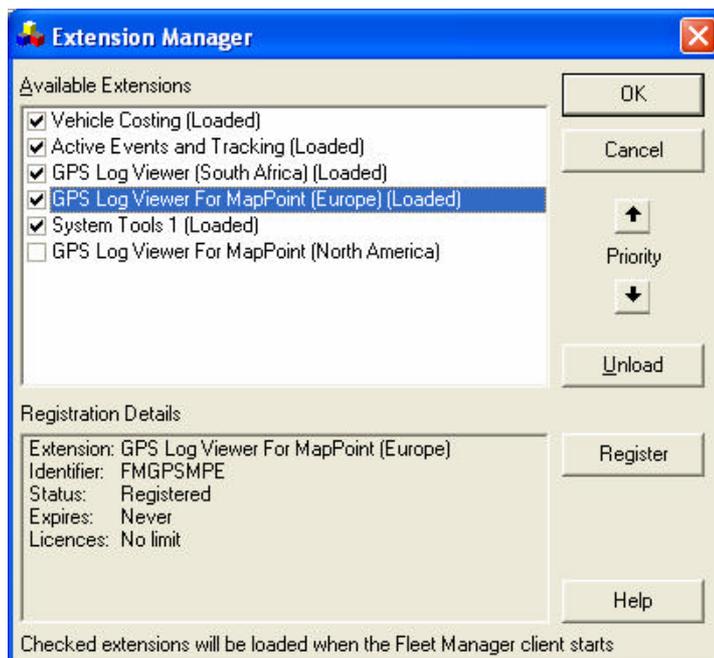# GPS Log Viewer for MapPoint

Introduction

The purpose of this document is to describe how to analyse GPS data using the Fleet Manager 2002 application software and the "GPS Log Viewer for MapPoint" Extension. Please consult the "Fleet Manager GPS Functionality" document for general information on GPS hardware, device driver and data recording configuration. For information on Geo-fencing (defining events based on geographic zones), please refer to the "How to do Geo-fencing with the FM200" document. For detail on the use of Viewer extensions in active tracking, refer to the "Fleet Manager Active Events and Tracking Extension" document.

Note: You will require Microsoft's MapPoint 2002 (either North America or Europe versions), installed on your computer, in order for the GPS Log Viewer for MapPoint Extension to function properly.

Installing and Loading the Extension

The "GPS Log Viewer for MapPoint" Extension is installed by running the "Setup.exe" executable in the "GPS Log Viewer for MapPoint" folder on your FM2002 CD (Z:\Other\Extensions\FM GPS Log Viewer For MapPoint\Setup.exe). The installation procedure will prompt you to specify which version of the Extension, i.e. North America or Europe, you wish to install. Select the version applicable to your MapPoint version and fleet location.
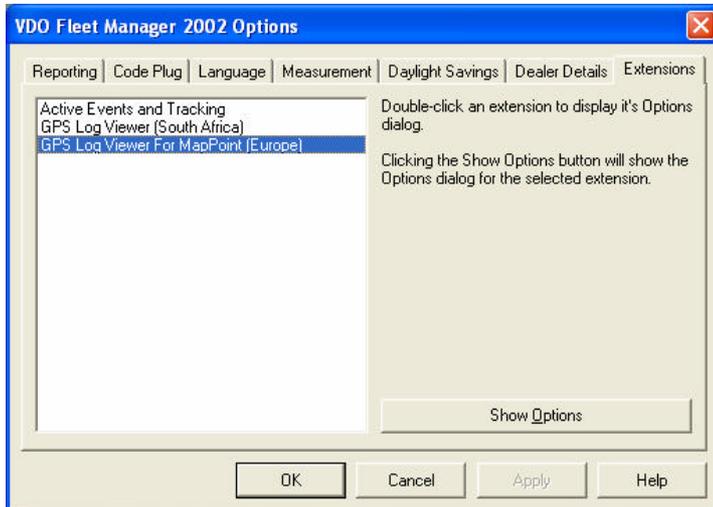
Once installed, the Extension is loaded using the Extension Manager in the Fleet Manager 2002 application. It can be configured to load automatically at start-up by checking the box next to the "GPS Log Viewer for MapPoint" item in the list of available Extensions.
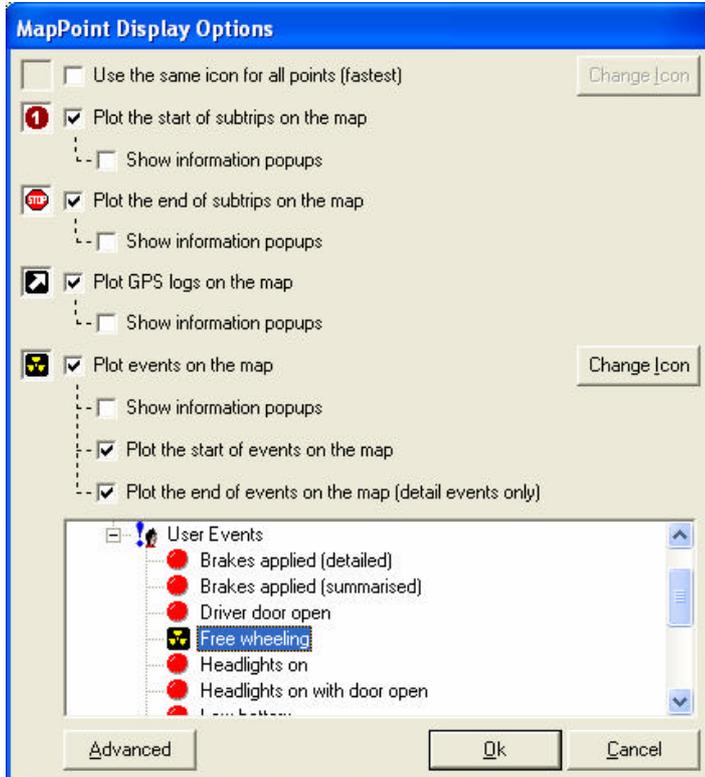
Specifying MapPoint Display Options

The Extension adds an item to the list of loaded extensions on the Extensions tab of the Options dialog.

Double clicking the item, or selecting it and clicking the Show Options button, displays the Extension's Display Options dialog. This dialog is also accessible from the Extension's Criteria Wizard. This will be described in more detail later in this document.
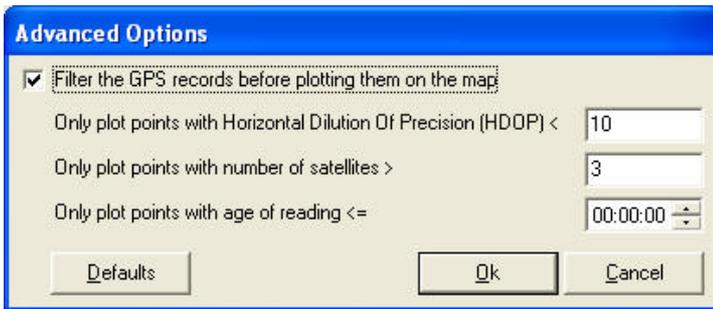

The Options dialog allows you to specify which points to display on the map, and how MapPoint should display them.

? Different icons can be selected to represent different User and Default events. (Double click an item in the Events tree, or select it and click the Change Icon button.)

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? The "Show information popups" checkboxes allow you to automatically display point information when MapPoint displays the GPS log. This is especially useful for quickly finding a subtrip start or endpoint.

? The "Use the same icon for all points" checkbox allows you to quickly display a GPS log using the same icon for all points. The process of loading and displaying logs in MapPoint is substantially faster using this option.

Note: The options you specify in this dialog are used as the default display options in the Extension's Criteria Wizard, but can be overridden in the Criteria Wizard at the time of generating a map.

By clicking the Advanced button, you can define advanced filters to be applied to the GPS logs when plotting them on the map. These filters generally determine the accuracy of the points displayed.

? HDOP is a measure of positional accuracy of GPS points. A lower HDOP indicates a higher accuracy.

? The number of satellites detected by the GPS unit when the point was recorded, also influences accuracy. A minimum of 4 satellites is required for a three-dimensional fix. More satellites usually constitute higher positional accuracy.

? When the GPS unit is unable to obtain an accurate fix, it saves the previous accurate position, as well as the time since last accurate position (age of reading). By setting the maximum age of reading to zero, you exclude any points that are inaccurate according to the GPS's factory set criteria.
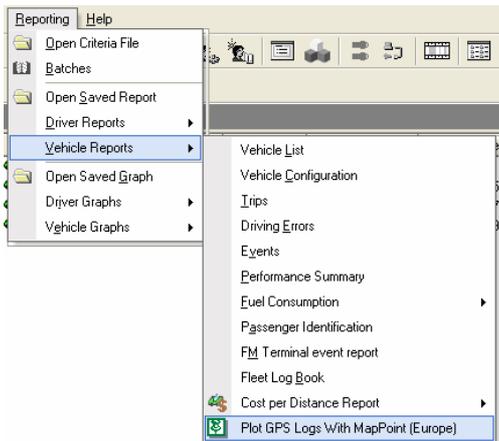
Displaying GPS Logs in MapPoint

The Extension makes use of the familiar Criteria Wizard, allowing you to select the information you would like displayed on the map. The Criteria Wizard filters the GPS data in the FM database based on your selection and displays the resultant points on the map in MapPoint.

Accessing the Extension's Criteria Wizard

The Extension adds items to the menu bar, tool bar and right-click menu of the main program window as well as the menu bar and tool bar of the Activity Timeline. By selecting any of these items, the Extension's Criteria Wizard is launched:
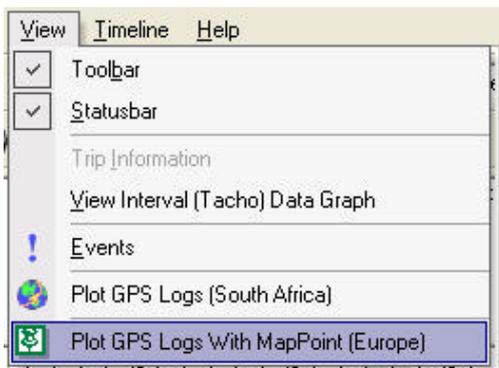
Select Reporting – Driver/Vehicle Reports – Plot GPS Logs with MapPoint from the main menu:

Or select a Driver, Vehicle or Reporting Group in the Tree View or List View window of the main program window and then click the Extension Icon in the tool bar:
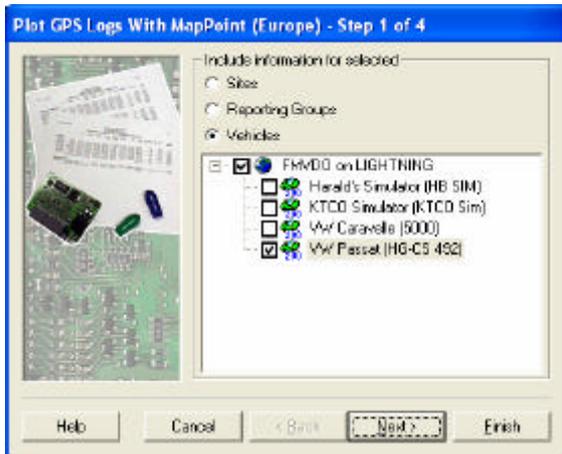

Alternatively, select a subtrip or time range on the Activity Timeline and then select View – Plot GPS Logs with MapPoint from the Timeline's menu bar or click the Extension Icon in the Timeline's tool bar:
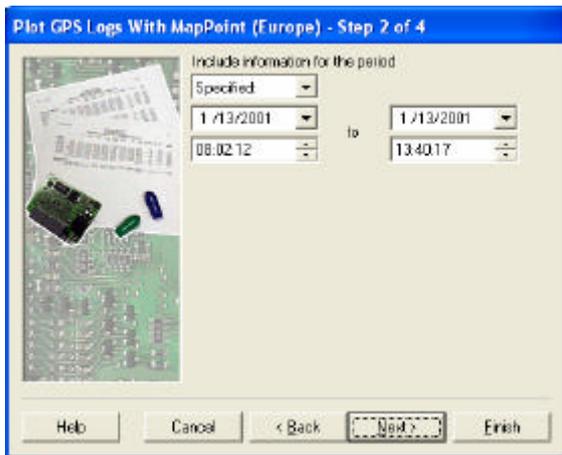

Selecting GPS data to display in MapPoint

Depending on your selection and method used above, the Extension's Criteria Wizard is displayed, with certain pre-selected settings. From the Activity Timeline for example, the Criteria Wizard is automatically populated with the selected vehicle and date/time range. Events displayed on the Timeline are automatically selected for display on the map. Of course these settings can be overridden. The last pane of the Criteria Wizard has a More Options button that displays the Extension's Display Options dialog. The settings you specified in the Options dialog will be used as default settings. You can change these default settings at this point to suit your requirements. The Advanced Options form is also available at this stage, allowing you to control the filtering of GPS data.
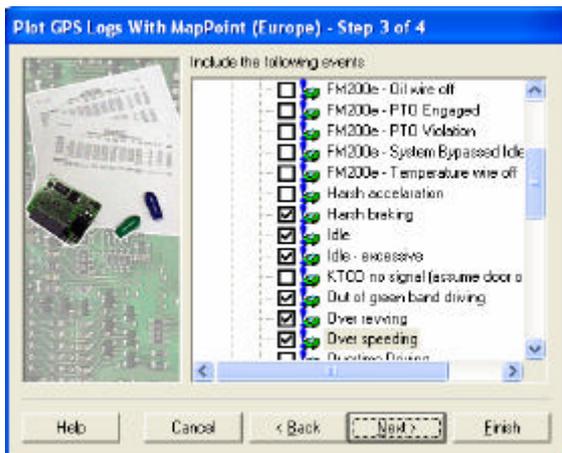
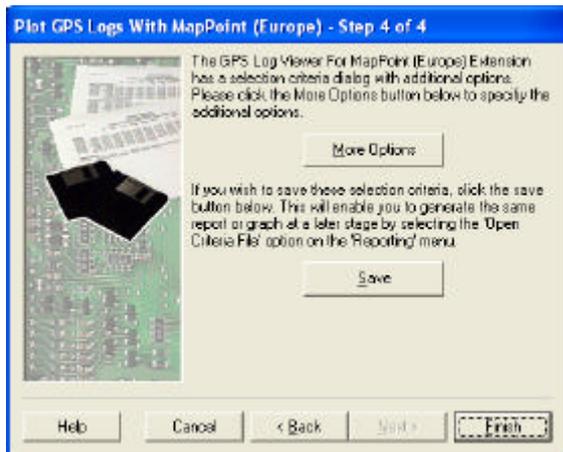**Step 1:** Select the Vehicle, Driver, Site or Reporting Group

Step 2: Select the time period
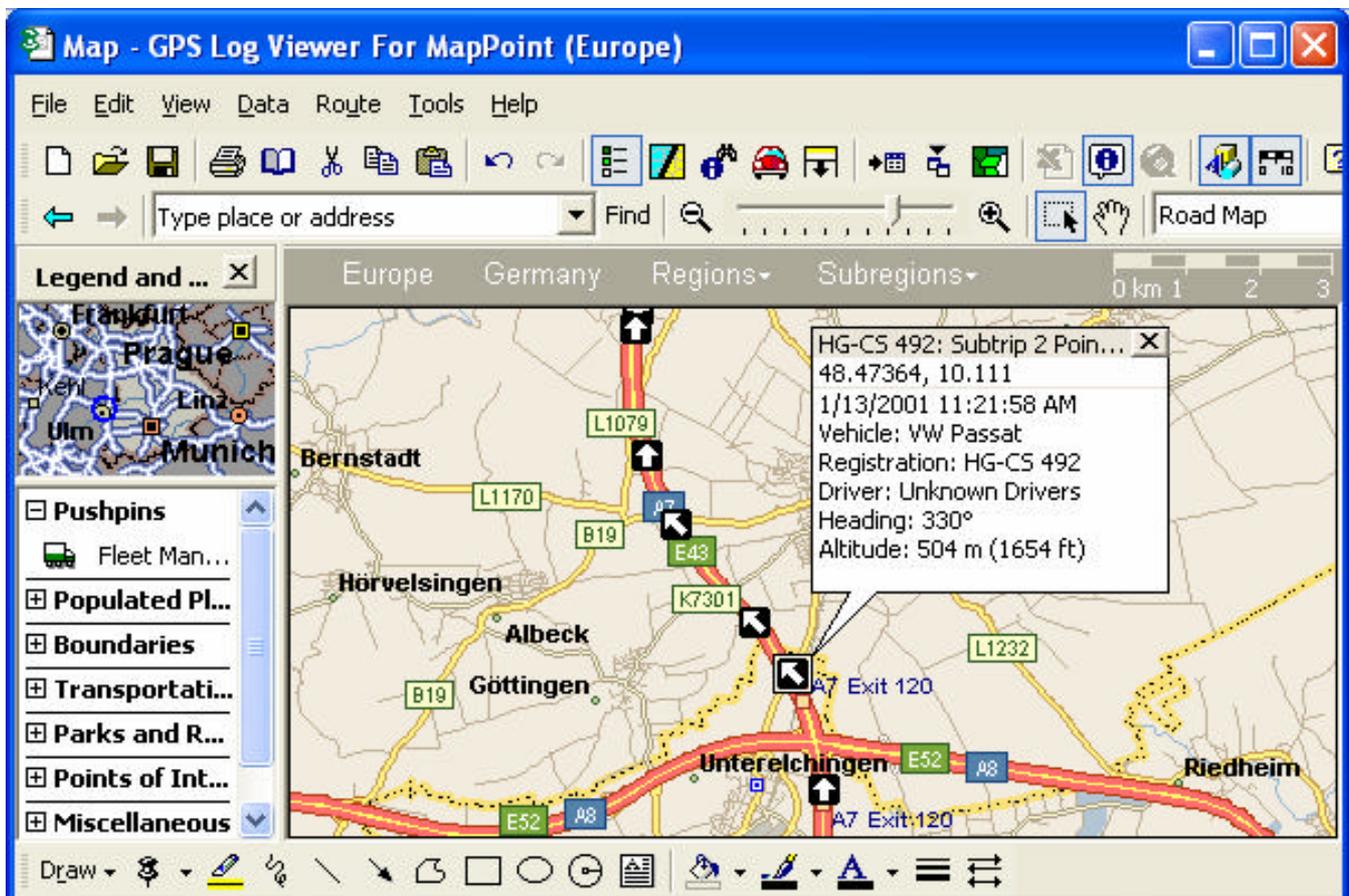

Step 3: Select Default and User Events

Step 4: Save selection to Criteria file and/or set Display Options

All of the parameters specified in the Criteria Wizard can be saved in Criteria Files by clicking the Save button, allowing you to easily reproduce maps with your specific preferences. The last pane of the Criteria Wizard has a More Options button that displays the Extension's Display Options dialog. The settings you specified in the Options dialog (as described in Specifying MapPoint Display Options above) will be used as default settings. You can change these default settings at this point to suit your requirements. The Advanced Options is also available at this stage, allowing you to control the filtering of GPS data.

After clicking the Finish button in step 4 of the Criteria Wizard, the GPS data is filtered based on the selected criteria, and the required GPS Logs are exported to MapPoint. MapPoint will automatically load and display the data on a street level map. Any Locations defined using the Fleet Manager System Tools 1 Extension will also be drawn on the map. Note that moving the Location shapes or their labels will not change the corresponding Location in the FM system. Editing Locations must be done from the Fleet Manager System Tools 1 Extension.

Note: The accuracy of displayed logs on the map is dependant on the positional accuracy of the GPS data, as well as the positional accuracy of the actual map. If the points on the map are not displayed on the road as expected, try adjusting the filters using the Advanced Options dialog, i.e. lower the HDOP value, increase the number of satellites value and/or lower the age of reading. Under most circumstances, the default settings should be adequate. MapPoint maps are fairly accurate, especially in major metropolitan areas. There are however many inaccurate sections on the maps for example curved on and off-ramps, smaller towns etc.

Inside Microsoft MapPoint 2002

Microsoft's MapPoint 2002 GIS software includes functionality for importing customer data, defining points of interest, displaying route points, planning and optimising routes, printing driving directions and much more. Please refer to your MapPoint documentation for more information on these functions.