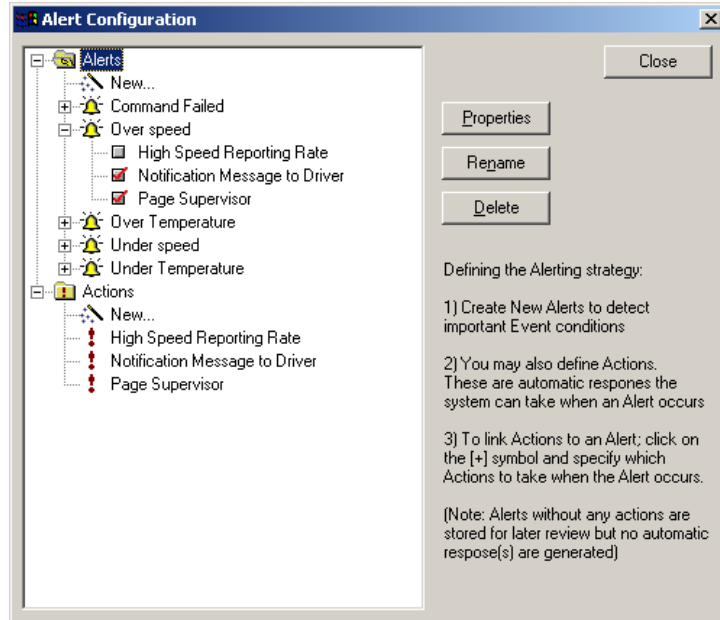
- Open the [+] folder beside the *Rule* in the [*Alerts*] folder

- The *Actions* show as a set of checkboxes

- Enable or disable the *Action* by clicking on the checkbox. The items marked with a red checkmark are the *Actions* that will be automatically triggered when the *Alert* is generated.

NOTE:

- *If multiple actions are defined that alter the same setting (i.e. the mobile reporting rate) then the last Action shown in the list takes precedence.*

- *It is good practice to test a Business Rule <u>before</u> enabling any Actions. When the Alert has been observed to be triggering as expected the Actions can be progressively enabled.*

- *Think carefully about any Alerts an Action itself may trigger. For example; setting an Alert to detect command failures, linked to an Action that itself issued a command is not recommended. This is because such an alert loops; i.e. the alert happens, so a command is sent that triggers an alert that sends a command and so on.*

How Do I?

Change the Label Format for Displayed Mobiles

By default, displayed mobiles are labeled with their unit name. You can change the label to include one or more of the mobile's attributes as follows:

- Select Layer Settings from the Select tool menu. The Layer Control dialog appears.

- Click on the Label button. The Label Options dialog is displayed.

- Use the Label with drop-down list box to choose the attribute to label displayed mobiles with.

- Click OK. The Label Options dialog is closed.

- Click OK. The Layer Control dialog is closed and displayed mobiles are labelled according to the new format.

Track Explorer stores the new labeling format when you exit so that it is used during future sessions.

Changing the Units for Distance Measurements

You can change to a different unit of distance as follows:

- Click on the Select menu and choose Map Properties. The Map Options dialog is displayed.

- Click on the Distance Units drop-down list box and select the required units.

- Click OK to store the settings and close the dialog.

All measured distances are now displayed in the new unit.

Generating Surveillance Reports

Much of the information available in the Track Explorer can be copied into other Windows software, for example Microsoft Word, Excel, and Exchange. This allows you to quickly include detailed and relevant information in your mobile activity reports and e-mails. In particular you can:

- Copy the map display including all mobiles, tracks and labels

- Copy mobile and alert data

- Send the details of a mobile in your e-mail messages; just drag the mobile of interest from the unit list into the message area of the e-mail message

- Export the map window as a bitmap.

Troubleshooting

Why are the drawing tools unavailable?

The tools in the Draw menu are disabled when the current layer settings are such that no map layers can be annotated. You can reset the attributes of one or more layers so that they can be annotated as follows;

- Select Layer Settings from the Select tool menu.

The Layer Control dialog appears. The left-hand side of the dialog lists the individual layers of your map; the check boxes beside each layer show the status of that layer. The column headed by a picture of a pencil indicates the status of annotation for a layer; layers that have a tick in this column can be annotated.

- Activate on the Annotate check box for the layer you want to annotate.
- Click OK.

The dialog is closed and the tools in the Draw menu are now available. You may also need to Save the current workspace if you want these new layers settings to be saved for future sessions.

Why can't I Display Labels?

The Label tool in the Analyse menu can be used to add predefined labels to a layer of the map only when layer settings are such that the layer of interest can be labelled. You can reset the attributes of one or more layers so that they can be labelled as follows;

- Select Layer Settings from the Select tool menu.

The Layer Control dialog appears. The left-hand side of the dialog lists the individual layers of your map; the check boxes beside each layer show the status of that layer. The right-most column headed by a picture of an address label indicates the status of labelling for each layer; layers that have a tick in this column can be labelled.

- Activate on the Label check box for the layer you want to label.

- Click OK.

The dialog is closed and the Label tool can now be used in conjunction with the updated layers. You may also need to Save the current workspace if you want these new layers settings to be saved for future sessions.

Why can't I select Mobiles on the Map?

The Select pointer can be used to select objects only when the layer settings for that layer are such that the layer of interest can be labeled. You can reset the attributes of one or more layers so that they can be selected as follows;

- Select Layer Settings from the Select tool menu.

The Layer Control dialog appears. The left-hand side of the dialog lists the individual layers of your map; the check boxes beside each layer show the status of that layer. The third from left column headed by a picture of a pointer indicates the status of selection for a layer; layers that have a tick in this column can be selected.

- Click on the Select check box for the layer you want to select objects on.

- Click OK.

The dialog is closed and you can now select the objects on the updated layer. Track Explorer stores the new layers settings when you exit so that they are available during future sessions.

Installing SmartTRAC and Related Tools

This document describes the process for installing SmartTRAC Workstation software on workstations running Microsoft 32 bit operating systems. Should you encounter any problem completing this process please refer to the technical support documents on the Absolute website at: www.AbsoluteCommunications.com

As part of the installation procedure it is recommended that you mark off each step in the installation as it is performed. That way if any step fails you will be able to inform technical support of the current status. In particular, please write down the details of any error messages that occur during the installation process.

Pre-Installation Steps

To begin the installation you will require the following CDs:

- SmartTRAC

You may also have additional CDs that require installation after SmartTRAC in order to use the system. Check for special installation instructions provided with the system, as these may include settings for the following items and/or installation steps in addition to those indicated here for:

- Oracle 8i (for Oracle based installations only)
- Map Data CDs from commercial suppliers

Please Note: In order to install SmartTRAC the client machine must have Windows 98, ME, NT or 2000 installed.

Minimum hardware requirements are:

- Pentium II 300MHz

- 64MB RAM

- 1GB Hard Disk Drive (depending on map data requirements)

- An 800x600 display resolution

If you are installing the application on a system that is running Windows NT Workstation 4.0 or Windows 2000 Professional you must logon on with an account that has Administrator rights *before* commencing installation.

Installing SmartTRAC

- Close any applications that are currently running

- Insert the SmartTRAC CD and wait a few seconds for the startup screen to be displayed.
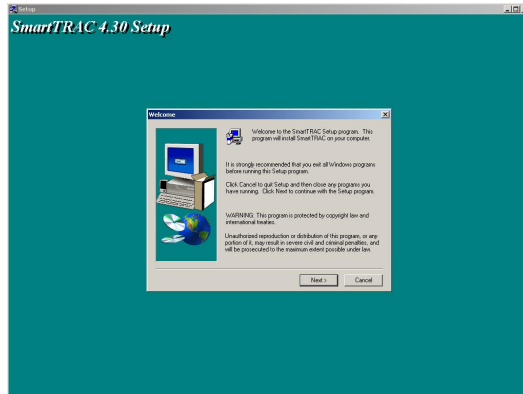
- Click on **Next>** to continue

- Click on **Yes** to accept the licensing agreement

- Unless your IT department has instructed otherwise, click on **Next>** to accept the default location for the destination folder (location of the program folder)
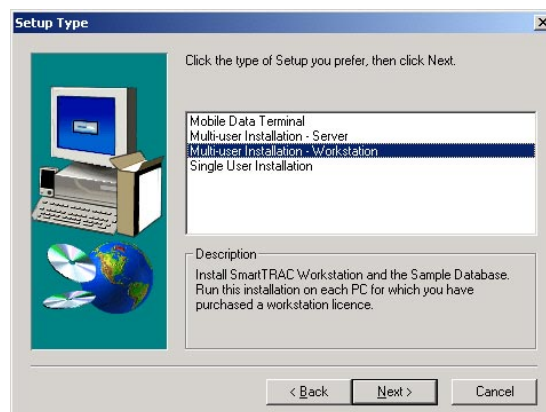
| Select a Setup Type As Follows:	
Multi-User Installation–Workstation:	If you are installing a multi-user configuration select this option
Single User Installation:	If you are installing a standalone system select this option

- Click on **Next>** to continue

- Select the program folder that will display the SmartTRAC icons. Unless your IT department has instructed otherwise, click on **Next>** to accept the default program folder.

- The installation process will now begin. You should be presented with a screen that displays a status bar and the SmartTRAC logo.

- As part of the installation the MapInfo Run Time setup process automatically begins.

- Enter your name, company and serial number into the next screen then click on **Next>**. Refer to the CD packaging for serial the serial number.

- You will be prompted by the next screen to confirm this information. If is correct click on Yes. If you made a mistake click on No and re-type the information. Repeat this process until you are satisfied it is correct.

- You will now be presented with the MapInfo Destination Folder screen. Unless the client IT department has instructed otherwise, click on **Next>** to accept the default program folder.
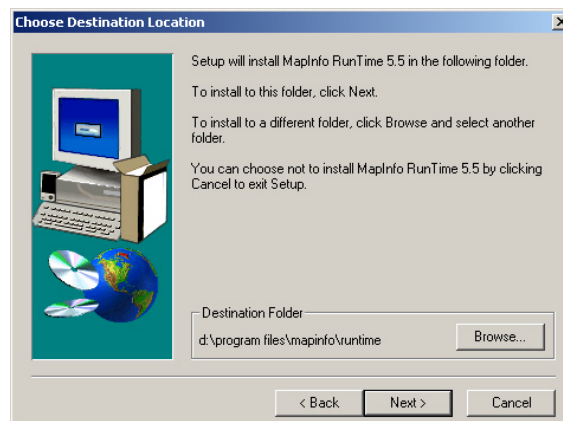

Please Note: If the above screen is not automatically presented to you it could be hidden in the background! If this is the case <Alt> + <Tab> to cycle through the opened programs until you locate it.

- MapInfo will now present you with your current settings before the copying process begins. If all the statements are correct click on **Next>**. If you made a mistake click on **<Back** and re-type the information.

- The process begins and you are presented with a screen asking you to wait.

- Once MapInfo has copied program files it will prompt you to click on **Finish** to complete the process.

- By clicking on **Finish** you will have completed the SmartTRAC installation.
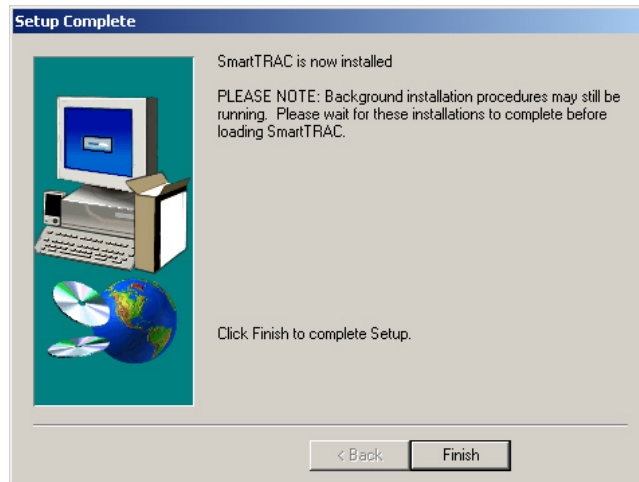
1. **If you are installing a Microsoft Access Based Product the Install Procedure is now complete. You may optionally proceed to the next step to select a database file.**

2. **If you are connecting to an Oracle database you must install the Oracle 8i package and configure it separately. Please contact your Systems Administrator for the correct Oracle and Net8 configuration options.**

Selecting a Database File

If you are running SmartTRAC as part of an Enterprise system on Oracle do not attempt to alter database settings, instead go directly to the next step (Loading SmartTRAC Workstation).

The following two database files are shipped with SmartTRAC Workstation:

1. **STSAMPLE.MDB.** A sample database for use in learning about the product. This is the default selection. You should use this database to learn about SmartTRAC.

2. **STBLANK.MDB.** An empty database for use with your fleet. Once you are familiar with the product, return to this section to see how to change databases. See also the section *Adding & Editing Mobile Details* for further information on entering your own fleet of mobiles.

NOTE: Your systems administrator or SmartTRAC distributor may have provided a pre-configured database file for use. If this is the case; substitute that filename for *STBLANK* when changing databases.

To change the database for SmartTRAC Workstation:

1. Run [*Start*] → [*Programs*] → [*SmartTRAC*] → [*ODBC Configuration*]. You will see the ODBC Administrator.

2. Click on the "*SmartTRAC*" User Data Source and click on [*Configure…*]. The current settings for SmartTRAC are then displayed.

3. Click on [*Select*] and choose the database you wish to use. Generally this is STBLANK. If you have multiple users the database may also be located on a network server, where it can be accessed by all Workstations.