Getting Started Guide

GPS Pathfinder® Office software
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Introduction

In this chapter:

- Welcome
- About the GPS Pathfinder Office Software
- Related Information
- Technical Assistance
- Your Comments
Welcome

Welcome to the Trimble® GPS Pathfinder® Office software. This manual describes how to install, set up, and use the GPS Pathfinder Office software.

Even if you have used other Global Positioning System (GPS) products before, Trimble recommends that you spend some time reading this manual to learn about the special features of this product. We assume you are familiar with basic GPS and GIS concepts, which are explained in the Mapping Systems General Reference. If you are not familiar with GPS either read the booklet GPS, A Guide to the Next Utility (available from Trimble) or visit our website, www.trimble.com, for an interactive look at Trimble and GPS.

Trimble assumes that you know how to use the Microsoft® Windows® operating system.

About the GPS Pathfinder Office Software

The GPS Pathfinder Office software, together with its associated utilities, provides all the functionality you need to manage and process data collected using Trimble Mapping and GIS data collection systems. It provides all of the tools that you need to correct, view, and edit Global Positioning System (GPS) data collected in the field, and to export it in a format suitable for your GIS, CAD, or database system.

The software runs under the following Microsoft operating systems:

- Windows NT® 6.0 (SP6 or later)
- Windows 2000
- Windows XP
- Windows XP Tablet PC Edition
The GPS Pathfinder Office software enables you to:

- plan the best times to collect GPS data, using the QuickPlan™ mission planning utility
- create separate projects, which lets you manage the data associated with these projects effectively and conveniently
- construct and edit data dictionaries, which are used to control the data collection operation and ensure that the collected data is complete, accurate, and compatible with your GIS, CAD package, or database
- convert data from a GIS, CAD package, or database format to the Trimble SSF format so that you can take the data back into the field to check and update it
- transfer files to and from field computers running data collection software
- edit collected data in the office
- display collected data in the office against multiple background files in vector or raster formats, including images from an ArcIMS or OpenGIS Web Map Server
- process the GPS data to improve its positional accuracy, including data collected using a GPS receiver with H-Star technology, such as a GPS Pathfinder ProXH™ receiver
- export the collected, processed, and edited data to a GIS, CAD, or database format
- produce a scaled plot as a paper record of the data
Related Information

Other manuals in this set include the *Mapping Systems General Reference*. This manual introduces the basic principles of using GPS to make maps. It provides the background information you need to use Trimble Navigation Limited’s mapping products including GPS receivers, field computers, and software. To obtain this publication, go to the Trimble website at [www.trimble.com/pathfinderoffice.html](http://www.trimble.com/pathfinderoffice.html) and, in the More Info section, click Mapping Systems General Reference.

Other sources of related information are:

- **Help** – The software has built-in, context-sensitive online Help that lets you quickly find the information you need. Access it from the Help menu. Alternatively, click the Help button in a window, or press [F1]. This comprehensive Help system reads like an online manual. Use the scroll buttons to move from page to page.

- **Release Notes** – The release notes describe new features of the product, information not included in the documentation, and any changes to the documentation. They are provided as a .pdf file on the *GPS Pathfinder Office Software CD* and are installed in the program directory (typically C:\Program Files\Trimble\GPS Pathfinder Office 3.10) when you install the software.

- **Website site** – For related information about the GPS Pathfinder Office software, go to the Trimble website ([www.trimble.com/pathfinderoffice.html](http://www.trimble.com/pathfinderoffice.html)).

- **Trimble training courses** – Consider a training course to help you use your GPS system to its fullest potential. For more information, go to the Trimble website at [www.trimble.com/training.html](http://www.trimble.com/training.html).
Technical Assistance

If you have a problem and cannot find the information you need in the product documentation, contact your local Distributor.

Technical Support

If you need to contact Trimble technical support:

1. Go to the Trimble website (www.trimble.com).
2. Click the Support button at the top of the screen. The Support A–Z list of products appears.
3. Scroll to the bottom of the list.
4. Click the submit an inquiry link. A form appears.
5. Complete the form and then click Send.

Your Comments

Your feedback about the supporting documentation helps us to improve it with each revision. E-mail your comments to ReaderFeedback@trimble.com.
1 Introduction
Basics of Operation

In this chapter:

- Starting the GPS Pathfinder Office Software
- Application Window
- Windows
- Toolbars
- Shortcut Menus
- Measurement Units
- Exiting the GPS Pathfinder Office Software
This chapter describes the way the GPS Pathfinder Office software and its utilities work. It also explains how to work with the software.

Trimble assumes that you know how to use dialogs, windows, and other aspects of the Windows environment.

**Starting the GPS Pathfinder Office Software**

To start the GPS Pathfinder Office software, do one of the following:

- Click on the Windows taskbar, then select *Programs / GPS Pathfinder Office*.

- Double-click the GPS Pathfinder Office shortcut icon on the desktop:

The GPS Pathfinder Office logo appears while the program is loading, followed by the GPS Pathfinder Office application window (see Application Window, page 10).
**Setting the time zone**

The first time you start the GPS Pathfinder Office software, you are asked to set the time zone. It is important to configure GPS Pathfinder Office for the local time zone. If you do not, the time records in field data files display as GPS time, which approximates Greenwich Mean Time. For instructions on how to do this, see Setting the local time zone, page 33.

**Selecting a project**

When you first start the GPS Pathfinder Office after installation, the *Select Project* dialog appears.

A project is a set of folders on the computer that store the data files for a particular job. They let you separate the data into different areas on the computer so you can keep track of different jobs separately. For instructions on how to select a project, see Selecting a project, page 35.
Application Window

When you start GPS Pathfinder Office, its application window appears. The GPS Pathfinder Office application window (with the Map and Time Line window open) is shown in Figure 2.1.

<table>
<thead>
<tr>
<th>The ...</th>
<th>does the following ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title bar</td>
<td>displays the name of the software (GPS Pathfinder Office), followed by the name of the current data file, if a data file is open. In this case tutorial.ssf.</td>
</tr>
<tr>
<td>Toolbars</td>
<td>offer convenient access to frequently used operations and utilities.</td>
</tr>
<tr>
<td></td>
<td>For more information, see page 19.</td>
</tr>
<tr>
<td>Map window</td>
<td>shows the open file along with any background files.</td>
</tr>
<tr>
<td></td>
<td>For more information, see page 63.</td>
</tr>
<tr>
<td>Time Line window</td>
<td>shows a visual display of when the data was collected along a linear time axis.</td>
</tr>
<tr>
<td></td>
<td>For more information, see page 63.</td>
</tr>
<tr>
<td>Position Properties window</td>
<td>lets you view the positions of a feature. You can also delete a position.</td>
</tr>
<tr>
<td></td>
<td>For more information, see page 75.</td>
</tr>
<tr>
<td>Feature Properties window</td>
<td>lets you view a note and view and change the attributes, status, and offset of a feature.</td>
</tr>
<tr>
<td></td>
<td>For more information, see page 75.</td>
</tr>
<tr>
<td>Status bar</td>
<td>displays the coordinated system selected and the map coordinates of the current cursor position or selected feature.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 2.1  GPS Pathfinder Office application window
Windows

The GPS Pathfinder Office software makes extensive use of windows. There are two main windows:

- The Map window
- The Time Line window

For more information, see Map window, page 13 and Time Line window, page 14.

When you run the GPS Pathfinder Office software for the first time, a default arrangement of windows appears on the screen. You can change this, so that the GPS Pathfinder Office software starts with the windows you want open.

Saving the window layout

You can set up the windows you want to open automatically when the GPS Pathfinder Office software starts. To set the window layout for subsequent sessions:

1. Resize and position the GPS Pathfinder Office windows so that they are the way you want them.
2. From the Options menu choose Save Window Layout on Exit so that it has a check mark (✓) beside it.
3. Exit the GPS Pathfinder Office software.
4. Each time you subsequently start the GPS Pathfinder Office software, it recreates the last arrangement of windows that you had when you closed the software.
Map window

The Map window is the primary means of viewing your data. It provides a plan view of the area. The Map window can display the features you have collected, the waypoints in the current waypoint file, and any number of background maps:

You can select the features, waypoints, and notes to view information about them, or change them.
**Time Line window**

The *Time Line* window provides an alternative view of your data. It displays the features and notes you have recorded in the current data file along a time axis (it does not display waypoints or backgrounds):

You can select the features and notes to view information about them, or change them.

**Manipulating and moving the windows**

You can manipulate the *Map* and *Time Line* windows like any other window. You can move them, resize them, zoom in and out, and 'pan' around the display.

**Zooming**

In both the *Map* and *Time Line* windows, you can:

- zoom in to view information in greater detail
- zoom out to view a greater area
- zoom to extents to view all the information in the window
- zoom to the scale that the map was previously set to

To zoom in:

1. Click the *Zoom In* tool: ![Zoom In Tool]. Alternatively, select *View / Zoom / In*.
   
The tool remains depressed.
2. Move the pointer over the window.
   It now displays as a magnifying glass with cross-hairs which mark the position of the pointer:

3. Do one of the following:
   - Click a position in the window.
     The scale of the window is halved, and the position becomes the new center of the window.
   - Drag the pointer across the window until you produce a rectangle that contains the data you want to zoom in on:

   ![Map Image](image_url)

   The smaller the area, the greater the scale change.

   Release the mouse button. The window zooms in on the rectangle you defined, so that the contents of the rectangle now occupies the whole window.
Zooming out is the opposite of zooming in and works in a similar way.

To zoom out:

1. Click the *Zoom Out* tool: 
   Alternatively, select *View / Zoom / Out*.

   The tool remains depressed.

2. Move the pointer over the window. It becomes "Zoom Out Tool." 

3. Do one of the following:
   - Click a position in the window. The scale of the window is doubled, and the position becomes the new center of the window.
   - Drag the pointer across the window until you produce a rectangle. The smaller the rectangle, the greater the scale change will be. Release the mouse button. The scale of the window changes, and the area previously displayed in the whole window now occupies the rectangle.

To zoom to extents:

1. Click the *Map* or *Time Line* window, to make it the active window.

2. Click the *Zoom Extents* tool: 
   Alternatively, select *View / Zoom / Extents*.

   The window now displays all the information for the visible layers in the currently-open files. The previously selected tool remains selected.

To zoom to the previous scale:

1. Click the *Map* or *Time Line* window, to make it the active window.

2. Click the *Zoom Previous* tool 
   Alternatively, select *View / Zoom / Previous*.

   The window now displays information at the scale used before you last zoomed or panned.
Panning

You can shift the contents of the Map and Time Line windows, so that they display a different area or time period of the data file. You can also configure the windows so that they pan automatically to include the currently selected item.

To pan across the window:

1. Click the Pan tool: . Alternatively, select View / Pan. The tool remains depressed.
2. Move the pointer over the window. The pointer becomes .
3. Do one of the following:
   – Click a position in the window. That position becomes the new center of the window.
   – Drag the pointer in the direction and for the distance you want to pan. A dotted line indicating the amount the window view will move appears as you drag the pointer.
Release the mouse button. The contents of the window shifts in the direction and for the distance indicated by the dotted line.

To automatically pan the *Map* or *Time Line* windows to any selected item:

1. Click the *Auto-pan to Selection* tool . Alternatively, select *View / Auto-pan to Selection*.
   
   A check mark (✓) appears beside the menu command.

2. Do one of the following:
   
   – Select a feature using *Edit / Find Feature* or *Data / Feature Properties*. The *Map* or *Time Line* window (whichever is active) automatically pans so that the item is displayed.
   
   – Select a waypoint using *Data / Waypoint Properties*. The *Map* window automatically pans so that the item is displayed.

**Tip** – You can use this option to locate a feature or waypoint which is hard to find on the *Map* or *Time Line* window.

**Selecting an item**

You can select items displayed on the *Map* or the *Time Line* window. Only one item (one feature, note, or waypoint) can be selected at a time.

- If a feature is selected in the *Map* or *Time Line* window, it is selected in both windows. It also appears in the *Feature Properties* window. (If the *Feature Properties* window is not open, double-click a feature.)

- If a waypoint is selected on the *Map* window, it is also selected in the *Waypoint Properties* window.

- If a note is selected in the *Time Line* window, it is also selected in the *Feature Properties* window.
A selected point feature, waypoint, or note has a frame around it, for example: 📌

A selected line or area feature is drawn with a thicker line type, for example: 📏

To select an item, do one of the following:

- Double-click the item to select it. The Feature Properties window or Waypoint Properties window opens.
- Click the item using the Select tool. It is shown as selected and the window it is in becomes the active window, if it was not already.
- Use the arrow keys on your keyboard to move the cursor over the map, and press the space bar to select a feature or map point.

## Toolbars

Tools with related functions are grouped together in different toolbars. Some tools display a dialog; other tools change the pointer, and some start utility programs.

### Types of toolbars in the GPS Pathfinder Office software

The GPS Pathfinder Office software has four toolbars:

<table>
<thead>
<tr>
<th>This toolbar</th>
<th>is called</th>
<th>For more information, see</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Standard" /></td>
<td>Standard</td>
<td>page 22</td>
</tr>
<tr>
<td><img src="image" alt="Project" /></td>
<td>Project</td>
<td>page 23</td>
</tr>
</tbody>
</table>
20 Basics of Operation

Displaying a toolbar

You can show or hide a toolbar.

To display a toolbar:

1. Select Options / Toolbars. There are four toolbars in the Toolbars submenu: Standard, Project, Mouse, and Utility.

Tip – To display the Toolbar submenu you can also right-click on the edge of the toolbar area.

2. If a toolbar is visible, a check mark (√) appears beside its name. Select the toolbar in the submenu to remove the checkmark. The toolbar disappears.

Select an un-checked toolbar to make the toolbar appear again.

Floating a toolbar

You can move a toolbar from its ‘docked’ position and create a ‘floating’ toolbar, so that the toolbars are in a more convenient location for you.

To make a floating toolbar:

1. Place the mouse anywhere within the area of the toolbar, but not directly over a button.

2. Click once and hold the mouse down (the toolbar is depressed).

3. Drag the toolbar away from its docked position while continuing to hold the mouse down.

<table>
<thead>
<tr>
<th>This toolbar ...</th>
<th>is called ...</th>
<th>For more information, see ...</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Mouse toolbar" /></td>
<td>Mouse</td>
<td>page 23</td>
</tr>
<tr>
<td><img src="image" alt="Utility toolbar" /></td>
<td>Utility</td>
<td>page 25</td>
</tr>
</tbody>
</table>
4. Release the mouse at a position where you want to place the floating toolbar.

To move a floating toolbar to any position on the desktop, drag the toolbar by its title bar.

To change the shape of a floating toolbar, use its window border to resize it.

To close a floating toolbar, click in a floating toolbar’s close box.

To return the toolbar to its previously docked position, double-click its title bar. Alternatively, drag it back to the toolbar area. Toolbars can be docked in any order.

**Selecting a tool in a toolbar**

To select a tool in the toolbar, do one of the following:

- Click the tool (button) on the toolbar.
- Select the equivalent menu command.

**Tip** – Position the pointer over any tool. A small yellow popup window (ToolTip) appears, showing the name of the tool. Additional information appears in the status bar at the bottom of the application window.
### Standard toolbar

The *Standard* toolbar contains tools for file and window operations:

<table>
<thead>
<tr>
<th>Click this button ...</th>
<th>to activate this tool ...</th>
<th>which does the following ...</th>
<th>The menu command equivalent is ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Open icon]</td>
<td>Open</td>
<td>opens a data file(s)</td>
<td><em>File / Open</em></td>
</tr>
<tr>
<td>![Save icon]</td>
<td>Save</td>
<td>saves a data file</td>
<td><em>File / Save</em></td>
</tr>
<tr>
<td>![Print icon]</td>
<td>Print</td>
<td>prints a data file</td>
<td><em>File / Print</em></td>
</tr>
<tr>
<td>![Map icon]</td>
<td>Map</td>
<td>opens the <em>Map</em> window</td>
<td><em>View / Map</em></td>
</tr>
<tr>
<td>![Timeline icon]</td>
<td>Time Line</td>
<td>opens the <em>Time Line</em> window</td>
<td><em>View / Time Line</em></td>
</tr>
<tr>
<td>![Feature icon]</td>
<td>Feature Properties</td>
<td>opens the <em>Feature Properties</em> window</td>
<td><em>Data / Feature Properties</em></td>
</tr>
<tr>
<td>![Position icon]</td>
<td>Position Properties</td>
<td>opens the <em>Position Properties</em> window</td>
<td><em>Data / Position Properties</em></td>
</tr>
<tr>
<td>![Waypoint icon]</td>
<td>Waypoint Properties</td>
<td>opens the <em>Waypoint Properties</em> window</td>
<td><em>Data / Waypoint Properties</em></td>
</tr>
</tbody>
</table>
### Project toolbar

The *Project* toolbar contains tools for managing projects:

<table>
<thead>
<tr>
<th>Click this button ...</th>
<th>to ...</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Image" alt="Folder" /></td>
<td>display the name of the folder set for the present project.</td>
</tr>
<tr>
<td></td>
<td>Change the project by selecting a project name from the drop-down list</td>
</tr>
<tr>
<td><img src="Image" alt="Disk" /></td>
<td>display the amount of free disk space on the drive where the current project is stored</td>
</tr>
<tr>
<td><img src="Image" alt="Folder" /></td>
<td>open the folder named in the Current Project drop-down list box in a Windows Explorer view</td>
</tr>
</tbody>
</table>

### Mouse toolbar

The *Mouse* toolbar contains tools for the mouse and view actions:

<table>
<thead>
<tr>
<th>Click this button ...</th>
<th>to activate this tool ...</th>
<th>which does the following ...</th>
<th>The menu command equivalent is ...</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Image" alt="Select" /></td>
<td>Select</td>
<td>lets you select an item in the <em>Map</em> or <em>Time Line</em> window. The pointer always appears as an arrow. Click on an item in the <em>Map</em> or <em>Time Line</em> window to select that item.</td>
<td><em>Edit / Select</em></td>
</tr>
<tr>
<td><img src="Image" alt="Measure" /></td>
<td>Measure</td>
<td>lets you measure distances between two or more points, and areas within a polygon.</td>
<td><em>Data / Measure</em></td>
</tr>
<tr>
<td><img src="Image" alt="Delete Block" /></td>
<td>Delete Block</td>
<td>lets you delete all positions within a selected rectangle.</td>
<td><em>Edit / Delete Block of Positions</em></td>
</tr>
<tr>
<td>Click this button …</td>
<td>to activate this tool …</td>
<td>which does the following …</td>
<td>The menu command equivalent is …</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------</td>
<td>----------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Pan</td>
<td></td>
<td>lets you pan across the contents of the Map or Time Line windows, so that a different part of the window is displayed.</td>
<td>View / Pan</td>
</tr>
<tr>
<td>Zoom In</td>
<td></td>
<td>lets you zoom in on a part of the Map or Time Line window. This magnifies the display by decreasing the scale.</td>
<td>View / Zoom / In</td>
</tr>
<tr>
<td>Zoom Out</td>
<td></td>
<td>lets you zoom out on the Map or Time Line window. This lets you see a greater area by increasing the scale.</td>
<td>View / Zoom / Out</td>
</tr>
<tr>
<td>Zoom Extents</td>
<td></td>
<td>acts on the Map or Time Line window (whichever is the active window). It changes the scale so that the window displays all the information for the visible layers in the currently open files.</td>
<td>View / Zoom / Extents</td>
</tr>
<tr>
<td>Zoom Previous</td>
<td></td>
<td>lets you undo the last zoom or pan command and return to the previous view.</td>
<td>View / Zoom / Previous</td>
</tr>
<tr>
<td>Auto-pan to Selection</td>
<td></td>
<td>configures the Map and Time Line windows to always display the currently selected item.</td>
<td>View / Auto-pan to Selection</td>
</tr>
</tbody>
</table>
### Utility toolbar

The *Utility* toolbar contains tools for opening utility programs:

<table>
<thead>
<tr>
<th>Click this button ...</th>
<th>to open the ...</th>
<th>The menu command equivalent is ...</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Batch Processor utility</td>
<td><em>Utilities / Batch Processor</em></td>
</tr>
<tr>
<td></td>
<td>Trimble Data Transfer utility</td>
<td><em>Utilities / Data Transfer</em></td>
</tr>
<tr>
<td></td>
<td>Differential Correction utility</td>
<td><em>Utilities / Differential Correction</em></td>
</tr>
<tr>
<td></td>
<td>Export utility</td>
<td><em>Utilities / Export</em></td>
</tr>
<tr>
<td></td>
<td>Grouping utility</td>
<td><em>Utilities / Grouping</em></td>
</tr>
<tr>
<td></td>
<td>Combine utility</td>
<td><em>Utilities / Combine</em></td>
</tr>
<tr>
<td></td>
<td>Data Dictionary Editor utility</td>
<td><em>Utilities / Data Dictionary Editor</em></td>
</tr>
<tr>
<td></td>
<td>QuickPlan utility</td>
<td><em>Utilities / QuickPlan</em></td>
</tr>
<tr>
<td></td>
<td>Import utility</td>
<td><em>Utilities / Import</em></td>
</tr>
</tbody>
</table>
Shortcut Menus

When you open a file, there are a number of functions that you can perform in the folder view window. Right-click in the folder view window (while no object is selected) and the following menu appears:

If you select an object in the folder view window and right-click it, a different menu appears. The commands in this menu vary depending on the type of object selected.

You can right-click on a feature in the Map or Time Line window to display the shortcut menu, as shown opposite with the fire hydrant selected.

For line and area features, an additional command, *Delete Position*, appears.
Measurement Units

Many fields in the GPS Pathfinder Office software’s dialogs and windows contain numeric values; you can specify the units for displaying or entering these values.

Select *Options / Units*. The following dialog appears:

![Units Dialog](image)

Use this dialog to choose units for distance, area and velocity, as well as the formats for display of offsets and bearings. The default values and options are shown above.

To set units for coordinates and heights, and the reference for altitudes, select *Options / Coordinate System.*
Tip – Let the GPS Pathfinder Office software convert your data into the configured units. Simply enter the value followed by the abbreviation for the units it is in. For example, if meters is the configured unit, and you enter 10 ft, it is converted to 3.048 m. This applies only to fields that contain distances, offsets, heights, or coordinates.

Values that you enter into a field are often in a particular unit, for example meters. The field displays an abbreviation for the unit after the value, so that you know the current units.

Note – A ‘?’ in a text entry box represents nothing. It is the default null string, and it appears when a value was not entered in the field. To specify a different null string, select Options / Style of Display.

Available units

Table 2.1 lists the available units and their abbreviations.

Table 2.1  Unit abbreviations

<table>
<thead>
<tr>
<th>Unit</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meters</td>
<td>m</td>
</tr>
<tr>
<td>Feet</td>
<td>ft</td>
</tr>
<tr>
<td>Inches</td>
<td>in</td>
</tr>
<tr>
<td>Kilometers</td>
<td>km</td>
</tr>
<tr>
<td>Millimeters</td>
<td>mm</td>
</tr>
<tr>
<td>Miles</td>
<td>mi</td>
</tr>
<tr>
<td>Namibian meters</td>
<td>nam</td>
</tr>
<tr>
<td>Yards</td>
<td>yd</td>
</tr>
<tr>
<td>Nautical Miles</td>
<td>nm</td>
</tr>
<tr>
<td>US Survey Feet</td>
<td>USft</td>
</tr>
</tbody>
</table>
Exiting the GPS Pathfinder Office Software

To exit the GPS Pathfinder Office software:

1. Select *File / Exit*. If a data file is still open and there are unsaved changes, a message appears:

   ![Message Box]

   **Do you want to save Tutorial Updated.ssf?**

   - Yes
   - No
   - Cancel

2. Click **Yes** to save and close the data file and quit GPS Pathfinder Office.

   The GPS Pathfinder Office application window closes.
Tutorial

In this chapter:

- Scenario
- Exercise 1: Configuring the GPS Pathfinder Office Software
- Exercise 2: Preparing to Collect Data
- Exercise 3: Differentially Correcting the Field Data
- Exercise 4: Viewing and Editing the Data
- Exercise 5: Exporting Data to a GIS or CAD System
- Exercise 6: Updating the Data
- Exercise 7: Back in the Office
- Exercise 8: Special Exercise
This chapter explains how to collect and maintain data for a GIS, and process the collected data using the GPS Pathfinder Office software. It contains step-by-step instructions for the main tasks involved.

The tutorial exercises are designed to be completed in sequence, with each exercise using the results from the previous exercise. The exception is Exercise 8: Special Exercise, which has no effect on the other exercises and can be done independently. The exercises assume that the GPS Pathfinder Office software’s default settings are unchanged. If they have been changed, the software may behave differently.

The exercises use sample files supplied with the GPS Pathfinder Office software. By default, these sample files are located in the \Pfdata\Tutorial folder. If they have been deleted, reload them from the GPS Pathfinder Office Software CD using a Custom installation, and select the Tutorial Files check box. For more information on installation, refer to the GPS Pathfinder Office Software Release Notes.

Note – This tutorial assumes that you are familiar with GPS and using the Microsoft Windows operating system.

 Scenario

The local City Government maintains a GIS of its public assets. This includes street signs, utility poles, parks and their amenities, parking lots, and other types of assets. Information is stored about each asset, including its condition and other information specific to each type of asset.

Your task is to prepare the data dictionary so that the field crews can collect the required information, process the data using the GPS Pathfinder Office software, and then export it to your GIS.

A few months later, the data needs to be updated, so you must then import the data from your GIS into the GPS Pathfinder Office software, update the data dictionary, and send the field crews out with the data so that they can update information on the assets.
Exercise 1: Configuring the GPS Pathfinder Office Software

There are three options in the GPS Pathfinder Office software that are important to configure before you use it.

This exercise shows you how to:

• start the GPS Pathfinder Office software
• set the local time zone
• select a project
• select a coordinate system

Starting the GPS Pathfinder Office software

To start the GPS Pathfinder Office software, do one of the following:

• Click on the Windows taskbar, then select Programs / GPS Pathfinder Office.

• Double-click the GPS Pathfinder Office shortcut icon on the desktop:

The GPS Pathfinder Office logo appears while the program is loading, followed by the GPS Pathfinder Office application window.

Setting the local time zone

You must configure the GPS Pathfinder Office software for the local time zone. If you do not, the time records in field data files display as GPS time, which approximates Greenwich Mean Time. Normally, you set the local time zone once (and whenever summer time changes are necessary).
To set the local time zone:

1. The first time you start the GPS Pathfinder Office software, a message may appear, asking you to set the time zone.

2. Click Yes.

3. The Time Zone Settings dialog automatically appears. If it does not, select Options / Time Zone. The following dialog appears:

4. From the Time Zone field, select the time zone for your current location.

   **Tip** – If the local time zone is not available, click New Time Zone. The Add Time Zone dialog appears. Enter the name of the time zone and the offset from Greenwich Mean Time. For example, if the time zone is 9 hours and 45 minutes behind Greenwich, enter -9:45 as the offset. Click OK.

5. Click OK to save the time zone settings and close the dialog.

   **Tip** – To display GPS times at any stage, select Greenwich Mean Time (+0:00) instead of the local time zone.
Selecting a project

A project is a set of folders on the computer that store the data files for a particular job. They let you separate the data into different areas on the computer so that you can keep track of different jobs separately.

You must decide how you want to use projects to separate the data. You may want to have a different project for each different site you are working on, or you may have a project for each of your clients.

Note – If you include invalid characters, such as ?, +, >, or “ “, when naming a new project, you will receive an error message.

A project defines where certain types of files are stored on the computer. Each project can point to a different set of folders. The types of files that are distinguished by projects are:

- data files, including files created by importing from a GIS
- base files
- exported GIS or CAD format files
- backup copies of field data files

Each of these file types can be assigned a different default folder. By default, this folder is selected whenever you open or save one of the above types of files. In most cases you are not limited to just this folder, but it serves as a useful default.

The types of data that are not distinguished by projects are:

- data dictionaries
- waypoint files
- background files
- configuration files

These four types of files can be stored in projects if you want. However, if you change projects the default folder will not change. Usually these types of files are stored separately from project data so that they can be accessed easily by all projects.
To select a project:

1. When you start the GPS Pathfinder Office software, the *Select Project* dialog appears automatically:

   ![Select Project dialog](image)

   If this dialog does not appear, select *File / Projects* to display it.

   **Tip** – To stop the *Select Project* dialog appearing each time you start the GPS Pathfinder Office software, clear the *Display this dialog at start-up* check box.

2. From the *Project Name* field, select Tutorial.
3. Look at the folders that are defined for this project:

<table>
<thead>
<tr>
<th>The folder...</th>
<th>is defined as...</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>project</td>
<td>\Pfdata\Tutorial</td>
<td>This is the main project folder where the data files are stored. Whenever you open, save, or import a data file, this folder will be selected by default.</td>
</tr>
<tr>
<td>backup</td>
<td>\Pfdata\Tutorial\Backup</td>
<td>A folder within the main project folder. This is the folder where backup copies of the field data are kept. Backup copies are made when files are transferred from a field computer to the office computer.</td>
</tr>
<tr>
<td>export</td>
<td>\Pfdata\Tutorial\Export</td>
<td>A folder within the main project folder of Pfdata\Tutorial. This is the folder where any exported GIS or CAD format files will be created by default.</td>
</tr>
<tr>
<td>base file</td>
<td>\Pfdata\Tutorial\Base</td>
<td>A folder within the main project folder of Pfdata\Tutorial. When selecting base files for differential correction, by default, the software looks in this folder. If you have one central folder for all base files, you can define this folder explicitly when creating your own projects. For example, if all of the base data resides on a network folder, n:\Basedata, enter this folder in the Base files field. The same rule holds for the other folders of a project.</td>
</tr>
</tbody>
</table>

4. Click **OK** to accept the tutorial project.

**Tip** – For an introduction to projects, and for more information on the Select Project dialog, see the topic Projects in the GPS Pathfinder Office Help.
Selecting a coordinate system

You need to use a coordinate system that is suitable for the area in which you are collecting data. For example, in order to display collected GPS positions in relation to a background map, the GPS Pathfinder Office software must be able to relate GPS latitude and longitude coordinates to north and east coordinates on the map. It is also critical that you have the correct coordinate system selected when you:

- enter waypoint coordinates
- print or plot the map
- export coordinates to a GIS or CAD package
- import features from a GIS or CAD package
- enter manual positions

In the GPS Pathfinder Office software you can choose the correct coordinate system by selecting a coordinate system and an associated zone, or by selecting a local site. To properly specify a system, you need to select a zone and/or datum. Your choice affects the display of the field data, but not the data itself.

Tip – For an introduction to the concepts of coordinate systems and zones (and the associated concepts of a datum, an ellipsoid, and a geoid), refer to the Mapping Systems General Reference.

Tip – The currently selected coordinate system is displayed in the status bar.
For this project, you need to select a UTM coordinate system:

1. Select *Options / Coordinate System*. The following dialog appears:

   ![Coordinate System dialog](image)

2. Make sure that the *Select By* group is set to the *Coordinate System and Zone* option.

3. Set the *System* field to UTM.

4. Set the *Zone* field to 10 North.

5. Set the *Datum* field to NAD 1983 (Conus).

6. Make sure that the *Altitude Measured From* group is set to the *Mean Sea Level (MSL)* option.

7. Make sure that the *Geoid Model* group is set to the *Defined Geoid (EGM96 (Global))* option.

8. Set the *Coordinate Units* field to Meters.

9. Set the *Altitude Units* field to Meters and click **OK**.
Exercise 2: Preparing to Collect Data

This exercise introduces you to the concepts of:

- GPS data collection
- Features
- Attributes

It shows you how to:

- open a data dictionary
- print a data dictionary
- transfer a data dictionary to a field computer running data collection software

GPS data collection

Organizations such as utility companies, scientific organizations, and local governments have billions of dollars of fixed assets and equipment located throughout their region. They must be able to accurately locate, monitor, and maintain these assets.

The large task of managing these assets is greatly reduced with the use of proper field information management tools such as GPS data collection systems and GIS databases.

Information on assets can be collected in the field using a field computer running data collection software. Data collection software stores information in the form of “features” and “attributes”.
Features

A feature is a physical object or an event in the real world for which you want to collect position and descriptive information. For example, you may want to collect information about lakes or roads.

Each feature has a feature name. Feature names are equivalent to themes or layers in a GIS or CAD system. Each occurrence of a feature is equivalent to a record in that theme or layer in a GIS system.

GPS data collection software uses feature classification to determine the way the data collection software logs GPS positions.

A feature can be one of three different types. See Table 3.1.

**Table 3.1  Features**

<table>
<thead>
<tr>
<th>Feature type</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point</td>
<td>Accident sites</td>
</tr>
<tr>
<td></td>
<td>Water faucets in a park</td>
</tr>
<tr>
<td>Line</td>
<td>Paths</td>
</tr>
<tr>
<td></td>
<td>Pipelines</td>
</tr>
<tr>
<td>Area</td>
<td>Lakes</td>
</tr>
<tr>
<td></td>
<td>Wetlands</td>
</tr>
</tbody>
</table>

Attributes

You can define a set of attributes for each feature type. An attribute is a piece of descriptive information about the feature. For example, for the feature, Path, you could have the attribute, Width. Each Path feature that you collect in the field will have its own value for this attribute.

For each attribute you must define an attribute name. Attribute names are equivalent to items, columns, or fields in a GIS or CAD system.
An attribute can be one of six different types. See Table 3.2.

<table>
<thead>
<tr>
<th>Attribute type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu</td>
<td>The surface type for a path</td>
</tr>
<tr>
<td>Numeric</td>
<td>The width of a path</td>
</tr>
<tr>
<td>Text</td>
<td>The name of the path</td>
</tr>
<tr>
<td>Date</td>
<td>The date when information about the Path feature was collected</td>
</tr>
<tr>
<td>Time</td>
<td>The time when information about the Path feature was collected</td>
</tr>
<tr>
<td>File Name</td>
<td>Linking the Path feature to an image of the feature on a computer</td>
</tr>
</tbody>
</table>

**Opening a data dictionary**

A data dictionary is a description of the features and attributes relevant to a particular project or job. A data dictionary structures data collection; it does not contain the actual information collected in the field (positions and actual attribute values for each occurrence of a feature).

A data dictionary is used in the field to control the collection of features and attributes. For example, you may want to collect information about power poles, lakes, and roads. Therefore you can create a data dictionary that contains a list of all these features.

It is important to understand data dictionaries and how they are used in the field to control feature and attribute collection. A data dictionary prompts you to enter information; it can also limit what you enter to ensure data integrity and compatibility with your GIS or CAD system. Although data dictionaries are not always required for field work, they do make collecting, updating, and processing data easier and faster.
A data dictionary consists of the following elements:

- A list of features to be collected in the field
- A list of attributes (if any) that describe each feature

A data dictionary should contain all the features for which you want to collect information. You can have different data dictionaries for different projects, for example, a road map data dictionary and a utility data dictionary. You can only use one data dictionary at a time in the field. If you want to collect information about roads at the same time as information about utilities, it is important to put all the features into one data dictionary.

To open a data dictionary:


The Data Dictionary Editor utility starts:
2. Open the Tutorial.ddf file in the Pfdata\Tutorial folder. To do this, do one of the following:
   - Click  
   - Select File / Open.
3. Go to the folder C:\Pfdata\Tutorial and select the file Tutorial.ddf, and then click Open.
4. The data dictionary editor opens and you will see a number of features and their attributes:
5. Look at the Features column:

<table>
<thead>
<tr>
<th>This symbol ...</th>
<th>indicates that the feature is a ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>point</td>
</tr>
<tr>
<td>~</td>
<td>line</td>
</tr>
<tr>
<td>ς</td>
<td>area</td>
</tr>
</tbody>
</table>


7. The Attributes column shows you three defined attributes:

   - Color
   - Number of Spouts
   - Last Inspection Date

8. Click on each of these attributes in turn.

Notice that the right panel shows information about the currently selected attribute.

In this example, the number to be entered in the field must be a whole number. There can be a minimum of one spout and a maximum of 10 spouts. The default number of spouts is 2.
9. In the *Features* list, select the *Path* feature.

There are two attributes this time:
- Surface Type
- Width

10. Click on each of the attributes.

11. In the *Features* list, select the *Parking lot* feature.

There is just one attribute:
- Surface type

It has the values:
- Asphalt
- Concrete
- Turf

Notice the * shown beside the value Asphalt. This means that Asphalt is the default value. Setting a default saves field crews from entering repetitive data and also makes collecting data simpler and faster.

You do not need to make any changes to the data dictionary at this stage. In the next section you will print the data dictionary.
Printing the data dictionary

To view the entire data dictionary description in text form, you can print it. You may want to keep a printout of each of your data dictionaries in case they are accidentally deleted.

Tip – To check the printer setup and font before printing, select File / Print Setup or File / Set Printer Font.

To preview the data dictionary printout before you actually print it:

1. Select File / Print Preview. The following window appears:

2. Click Print, check your printer settings and click OK to send the data dictionary to the printer.

3. Select File / Exit to close the Data Dictionary Editor.
You are now ready to transfer the data dictionary to the data field computers so that your three field crews can go out and collect some data.

**Transferring data to a field computer**

You need to transfer the data dictionary to the field computer so that your three field crews can use the dictionary in the field to collect data.

To do this, you would use the Data Transfer utility. The opening dialog of the Data Transfer utility is shown below:

![Data Transfer Utility](image)

For the purpose of this tutorial, we have done this for you.
Exercise 3: Differentially Correcting the Field Data

The data has been collected in the field by the three field crews. It has been transferred back to the office computer and now you need to process it.

This exercise introduces you to the concepts of:

- postprocessed differential correction
- base data

It shows you how to:

- differentially correct SSF files

Postprocessed differential correction

Postprocessed differential correction can significantly improve the accuracy of GPS positions collected in the field. The Differential Correction wizard compares the collected GPS data with base data collected at a known location at the same time that the field data was collected. The process produces a .cor file that contains a new set of GPS positions that are corrected.

Base data

Many regions have reference stations that can supply the base data required for differential correction. The GPS Pathfinder Office software provides a list of some stations that you can use to obtain base data. You can access this list in the Select Base Provider dialog.

The base data for the tutorial is on the Trimble FTP site and is available by selecting the GPS Pathfinder Office tutorial base files provider from the list in the Select Base Provider dialog.
To differentially correct the field data:

1. In the GPS Pathfinder Office software, click the *Differential Correction* tool, or select *Utilities / Differential Correction*.

   The first page of the *Differential Correction* wizard appears:

   ![Differential Correction Wizard](image)

   The *Select SSF files to correct* list is either empty, or it displays the SSF files that were selected for differential correction the last time you used the Differential Correction wizard.

2. Remove any SSF files that are listed by selecting them and clicking the *Delete* button.
3. To select the SSF files that you want to correct:
   a. Click the Add button [+].

   The Select SSF File(s) dialog appears:

![Select SSF File(s) dialog]

By default, the uncorrected files (.ssf) are shown. The Pfdata\Tutorial folder is selected, as this is the default folder for data files that was defined when we selected the project (see Selecting a project, page 35). There are three data (rover) files available that have the filename of ‘TUTDATAx.ssf’. These data files were collected at the same time by three different field crews. You need to correct all three files.

   a. Click TUTDATA1.ssf, hold down [CTRL], and click TUTDATA2.ssf, then TUTDATA3.ssf to select all three files.

   b. Click Open. This confirms the selection and closes the dialog.

   The selected SSF files appear in the Select SSF Files to correct list in the Differential Correction wizard.
The fields below the selection list display information about the selected SSF file. The *Collected with H-Star receiver* field indicates whether the SSF file contains data collected using a receiver with H-Star technology. The options displayed in the rest of the Differential Correction wizard are dynamic; H-Star processing options are only displayed if the value for this field is Yes.

4. Click **Next**.

The Processing Type page of the wizard appears:

It displays the processing options available for processing the GPS data in the selected SSF files. The selected SSF files do not contain data collected using H-Star technology, and so the GPS data can only be corrected against base data from a single base station.
Tip – To learn more about H-Star processing options, see the “Specifying the processing type” topic in the Differential Correction Help.

5. Make sure the Automatic option is selected. This is the default setting and it is the most thorough type of processing.

6. Click Next.

The Correct Settings page of the wizard appears:

It displays the settings that will be used to differentially correct the selected SSF files. The default settings are displayed above.

If the settings displayed are different to the default settings, click Change. The Correction Settings dialog appears. In each tab, select the appropriate options so that your settings match the default correction settings. Click OK to close the dialog and return to the Differential Correction wizard.

7. Click Next.
The Select Base Data page of the wizard appears.

If you have access to the Internet, download base data files from the tutorial base provider:

a. In the *Base Data* group, select *Base Provider Search*:

b. Click the **Select** button next to the Base Provider Search text box.
The *Select Base Provider* dialog appears:

![Select Base Provider dialog](image)

The dialog displays a list of available base providers. The list is arranged by distance from the location where the field data was collected, so that base stations closest to the location where the data was collected are at the top of the list.

For this tutorial, we have set up an FTP site for the tutorial base data and named it “GPS Pathfinder Office tutorial base files”.

c. Click the “GPS Pathfinder Office tutorial base files” provider (near the top of the base provider list) to select it, and then click **OK**.
If you do not have access to the Internet, select the folder where base data files for the tutorial are stored:

a. In the Base Data group, select Folder Search.
b. Click the Select button next to the Folder Search text box.

The Folder Search dialog appears:

c. Click Browse to navigate to the base folder that is defined for the Tutorial project. The default location is C:\Pfdata\Tutorial\Base.
d. Click OK.
The dialog closes and you are returned to the Base Data page of the wizard. The base provider, or the path of the folder you selected, is displayed in the text box below the Base Data option you selected.

8. In the Reference Position group, select *Use reference position from base files*.

9. Click **Next**.
10. The Output page of the wizard appears:

11. Make sure the *Use project folder* option is selected. The output files will be stored in the C:\Pfdata\Tutorial folder, because that is the project folder you have specified. The output files will have a .cor extension.

12. Make sure the *Create a unique filename* option is selected. That means that if you recorrect the SSF files, each subsequent corrected file will have _n appended to the filename, where \( n \) denotes the next number in the sequence.

13. Click **Start**. The differential correction process starts.
As the GPS Pathfinder Office software begins differentially correcting the selected SSF files, the Correct Processing page of the wizard appears:

It displays details about the status of the differential correction process. The SSF files are processed sequentially. The Correct Processing page displays the number of corrected positions for each SSF file.

When the last SSF file has been processed, the message **Differential correction complete** and a summary of the estimated accuracy values gained for the corrected GPS positions appears at the bottom of the Correct Processing page.

This summary provides immediate feedback as to the quality of the corrected GPS positions. For example, if too few base providers have been selected for multi-base processing, the results will indicate this by showing large estimated accuracy values.
14. Click **Close**.

The contents of the Correct Processing page are saved as the Differential Correction report. The report is stored in the Log Files folder in the same folder as the open geodatabase.
Exercise 4: Viewing and Editing the Data

You now need to visually check the data before you export it to a GIS or spatial database. This is to confirm that all the expected data is there, and to look for any unwanted positions.

This exercise shows you how to:

- open the data files
- select a coordinate system
- display the Map window
- display the Time Line window
- load the background files
- configure the Map window
- view the attributes of a feature
- view the offset of a feature
31.1 Opening the data files

You must open the data files in the GPS Pathfinder Office software to view them. You can open as many files as you like together, but you can only edit files if they are opened individually.

To open data files:

1. Select File / Open. The following dialog appears:

   ![Open File Dialogue](image)

   The three files that were just created by the Differential Correction utility are selected by default.

2. Click Open to confirm the selection.
Displaying the Map and Time Line windows

There are two methods available to display the data. The first is the Map window, where the file appears along with any background files. The second is the Time Line window, which presents a visual display of when the data was collected along a linear time axis.

To display the Map and Time Line windows:

1. Select View / Map. The Map window appears:

2. Select View / Time Line. The Time Line window appears:

Tip – If the Map window is not open and no files are loaded, select View / Map to automatically open the Open Data Files dialog. This is a handy shortcut for opening the data files. The same rule applies for the Time Line window.
Loading the background files

You can specify one or more background files, such as street maps and aerial photographs, for display in the Map window. These files provide a background for the field data files.

There are two types of background files:

- Vector files (or drawings)
- Raster files (or images)

Vector files

A vector file loads and transforms into any coordinate system

The vector file Streets.dxf has its coordinates stored as Latitude/Longitude (WGS-84), but the coordinate system for the project is currently set to UTM.

We will need to specify that this file is set to the Latitude/Longitude coordinate system so that the GPS Pathfinder Office software can automatically transform the file from that coordinate system into UTM.

Raster files

Raster files must be displayed in the coordinate system to which they are ‘geo-referenced’. Geo-referencing involves matching the pixels in a raster file to real-world coordinates. All raster files must be geo-referenced before they can be loaded into the GPS Pathfinder Office software.

The raster file Aerial.bmp is geo-referenced in the UTM coordinate system, and UTM is the coordinate system for the project.

You can load this file without setting the coordinate system.

You will load the two background files one at a time so that you can see what each background file looks like individually.
To load the background file STREETS.dxf:

1. Select File / Background. The Load Background Files dialog appears.

2. Click Add. The following dialog appears:

3. Select the file STREETS.dxf and click Open to return to the Load Background Files dialog.

   The following message appears, reminding you to set the correct coordinate system for the new background files (you will do this in Step 5):
4. Click **OK** to clear the message. The following dialog appears:

The check mark to the left of the filename indicates that the file loads when you close the dialog.
5. You need to specify that this file is set to the Latitude/Longitude coordinate system, so click **Change**. The *Coordinate System* dialog appears:
a. Change the *System* field to Latitude/Longitude. (The *Datum* field automatically changes to WGS 1984.)

b. Click **OK** to accept the selected coordinate system and zone, and return to the *Load Background Files* dialog:

6. Click **OK** to load the background file and close the dialog.
The *Map* window displays the background STREETS.dxf file:

![Map window displaying STREETS.dxf file](image)

7. Start to load the second background file, AERIAL.bmp, following Step 1 through Step 4 above.

We do not need to change the coordinate system for this file as it is geo-referenced in the UTM coordinate system, which is the coordinate system for this project:
8. Click **OK** to accept the selected coordinate system and to close this dialog.

A progress bar appears while the files are loading. When it is finished, the *Map* window should look like this:
Configuring the Map window

You can configure the Map window to only show certain information. For example, you can change the symbols or line colors used to display features to make it easier to differentiate between features. You can also hide features in the data file or layers in the background files to make it easier to view the data.

Feature style settings are shared by the TerraSync™ software, v2.10 or later, so you can have a common feature style in the office and in the field. Any changes in one place affects the other when you transfer the files.

To change the style of point features:

1. Select View / Layers / Features. The following dialog appears:

2. We will not change the symbol assigned to the Fire Hydrant feature, however, we will change its color and size. To change the symbol details, select the Fire Hydrant feature (click on the word Fire Hydrant) and then click Symbol.

Tip – You can also change the symbol of a selected feature, by double-clicking on the name of the feature. Alternatively, in the Map window, right-click on a feature and select the `<feature name>` Layer Symbol command.
The dialog opposite appears:

3. In the Font list, make sure that Trimble GPS Pathfinder is selected.

4. Leave the Style field as is. This field shows the assigned 'style number' of a feature.

**Tip** – If you know the style number of a symbol, you can enter it directly in the Style field. For a table of assigned Trimble GPS Pathfinder symbol style numbers, refer to the GPS Pathfinder Office Help.

5. In the Size field, change the size of the symbol from the default of 15 to 20.

**Tip** – To view all the symbols for a font, click Change. The Select Style dialog appears. Select a different font, and then choose a symbol. Click OK.

6. In the Foreground list, select the color yellow. The changed symbol appears in the symbol preview area of the Fire Hydrant dialog:
7. Click **OK** to return to the *Features Layers* dialog.

8. Make sure that the *Show* check box next to the Fire Hydrant feature is selected so you can view the symbol in the *Map* window, and then click **OK**.

9. Click **OK** to close the *Feature Layers* dialog. The *Map* window is updated to display the data file using the new symbols and colors.

To change the style of line and area features:

1. Select *View / Layers / Features*. The *Features Layers* dialog appears.

2. Select *Path* from the list of features and click **Line Style** to display all the possible colors that can be assigned to the *Path* line feature. The dialog opposite appears:

3. From the *Color* field, select an appropriate color.

4. From the *Thickness* field, select an appropriate line thickness.

5. Repeat Step 2 through Step 4 for the following features:
   - Park Road
   - Park
   - Park Amenities
   - Parking lot

6. Click **OK** to close the *Feature Layers* dialog. The *Map* window is updated to display the data file using the new symbols and colors.
To remove the minor roads from the street background file:

1. If necessary, click the Map window or select Window / Map to make the Map window the active window.

2. To make sure that you can see the changes you are about to make use the zoom buttons on the Mouse toolbar to show as much of the park as you can in the Map window.

3. Select View / Layers / Background. The following dialog appears:

   ![Background Layers dialog]

   Each layer in the STREETS.dxf file has a separate layer in this list. The aerial photograph is a single layer in this list. The minor roads are layers ROADS4, ROADS6, ROADS8, and ROADS9.

4. Select all of the above Road layers by clicking on ROADS4, holding down [Shift], and clicking ROADS9.

   All the Road layers from ROADS4 to ROADS9 should be selected.

5. Click the box in the Show column to hide these layers. The check marks beside these layers disappear.
6. In the View group, select the As Above option. Selecting this option displays only the layers with a check mark.

7. Click **OK** to close the dialog. The Map window redraws without the minor roads.

**Viewing the attributes of a feature**

You can view and edit the attributes of any feature or note in the GPS Pathfinder Office software. You can also view and delete the positions that make up a feature.

*Note – When multiple data files are open, you can view, but not edit or delete, features and positions.*

To view the attributes of a feature:

1. Click the **Select** tool or select **Edit / Select**.

2. In the Map window, double-click a feature. The feature is highlighted and the Feature Properties window appears:

The feature shown here may differ from the one you have selected.

The current feature type is shown at the top of the Feature Properties window. In the above example, it is a Point feature called Bench.

To select another feature, click on it in the Map window, or use the First, <, >, and Last buttons to move to the first, previous, next, and last features respectively.

*Note – The Feature Properties window also shows the contents of notes. Make sure that a feature, not a note, is selected before continuing on to the next step.*
3. Below each feature name is a list of attribute names and values for that feature. Click the Attributes tab. The value of the selected attribute is shown in the bottom of the window:

4. Move to the next attribute by clicking on it in the Attribute Name list.

Because more than one file is open, you cannot edit attributes. If you were to open a single file, you could edit the attributes for any feature in the file.
Viewing the offset of a feature

Offsets are an excellent tool for collecting features from a distance when they cannot be collected directly. For example, a feature underneath a bridge could be collected using an offset because the bridge will obstruct the GPS signal. Using the GPS Pathfinder Office software, you can view, add, or change an offset to any feature in an SSF file.

To view the offset for a feature:

1. Select the Bus Stop feature. This is the point feature to the far left of the park boundary. (If the Feature Properties window is not open, double-click the feature to select it and open the Feature Properties window.)

2. Click Offset on the Summary tab. The following dialog appears:

   ![Offset dialog](image)

   This dialog shows how far and in what direction the feature is from the spot where the GPS receiver was placed when it was actually collected.

   In this example, the location of the bus stop is 22 meters in a westerly direction from the spot where it was collected.

3. You cannot edit the offset because multiple files are open. Click Cancel to close the dialog.

   Note – For line and area features, a direction rather than a bearing, is defined. The direction indicates whether the feature is to the left or to the right, looking along the direction of collection.
**Printing the data**

Creating a hardcopy plot of the data is often required for record-keeping, or as a part of a job submission. The GPS Pathfinder Office software lets you plot the contents of the *Map* window directly to any printer or plotter that is supported by Microsoft Windows.

*Note – Even if you do not have a printer or plotter you can complete this section of the tutorial.*

To plot the contents of the *Map* window:

1. Select the *Map* window to make it active.
2. Select *View / Zoom / Extents* to zoom the *Map* window to include all information. The *Map* window will show all of the data files and background files.
3. Select *File / Plot Map*. The *Plot Map* dialog appears:

![Plot Map dialog](image)

- **Plot Title:**
- **Scale:** 1:25,000
- **Bottom Left Coordinates:**
  - North: 4139121.451 m
  - East: 586552.404 m
- **Top Right Coordinates:**
  - North: 4143446.451 m
  - East: 590027.404 m
- **Grid:**
  - Plot Border Ticks
  - Plot Grid Cuts (Interval: 1000.000 m)
  - Plot Lat/Long Border Ticks
  - Plot Lat/Long Grid (Interval: 0°00’30.00’’)
- **Plot Size:** 113 mm x 153 mm
- **Maximum Possible Plot Size:** 139 mm x 173 mm
4. If you have more than one printer or plotter set up on the machine, click **Setup** to select the one you want to plot to. Select the printer or plotter and click **OK**.

5. Enter a title for the plot in the **Title** field. For example, type **Tutorial Files**.

   By default, a sensible scale is selected that fits the contents of the **Map** window onto a single sheet of paper.

6. Click **Preview** to see a preview of the plot before it is actually plotted. The preview will look something like this:

![Preview Image](image_url)

7. Click **Close** to close the preview window.

8. Click **OK** to plot the map to the selected printer or plotter. Skip this step if you do not have a printer or plotter configured.
Exercise 5: Exporting Data to a GIS or CAD System

The result of many GPS data collection sessions is to incorporate the data into a database, such as a spreadsheet or a GIS. Depending on the database that you use, you must export your collected and edited data files in a format that your end-product software can use.

The GPS Pathfinder Office software supports a variety of major GIS, CAD, and spatial database formats. It also lets you define your own ASCII formats.

For the purposes of this tutorial, you will export the data files into ESRI Shapefile format.

This exercise shows you how to:

- export data files to a GIS format
To export data files to a GIS format:

1. Click the Export tool  or select Utilities / Export.

The Export utility appears:

When the Export utility starts, the most recently used data files are selected by default as input files.

2. Look at the Output Folder field. This defaults to the export folder specified in the current project, \Pfdata\Tutorial\Export. This folder is where all export files will be created.

3. The list in the Choose an Export Setup group shows the export setups that are available. An export setup consists of a format plus several parameters that customize that format for a
particular purpose. You can create as many export setups as you like and use them over and over. Select the Sample ESRI Shapefile Setup item.

This export setup creates output files in Shapefile format. The resulting Shapefiles contain 2D coordinates. Tracking themes are not exported.

4. The *Choose an Export Setup* group contains information about the export format, the type of data you are exporting, output options, and the coordinate system used for the exported data. Select Sample ESRI Shapefile Setup from the drop-down list.

5. Make sure the settings are as shown below:

6. Click **OK** to start the export process.
7. If the message **File(s) may be overwritten. Continue?** appears, click **Yes** to continue.

A series of progress bars shows the progress of the export process. When the process is complete, the following message appears:

![Export Completed dialog box]

8. Click **Close** to remove the message without displaying the export log.

9. Using Windows Explorer or another file management utility, look at the contents of the \Pfdata\Tutorial\Export folder.

The following files exist in the folder:

<table>
<thead>
<tr>
<th>This file type ...</th>
<th>has this file extension ...</th>
<th>and contains ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHP File</td>
<td>.shp</td>
<td>exported data in Shapefile format.</td>
</tr>
<tr>
<td>SHX File</td>
<td>.shx</td>
<td>index files.</td>
</tr>
<tr>
<td>DBF File</td>
<td>.dbf</td>
<td>attribute data associated with the Shapefiles.</td>
</tr>
<tr>
<td>Setup Information</td>
<td>.inf</td>
<td>information on the settings used in the export process. You can use a text editor to open this file. This file is named after the first data input file in the Export dialog.</td>
</tr>
</tbody>
</table>
Exercise 6: Updating the Data

It is important to keep your GIS up-to-date so that accurate records can be maintained and that the information in the GIS can be used efficiently.

Six months after the three field crews went into the field and collected the data, you now need to send one field crew back to some of the sites to update some data and to collect a new feature.

This exercise shows you how to:

- edit the Tutorial data dictionary to add a new feature and attributes
- save the data dictionary
- import data from a GIS so it can be taken back into the field

Editing the tutorial data dictionary

The local City Government that you work for has recently installed some trash cans in a local park. You need to add this feature to your data dictionary so that the field crew can collect data about where each trash can is located.

In this section you will:

- start the Data Dictionary Editor and open a data dictionary
- add the new Trash Can feature and attributes for it
- add a new attribute to the Park Amenities feature
To open a data dictionary:

1. Start the Data Dictionary Editor utility and open the Tutorial.ddf file. (For a reminder on how to do this, see page 43.) The data dictionary opens. You will see a number of features and their attributes:

   ![Data Dictionary Editor](image)

To add the Trash Can feature:

1. Click **New Feature**. Alternatively, press [F3].

   The New Feature dialog appears.

2. In the **Feature Name** field, enter the text **Trash Can**.
3. In the *Feature Classification* group, make sure that the *Point* option is selected:

4. Click **OK** to return to the main Data Dictionary screen. The feature now appears in the Features list.
You can now add attributes to the Trash Can feature:

1. Make sure that the Trash Can feature is selected. Click **New Attribute** or press [F7]. The following dialog appears:

2. Select the **Menu** option and click **Add**. The following dialog appears:

3. In the **Attribute Name** field, enter the text **Condition**.
4. Click **New** to enter values. The *New Attribute Value - Menu Item* dialog appears.

5. In the *Attribute Value* field, enter the text **Good**.

6. We will make this value the default. Setting a default saves field crews from entering repetitive data and also makes collecting data simpler and faster. Select the *Default* check box:

![New Attribute Value - Menu Item dialog](image)

7. Click **Add**. The value is added to the *Menu Attribute Values* group in the *New Menu Attribute* dialog:

![New Menu Attribute dialog](image)
Note that the *New Attribute Value – Menu Item* dialog remains open so you can add more values.

8. In the *Attribute Value* field, enter the text *Repair* then click *Add*.

9. Repeat Step 8 but enter the text *Replace*.

10. Click *Close* to return to the *New Menu Attribute* dialog.

11. Click *OK* to return to the *New Attribute Type* dialog.

You now need to add a Date attribute to the Trash Can feature so that the date the field crew visited the feature can be logged:

1. In the *New Attribute Type* dialog, select the *Date* option and click *Add*.

   The *New Date Attribute* dialog appears.

2. In the *Attribute Name* field, enter the text *Date Visited*.

3. To have the data collection software automatically supply the current date when a new feature with this attribute is *collected*, make sure that the *Auto Generate on Creation* check box is selected.

4. To have the data collection software automatically supply the current date when an existing feature with this attribute is *updated*, select the *Auto Generate on Update* check box.
5. In the *Format* field, select the *Day – Month – Year* option:

![New Date Attribute dialog]

6. Click **OK** to return to the *New Attribute Type* dialog.

7. Click **Close** to return to the main Data Dictionary Editor screen.

Select the Park Amenities feature. Note that it has one attribute called Type. We will now add another attribute called Name so that the field crew can enter the name of the amenity.

To add an attribute:

1. In the Features list, select Park Amenities.

2. Click **New Attribute** or press **F7**.

   The *New Attribute Type* dialog appears.
3. Select the *Text* option and click **Add**. The following dialog appears:

![New Text Attribute dialog box]

4. In the *Attribute Name* field, enter the text: **Name**.

5. In the *Length* field, change the value from the default of 30 characters to 100. This is the maximum length of a text attribute.

6. Click **OK** to return to the *New Attribute Type* dialog.

7. Click **Close** to return to the main Data Dictionary Editor screen.
Saving the data dictionary

For the purposes of this tutorial, save the data dictionary with a different name to tutorial.ddf.

1. From the File menu choose Save As. The following dialog appears:

2. Make sure that the Tutorial folder is selected and in the File name field, enter the following name for your changed data dictionary: Tutorial_updated.ddf.

3. Click Save.

   The name of the new data dictionary appears in the title bar of the main Data Dictionary Editor screen.

4. Select File / Exit to close the Data Dictionary Editor utility.
**Importing data from a GIS**

We now need to import from our GIS the data that we want the field crews to visit and update in the field:

1. Select *File / Close* to close any data files that are currently open.
2. From the *Utilities* menu choose *Import*. Alternatively, click ![Import](image)

   The Import utility starts:

   ![Import utility](image)

   3. In the *Choose an Import Setup* group, make sure that the Sample ESRI Shapefile Setup item is selected.
4. Click **Properties**. The following dialog appears:

We want to import some data from the GIS and match it with the data dictionary, which we just changed.

a. In the *Type of Data to Import* group, select the *Features with External Data Dictionary* option. The *Select Data Dictionary* group becomes available.

b. Click **Dictionary File**. The *Select Data Dictionary File* dialog appears.

c. Select the Tutorial_updated.ddf file, which is in the Tutorial folder, and click **Open**.

5. Select the *Coordinate System* tab.
If the Current Coordinate System area does not have the current coordinate system selected (UTM) click **Change** and change the coordinate system. (If necessary, see page 39 for the coordinate system settings that you need to use).

6. Select the **Output** tab:

![Image of Output tab with options](image)

a. In the **Output** group, make sure that the *Combine input files into one output file* option is selected. This is because we only want to create **one** data file for taking back into the field for updating.

b. Click **OK** to return to the main Import utility screen.

7. In the **Input Files** group, click **Browse**.

The **Select GIS Data Files** dialog appears.
8. Select the nine Shapefiles that were exported in Exercise 5: Exporting Data to a GIS or CAD System (these files are in the C:\Pfdata\Tutorial\Export folder) and click Open to return to the Import Utility dialog:

![Select GIS Data Files dialog](image)

9. In the Output File area:
   
   a. Make sure that the file will be stored in the C:\Pfdata\Tutorial folder. By default, the name of the file is automatically generated. You can change the name of the file, which you will now do.

   *Note* – The file itself is the same as an .ssf file except that it has a different file extension. The file extension is changed to make sure that files are not overwritten when they are transferred from the field computer back to the office.

   The file is named, by default, using the 24-hour clock format, YMMDDHHHa, where a is the number of the file that has been created in the hour. For example, the file 0030722a.imp was created on 7 March 2000 at 22:00 hours. It is the first file created that hour.

   b. Click Browse. The Specify Output File dialog appears.
c. Rename the file to `Tutorial_updated.imp`. Make sure this file is selected in the File name field and click Save. You are returned to the Import Utility dialog:

![Import Utility dialog](image)

10. Click **OK**. The files are imported.
The following message appears:

![Import Completed window]

11. Click **Close**.

The .imp file can now be transferred to the field computer so that the GIS data can be checked in the field.

**Tip** – To see a detailed log of the import process, click **More Details**.
Exercise 7: Back in the Office

The field crew have collected data on the new trash cans. They have also updated some data. You have transferred the updated file from the field computer back to the office computer (the file has been stored in the main tutorial project area). Note that this file is automatically renamed with an .ssf extension to eliminate the overwriting of files. It also makes it easy to identify which files were imported from your GIS and which were updated in the field.

Because the updated data has been collected in real-time, there is no need to differentially correct it as we did in Exercise 3: Differentially Correcting the Field Data.

Once you have opened the updated data file, you need to check the data for GPS spikes or other irregularities and edit as appropriate. Do this before you export the data to a suitable format for your GIS.

This exercise shows you how to:

- open the updated data file
- find a feature that needs repairing or replacing
- view the positions of a feature
- view new and updated features that were collected by the field crew
- view the status of a feature
- measure the distance between two features

Opening the updated data file

To open the updated data file:

1. Open the file Tutorial_Updated.ssf. (From the main GPS Pathfinder Office software select File / Open.)

2. Make sure that the Map window is open.

If necessary, refer to Displaying the Map and Time Line windows, page 63.
**Finding a feature**

You can search for a particular type of feature or for a feature with a particular attribute value. In this case, we will search for all features with the Condition attribute set to the value of Repair or Replace.

To find a feature that needs repairing or replacing:

1. Turn on the *Auto-pan to Selection* tool or select *View / Auto-pan to Selection*.
   
   Finding a feature with the *Auto-pan to Selection* tool ensures that the *Map* window always displays the feature when it is found even if it is not already in the *Map* window.

2. Select *Edit / Find Feature*. The *Find Feature* dialog appears.

3. In the *Feature* field, select the first feature listed: Sign.

4. In the *Attribute* field, select the Condition item.

5. In the *Test* field, select the Not equals item.

6. In the *Value* field, select the Good item.

7. In the *Search* group, make sure the *From Start* option is selected:
   
   The software searches for all Sign features that need repairing or replacing. The search starts from the beginning of the data file. This is the default when you first search for a feature. Once the first occurrence of a feature is found, the *For Next* option is selected.

   **Tip** – To search for a particular feature that needs repairing, set the *Test* field to Equals and the *Value* field to Repair.
8. Click Find. The GPS Pathfinder Office software searches for the first feature in the file that is a Sign feature with a value that does not equal Good.

When the feature is found in the Map window it becomes the selected feature:

Tip – You may find it easier to view the found features if you turn the aerial background map off.

9. Repeat the above steps to search for other features that need repairing or replacing.

**Viewing the positions of a feature**

To view the positions of a feature:

1. Select the Park Road line feature. This is inside the park area feature and starts to the right of the parking lot which is in the top left corner of the park. It runs along the right side of the parking lot, parallel with the boundary, and along the bottom of the park, ending in the bottom right corner of the park.

Tip – If you cannot find this feature, use the Find Feature tool.

2. Click the Position Properties tool or select Data / Position Properties to display the Position Properties window:

   This window displays the individual positions of the currently selected feature. It can also be used for Not in Feature positions and
general map locations. Currently displayed is the first position in the Park Road feature. A small crosshair shows its position in the Map window.

3. Click >. The crosshair moves to the next position in the Park Road feature and the Position Properties window changes to show these coordinates.

**Tip –** To see where the positions were logged more clearly, zoom in on the Park Road in the Map window.

4. Click >>. The crosshair jumps to the last position in the Park Road feature (position 102 of 102).

5. Click Last. The crosshair jumps to the very last position in the open file, which is in a Trash Can feature.

**Using layers to view a feature**

Layers let you determine which features are displayed in the Map and Time Line windows, and how they are displayed.

All information is grouped into layers, which can be turned off or on. For example, all notes form a layer, as does each feature defined by the data dictionary. By turning layers off or on, you can view only those items that you are interested in. The default setting is to view all layers.

Layers help you control the display of feature layers. You can:

- show or hide any particular feature layer
- select several features and show or hide them all
- select several point features and change them all to the same symbol
- select several line and area features and change them all to the same line style
To view the Bench and Trash Can point features:

1. From the View menu choose Layers / Features. The dialog opposite appears:

2. Clear the check box in the Show column next to each point feature, except for the Bench and Trash Can features and click **OK**.

3. The Bench and Trash Can features appear in the Map and Time Line windows, along with the line and area features to put the features in perspective. You can also see where the trash cans are located in relation to the park benches:
Viewing the status of a feature

1. Open the Feature Properties window. (From the Data menu click or choose Data / Feature Properties.)

2. Click < and > to scroll through the list of features collected.

3. View the status of each feature in the Status area near the bottom of the window:

Table 3.3 shows the three values for the status of a feature.

**Table 3.3 Feature status**

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>A new feature is one that has been added to a data file in the most recent data collection session. A new data file will only contain new features.</td>
</tr>
<tr>
<td>Imported</td>
<td>An imported feature is one that previously existed in a data file and has not been edited or updated in the most recent data collection session.</td>
</tr>
<tr>
<td>Updated</td>
<td>An updated feature is one that previously existed in a data file, but has been edited or updated in the most recent data collection session.</td>
</tr>
</tbody>
</table>
Measuring distances

The Measure command lets you measure distances and areas on the map. You can measure the distance between two points, or the distance along a route. To measure the distance along a route and not merely the distance as the crow flies, you measure a series of straight-line distances between points along the route. The approximate route distance is the sum of these distances. You can also measure the area enclosed by a set of points.

To measure the distance between two positions:

1. Select the Map window to make it active.
2. Click the Measure tool or select Data / Measure to activate the Measure tool.
3. Click on the Map window at the start position. The status bar changes to display the measurement information.
4. Move the mouse towards the position you want to measure to.
5. Click on the end position. The status bar displays the total distance and bearing between the positions:

   Distance 0.129 km, Bearing 165°27'31"T

6. Double-click, press Esc, or select another tool to end the measurement command.

   **Tip** – To change the measurement units select Options / Units and change the distance measurement.
Exporting data to update the GIS

If you want to export an updated data file to a format that is suitable for your GIS, you would use the Export utility.

If you are going to use the Status flag to determine how to update the features in the GIS, make sure that the Update Status generated attribute is exported (In the Export dialog, click Properties and select the Attributes tab):

For more information, refer to the Export Utility Help.
Exercise 8: Special Exercise

The special exercise has no effect on the other exercises and can be done independently. It is divided into two parts. You do not have to complete both parts, and it does not matter which part you do first.

In the first part of the special exercise Batch processing, you learn how to use the Batch Processor utility to automate repetitive tasks.

In the second part of the special exercise, Managing waypoints, you learn how to create and view waypoints.

Batch processing

The Batch Processor utility is a powerful tool designed to help you increase your productivity by automating repetitive tasks. This means that you can spend more time collecting data in the field.

You can set up the Batch Processor utility to transfer data, differentially correct, format, and then export files to your particular GIS system. It can also import and process your files with your GIS software, depending on the power of its own batch or macro language.

You can save your settings as a batch setup to use in future sessions. A batch setup stores information about, and specific settings for, the Data Transfer, Differential Correction, and Export functions you select. You can also associate a particular project with a batch setup.

The first part of this special lesson shows you how to:

- create a batch setup
- differentially correct files
- export corrected files
- run the Batch Processor utility
To create a new batch setup and run the Batch Processor utility:

1. Click the Batch tool  or select *Utilities / Batch Processor*. The *Batch Processor* window starts, then the *Batch Setup* dialog appears:

![Batch Setup dialog]

2. Click **New**. The following dialog appears:

![New Setup dialog]

3. In the *Setup Name* field, type a name for your batch setup. Choose a meaningful name so that you can easily identify it each time you use this batch setup. For example, use the name of your client and the date you create the setup.
4. Click **OK**. The *Batch Setup Properties* dialog appears:

![Batch Setup Properties dialog](image)

The Batch Processor utility follows a wizard-style process of moving through a series of pages using the **Next** and **Back** buttons.

5. The first three options are selected by default but, for the purposes of this tutorial, clear the *Data Transfer* check box. This prevents the Batch Processor utility from attempting to connect to and transfer data from a field computer.

The check marks next to Differential Correction and Export indicate that, in this setup, the Batch Processor utility will differentially correct and export the selected data files.

In the *Project* group, the *Current project* field shows the project associated with the last-used batch setup. If you want to specify a project that will always be associated with the batch setup you are creating, select the *Selected project* option, click the drop-down arrow and choose a project from the list.
6. In the Project group, choose the Selected project option and make sure that the Tutorial project is selected.

7. Make sure that the Allow files to be overwritten check box is selected, otherwise the Batch Processor utility stops when it tries to create a file that already exists.

8. Click **Next**. The Processing Type page appears:

   ![Batch Setup Properties](image)

   It displays the processing options available for the data files. Because you have not yet selected the files for processing, all processing type options are available.

9. In the Single-base group, make sure that the Automatic option is selected. This is the default setting and it is the most thorough type of processing.
10. Click **Next**. The *Correct Settings* page appears:

![Batch Setup Properties dialog]

It displays the settings that will be used to differentially correct the data files. The default settings are displayed above.

If the settings displayed are different to the default settings, click **Change**. The *Correction Settings* dialog appears. In each tab, select the appropriate options so that your settings match the default correction settings. Click **OK** to close the dialog and return to the Batch Processor utility.

11. Click **Next**.
Because you chose a single base station code processing option, the Select Base Data page appears.

If you have access to the Internet, download base data files from the tutorial base provider:

a. In the *Base Data* group, select *Base Provider Search*:

b. Click the **Select** button next to the Base Provider Search text box.
The Select Base Provider dialog appears:

![Select Base Provider Dialog](image)

The dialog displays a list of available base providers. The list is arranged by distance from the location where the previously corrected rover files were collected.

For this tutorial, we have set up an FTP site for the tutorial base data and named it “GPS Pathfinder Office tutorial base files”.

c. Click the “GPS Pathfinder Office tutorial base files” provider (near the top of the base provider list) to select it, and then click **OK**.
If you do not have access to the Internet, select the folder where base data files for the tutorial are stored:

a. In the Base Data group, select Folder Search.

b. Click the Select button next to the Folder Search text box.

The Folder Search dialog appears:

![Folder Search dialog](image)

c. Click Browse to navigate to the base folder that is defined for the Tutorial project. The default location is C:\Pfdata\Tutorial\Base.

d. Click OK.

The dialog closes and you are returned to the Select Base Data page of the utility. The base provider, or the path of the folder you selected, is displayed in the text box below the Base Data option you selected.

12. In the Reference Position group, select Use reference position from base files.
13. Click **Next**. The Output page appears:

![Output page](image)

It displays the options for outputting the processed files.

14. Make sure the *Use project folder* option is selected.

15. Make sure the *Create a unique filename* option is selected. That means that if you reprocess files, each subsequent processed file will have _n appended to the filename, where _n denotes the next number in the sequence.
16. Click **Next**. The *Export* page appears:

![Batch Setup Properties](image)

It displays the options for the export part of the batch process.

17. Click the drop-down arrow below the Export Setup field and select the Sample ESRI Shapefile Setup option. The export folder defaults to \Pfdata\Tutorial\Export, which is the export folder specified for the project.

18. Click **Finish** to return to the *Batch Setup* dialog.

19. Click **Run**.
20. Because you chose not to transfer files from a field computer, the Batch Processor utility requires you to select files from the *Select Files to Process* dialog:

![Select Files to Process dialog](image)

All data files are shown in this dialog, including a set of Standard Storage Format (.ssf) files. These are files that have been collected in the field.

21. Select the files TUTDATA1.ssf, TUTDATA2.ssf, and TUTDATA3.ssf, as follows:

   a. Click TUTDATA1.ssf, then, while holding down Ctrl, click TUTDATA2.ssf and TUTDATA3.ssf.

      All three data files are now highlighted.

   b. Click **Open** to run the batch setup.

As the batch setup runs, a series of progress dialogs is displayed, and a record of what happened during the batch process is saved in a log file. You can refer to this log file once the batch session has finished to confirm that everything was processed as expected.
Once the session is complete, the batch log window appears, indicating that the data was correctly processed:

22. Examine the detailed log by clicking on the Details tool or selecting View / Show Details.

The detailed log shows you the input data files, the names of the automatically selected base files, and other information about the batch process. If anything goes wrong, check this log to determine what happened.

23. To save the log file:
   a. Select File / Save As.
   b. Give the file a meaningful name.
   c. Save the file in the \Pfdata\Tutorial folder.

24. Select File / Exit to close the Batch Processor utility.
Managing waypoints

Waypoints are named locations that you can record using a field computer running data collection software, or create in the GPS Pathfinder Office software. Waypoints are useful for navigating to a point.

In the GPS Pathfinder Office software, waypoints are stored in files that usually have the extension .wpt. You can store as many waypoints as you like in one file.

The second part of this special exercise shows you how to:

- create a new waypoint file
- create a waypoint

To create a new waypoint file:

1. Start the GPS Pathfinder Office software and open the Tutorial project.
2. Select View / Map to display the Map window.
3. To display files in the Map window:
a. Select *File / Background*. The following dialog appears:

![Load Background Files dialog](image1)

b. Click *Add*. The following dialog appears:

![Add Background Files dialog](image2)

c. Select the three .cor files (or the first three .ssf files if no .cor files are available).
d. Click **Open** to return to the *Load Background Files* dialog.

e. Click **OK**.

Progress bars will show that the files are loading, then the map will display the features from the data files.

4. Select *File / Waypoints / New*. The following dialog appears:

   ![New Waypoint File Dialog](image)

   By default, the new waypoint file is named using the current date and time in the 24-hour clock format, wMMDDHHa, where w is the waypoint file identifier and a is the number of the file that was created in that hour. For example, the file w042810a.wpt was created on 28 April at 1000 hours. It was the first file created in that hour.

5. If you want, change the filename and the current folder, then click **OK**.
The Waypoint Properties dialog opens automatically when you open a waypoint file:

Using the Waypoint Properties dialog you can create new waypoints, edit existing waypoints, or delete waypoints from the waypoint file.

6. Click Create. The following dialog appears:

7. Select the Pick From Map check box.

If the Map window has no files displayed in it, the Pick From Map field is unavailable.
8. Click anywhere in the Map window (for example, on a feature that you want to revisit).

The North, East, and Altitude fields have been filled in with the coordinate of the location that you clicked on:

```
 North: 4141154.617 m
 East: 588537.163 m
 Altitude (MSL): 2.015 m
```

9. If you want, change the default waypoint name to a more meaningful name, and click Save to save this as a waypoint.

10. Click Close to close the Create Waypoint window.

The Waypoint Properties window reappears with the waypoint you just created displayed in the list on the left. The waypoint appears as a crossed-flag symbol on the map.

11. Select File / Waypoints / Close to close the waypoint file. It is now saved permanently on the disk.

In a real situation, you can create as many waypoints as required, and then transfer the waypoint file to the field computer using the Data Transfer utility. You can then navigate your way (back) to these waypoints.

**Note** – *There is no limit to the number of waypoints that can be stored by the ASPEN® software, the TerraSync software, or the GeoExplorer 3 handheld. However, some older types of field computers and receivers limit the number of waypoints you can store. You can create any number of waypoints in one file, but a GeoExplorer® or GeoExplorer II data collector can store a maximum of 99 waypoints. For a GPS Pathfinder Basic series GPS receiver, the limit is 999 waypoints. For a field computer running the Asset Surveyor® software, the limit is 32767 waypoints.*
Troubleshooting

In this chapter:

- Map and Time Line Display
- Printers and Plotters
- Internet Problems
- Web Map Server Problems
- Compressed RINEX Base Files
- General
Troubleshooting

This appendix describes problems that can occur and explains how to solve them. The following categories of problems are covered:

- Map and Time Line Display, page 127
- Printers and Plotters, page 130
- Internet Problems, page 131
- Web Map Server Problems, page 135
- Compressed RINEX Base Files, page 139
- General, page 140

For information on the latest support issues, go to the Trimble website (www.trimble.com/pathfinderoffice.html and click Support).
Troubleshooting

Map and Time Line Display

Table A.1 lists symptoms related to the display in the Map or Time Line windows, possible causes, and their fixes.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The coordinates displayed appear to be incorrect.</td>
<td>You are using the Latitude/Longitude coordinate system and you selected the wrong datum.</td>
<td>In the Coordinate System dialog, select Latitude/Longitude and specify the correct datum.</td>
</tr>
<tr>
<td></td>
<td>You are using the UTM coordinate system and you selected the wrong UTM zone.</td>
<td>In the Coordinate System dialog, set System to UTM and specify the correct zone.</td>
</tr>
<tr>
<td></td>
<td>You are using the UTM coordinate system and you selected the wrong datum.</td>
<td>In the Coordinate System dialog, set System to UTM and specify the correct datum. <strong>Note</strong> – The traditional UTM datum for the U.S.A is NAD-27.</td>
</tr>
<tr>
<td></td>
<td>You selected the wrong coordinate system or zone.</td>
<td>In the Coordinate System dialog, select the correct coordinate system and zone.</td>
</tr>
<tr>
<td></td>
<td>You are using the wrong coordinate units.</td>
<td>In the Coordinate System dialog, select the correct coordinate units.</td>
</tr>
<tr>
<td>The background file has the wrong scale, it is too large or too small</td>
<td>When loading a background file, the GPS Pathfinder Office software uses the coordinate units specified in the Coordinate System dialog to interpret the coordinates in the file. If the units configured in the GPS Pathfinder Office software are different from the units specified in the background file then the background will have the wrong scale.</td>
<td>Check the coordinate units used in the background file. Change the configured units in the Coordinate System dialog. Then reload the background file.</td>
</tr>
</tbody>
</table>

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Troubleshooting

Table A.1  Map and Time Line window display errors (continued)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS information is not overlaying correctly on the background file.</td>
<td>When loading a background file, the GPS Pathfinder Office software uses the coordinate system you specified to interpret the coordinates. If this coordinate system is different from the one used by the background file, GPS positions will not overlay correctly.</td>
<td>In the Load Background Files dialog, highlight the background file and check its associated coordinate system. If necessary, change the configured system with the Change button in File / Background.</td>
</tr>
<tr>
<td>The waypoints entered previously from a paper map are not in the correct position on the map and their coordinates appear incorrect.</td>
<td>The coordinate system used on the paper map and the coordinate system configured in the GPS Pathfinder Office software when you entered the waypoints were different. You must use the same coordinate system in the GPS Pathfinder Office software as the coordinate system used on the paper map.</td>
<td>Re-enter the coordinates from the paper map using the correct coordinate system in the GPS Pathfinder Office software.</td>
</tr>
<tr>
<td>The Map window appears to be empty, yet you know you should have data displayed in it.</td>
<td>You zoomed to extents and you have a waypoint file with waypoints a long way away from where you are currently. This can make the background map and SSF file very small in the Map window.</td>
<td>If you do not need the waypoints in the current waypoint file, close the file. Alternatively, select View / Layers / Waypoints and clear the View check box; this hides the display of waypoints on the Map. Then select View / Zoom / Extents or the Zoom Extents tool and you should see the data clearly in the Map window.</td>
</tr>
<tr>
<td>You lost where you are on the Map window.</td>
<td>The Map is zoomed in or panned away from the current position.</td>
<td>Select the Map window and then select View / Zoom / Extents or the Zoom Extents tool. The Map window zooms to extents.</td>
</tr>
<tr>
<td>Information in the background file is not displayed on the Map.</td>
<td>You turned some layers off.</td>
<td>Select View / Layers / Background and turn the appropriate layers on.</td>
</tr>
</tbody>
</table>

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## Troubleshooting

### Table A.1 Map and Time Line window display errors (continued)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information in the SSF file is not displayed on the Map or Time Line.</td>
<td>You turned some layers off.</td>
<td>Select View / Layers / Features and turn the appropriate layers on.</td>
</tr>
<tr>
<td>Notes in the SSF file are not being displayed the Time Line.</td>
<td>You turned the notes layer off.</td>
<td>Select View / Layers / Notes and turn the notes layer on.</td>
</tr>
<tr>
<td>SSF files that have carrier and code processed data and are loaded as background files, appear slightly different in the Map window to how they appear when opened in the foreground—point features may not match exactly the file.</td>
<td></td>
<td>Display the positions in the foreground instead. To do this, select File / Open.</td>
</tr>
<tr>
<td>Waypoints in the waypoint file are not being displayed on the Map.</td>
<td>You turned the waypoint layer off.</td>
<td>Select View / Layers / Waypoints and turn the waypoint layer on.</td>
</tr>
<tr>
<td>You cannot see notes or nested points on the Time Line.</td>
<td>The Time Line window has been resized so that the notes and nested point features are hidden.</td>
<td>Resize the Time Line window vertically.</td>
</tr>
</tbody>
</table>
## Printers and Plotters

Table A.2 lists possible causes and fixes for problems relating to printing and plotting.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The plot contains more information than appears in the Map window.</td>
<td>By default, the scale of a plot is rounded down to a regular value. Compare the scale displayed in the Map window with the scale displayed on the plot.</td>
<td>Change the scale value to a different value in the Plot dialog.</td>
</tr>
<tr>
<td>Background raster files do not appear on the plot.</td>
<td>Pen plotters cannot display background raster files.</td>
<td>Select a printer such as a laserjet or inkjet printer, if available.</td>
</tr>
<tr>
<td>Some text does not appear on the plot, or is colored incorrectly.</td>
<td>Some non-postscript printer drivers do not display colored rotated text correctly. Dark colors display as black and light colors display as white. Non-rotated text is always displayed as black.</td>
<td>Edit the background file which contains the rotated text and convert all text into a dark color. Contact the printer manufacturer for an upgrade for the printer driver, if available.</td>
</tr>
<tr>
<td>The edges of the plot are clipped off.</td>
<td>Plotters and printers with a non-printable margin of greater than 1 cm are not supported.</td>
<td>In the printer options, select a page size smaller than the physical size of the paper.</td>
</tr>
<tr>
<td>When running GPS Pathfinder Office in Chinese, Korean, or Japanese, text does not print properly.</td>
<td></td>
<td>In the Plot Map dialog, click Set Font to set an appropriate font before plotting.</td>
</tr>
<tr>
<td>My background Web Map does not print properly.</td>
<td>Some Web Map Servers impose limits on the size of the image that can be requested. Such limits can easily be exceeded when using the Plot Map functionality in GPS Pathfinder Office. This is due to a combination of printer resolution and image extents.</td>
<td>In the Load Background Files dialog, select the Web Map background and click Save As. Create a new background image at a reduced resolution, and then load the new file as a background file.</td>
</tr>
</tbody>
</table>
A.3 Internet Problems

If Base Provider Search cannot download the required files, then:

1. Check that your internet connection is working.
   For more information, see Connection problems, page 131.

2. Determine why the files are not present on the Internet server.
   For more information, see Files not present on the Internet server, page 132.

Connection problems

A helpful rule for problem solving is that if Microsoft Internet Explorer works, then the Base Provider Search option in the Differential Correction wizard will also work. That is, if Internet Explorer can access and download base files from the chosen Internet base data provider, then this establishes that Windows is set up correctly to work with the Internet.

Internet Explorer uses the Windows settings, as does the Differential Correction wizard. Some other Internet browsers, such as Netscape, do not use the Windows settings; they use their own settings. Using a browser other than Internet Explorer does not help with troubleshooting Differential Correction problems.

If Internet Explorer cannot download the base files, then there is a problem with the Windows setup. You may need help from your System Administrator or Internet Service Provider (ISP) to resolve the problem.

Trimble is not responsible for setting up your Internet connection, or for solving any Internet problems that may occur.

Note – After changing the Windows Internet settings, you must close and restart the Differential Correction wizard for the changes to take effect.
Table A.3 lists possible causes and solutions for problems relating to Internet connections.

### Table A.3 Internet connection errors

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>You cannot connect to the Internet. A</td>
<td>Windows’ Internet configuration is not set</td>
<td>Check the Windows Internet settings. Select Settings / Control Panel from</td>
</tr>
<tr>
<td>timeout error occurs, or it fails to</td>
<td>up correctly. Perhaps the modem is not</td>
<td>the Start menu and double-click the Internet icon. Try using Internet</td>
</tr>
<tr>
<td>dial up the ISP.</td>
<td>installed correctly, or Dial Up Networking is not set up correctly.</td>
<td>Explorer to determine whether it can access and download the base files.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contact the System Administrator or ISP for further assistance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Files not present on the Internet server**

If your Internet connection is working correctly, then the problem may be that the files, which the GPS Pathfinder Office software expects, are not present on the Internet server. There are many possible reasons for this. You may want to contact the administrator of the base station to see if anything has changed.

Trimble regularly updates base provider information. To get the latest provider information:

1. Start the Differential Correction wizard.
2. In the Select Base Data page, select the Base Provider Search option and click Select. The Select Base Provider dialog appears. [to insert]
3. Click Update List. A progress dialog indicates that base providers are being downloaded.
Once download is complete, the list of base providers in the Select Base Provider is updated.

4. Choose the base provider you want to use and click **OK** to return to the Differential Correction wizard.

5. Select the *Confirm base data and position before processing* checkbox and click **Next**.

6. Select your output and file naming options, and click **Start**.

7. Check the Differential Correction Report in the progress window to see if the base files have been downloaded from the selected base provider.
   - If the files have been downloaded, click **Confirm** to continue with postprocessing the data.
   - If the files have not been downloaded, use the **Back** buttons to return to the Select Base Data page and select a different base provider.
**Troubleshooting**

Table A.4 lists possible causes and solutions for problems relating to files on the Internet.

**Table A.4 Internet file errors**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>You cannot find a local Internet base data provider in the list.</td>
<td>The base data provider list is not up to date.</td>
<td>Click New in the Internet Search dialog, and select the Copy the most up-to-date list from Trimble's Internet site, and select from it option in the New Provider dialog.</td>
</tr>
<tr>
<td></td>
<td>Even the latest list does not contain a local provider.</td>
<td>Create a new provider in the Internet Search dialog, and select the Enter the details yourself option in the New Provider dialog. You may need to contact the local provider to ask for some of the important details.</td>
</tr>
<tr>
<td>Failure to copy files from the Internet (error code 500 or 550).</td>
<td>This is a general Internet error code. The most likely causes are that the file or directory does not exist on the server, or that the server was not found.</td>
<td>The file may not exist because it is too old. Most base providers only keep one to three months of data online before archiving. The file may not exist if it is outside the hours logged by the server. For example, some base stations only log data for normal working hours. Also, the base station may have been put out of service during the required time period. It is possible that the specified directory is incorrect, perhaps because the provider has changed the server configuration. If you entered the Base Provider details, check that the server address is correct. Also check that the proxy server is set up correctly. In most cases, you can use Internet Explorer to double-check the required URL (Internet address). If necessary, contact the base data provider.</td>
</tr>
</tbody>
</table>
Web Map Server Problems

If you cannot connect to a Web Map Server using the GPS Pathfinder Office software, do the following:

- Check that your Internet connection is working. For more information, see Internet connection problems, page 135.
- Check that the Web Map Server is responding. For more information, see Web Map Server Connection Problems, page 136.

Internet connection problems

A helpful rule for problem solving is that if Microsoft Internet Explorer can access and download information from a chosen website, it should be possible to connect to a Web Map Server. This establishes that Microsoft Windows is set up correctly to work with the Internet.

Internet Explorer uses the Windows settings. Some other Internet browsers, such as Netscape, do not use the Windows settings; they use their own settings. Using a browser other than Internet Explorer does not help with troubleshooting Web Map Server problems.

If Internet Explorer cannot access or download information from the Internet, then there is a problem with the Windows setup. You may need help from your systems administrator or Internet Service Provider (ISP) to resolve the problem.

For information about possible causes and solutions for problems relating to Internet connections, see Table A.3 on page 132. **Trimble is not responsible for setting up your Internet connection, or for solving any Internet problems that may occur.**
Troubleshooting

**Web Map Server Connection Problems**

Before you contact Trimble Support with any Web Map Server queries, work through the solutions described in this troubleshooting section.

Table A.5 provides possible solutions for some difficulties that you may encounter when using a Web Map Server.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecting to a Web Map Server for the first time</td>
<td>It is likely that you have an Internet connection problem.</td>
<td>See Internet connection problems above.</td>
</tr>
<tr>
<td>The message Error connecting to Web Map Server appears immediately after any operation.</td>
<td>It is likely that the URL is invalid.</td>
<td>Try using a known URL.</td>
</tr>
<tr>
<td>The message Resolving server &lt;URL&gt; appears a few seconds after the progress dialog.</td>
<td>It may mean that the Web Map Server, or some of its services, are temporarily unavailable.</td>
<td>Try again later.</td>
</tr>
<tr>
<td>The message Waiting for the server to respond appears for a long period of time in response to a request.</td>
<td>The GPS Pathfinder Office software does not support the PNG images that are being sent by the Web Map Server.</td>
<td>Select a different server.</td>
</tr>
</tbody>
</table>

**Reconnecting to a Web Map Server**

When reconnecting to a Web Map Server, you may experience the messages Error connecting to Web Map Server or Waiting for the server to respond as described above.

This may be because of problems with the Web Map Server. Try again later, or use other tools to validate the Web Map Server state. For example, to check the status of the Web Map Server, visit the URL using a Web browser or contact the Web Map Server host directly to check for any known problems or server downtime.

Remove the existing URL from your Backgrounds list and create a new Web Map component for the same server using the Web Map wizard.
## Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected to a Web Map Server</td>
<td>Some or all of the layers have been removed from the Web Map Server, or their configuration has changed, since you last visited that URL. Some Web Map Servers set layers to be visible only for certain scales.</td>
<td>Return to the Web Map wizard and change or reselect these layers. Select All Layers in the Web Map wizard and zoom in and out to determine which layers are visible at particular scales. You can then deselect the unwanted layers.</td>
</tr>
<tr>
<td>The coordinates displayed for your selected layers in the Web Map wizard are either not shown or they are not sensible values.</td>
<td>The coordinates for the selected layers received from the Web Map Server may be invalid for the corresponding GPS Pathfinder Office coordinate system.</td>
<td>Use the Internet and other resources to find the actual coordinate system for each server/service/layer (for more information, see below) and ensure that the Web Map Server and GPS Pathfinder Office coordinate systems correspond. Use the Web Map wizard to change the coordinate systems until the Layers dialog displays sensible coordinates.</td>
</tr>
<tr>
<td>Web Map Server layers do not appear in the GPS Pathfinder Office software.</td>
<td>The coordinate system received from the Web Map Server is not the same as the coordinate system in GPS Pathfinder Office.</td>
<td>Most layers on ArcIMS map servers are in WGS-84 (Lat/Long). If in doubt, try this as the corresponding GPS Pathfinder Office coordinate system. For OpenGIS, the Web Map Server coordinate system is described using the European Petroleum Survey Group (EPSG) standard EPSG codes. The most commonly used code is EPSG: 4326, which corresponds to WGS-84 (Lat/Long). The EPSG website (<a href="http://www.epsg.org">www.epsg.org</a>) has a link to a Microsoft Access (.mdb) database that lists all the EPSG codes and a description of the corresponding coordinate system. <strong>Note</strong> – If you have problems opening the .mdb file provided, try importing the tables contained within the database into an empty .mdb database.</td>
</tr>
</tbody>
</table>
A  Troubleshooting

If after working through these solutions you still need to contact Trimble Support, make sure you have all your files and relevant information available from the Web Map Server, that is:

- the correct URL
- the service chosen
- layers selected
- the GPS Pathfinder Office software coordinate systems used
Compressed RINEX Base Files

GPS Pathfinder Office software version 2.90 and later supports base stations that use the compressed RINEX format. If you are using an earlier version of GPS Pathfinder Office software, use the information in Table A.6 to help you troubleshoot problems that you may have.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>I cannot use the RINEX base files from my base station provider.</td>
<td>They may be Hatanaka files (compressed RINEX files). These files are UNIX-compressed. Some base station providers use the Hatanaka, or compressed RINEX, file compression for their RINEX observation files. Hatanaka files contain a &quot;d&quot;, rather than an &quot;o&quot;, as the last filename character. GPS Pathfinder Office requires RINEX files to be named using the standard RINEX filenaming conventions. Each observation file should have a matching navigation file.</td>
<td>1. Download the compressed RINEX files from the base station provider. 2. Manually convert the files to the standard RINEX format. To do this, run the Hatanaka Conversion Program (crx2rnx), which is available from the SOPAC website (sopac.ucsd.edu/dataArchive/hatanaka.html). 3. Ensure that you have correctly named the files. For example, if the compressed file is called mtjo0670.02d, following naming conventions:  • File.obs and File.nav, where &quot;File&quot; can be substituted by any filename or file.  • File.YYo and File.YYn, where YY is the last two digits of the current year. For example, in 2002 this would be File.02o and File.02n.</td>
</tr>
</tbody>
</table>
## General

Table A.7 lists general problems, their possible causes, and fixes.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The GPS Pathfinder Office software has locked up.</td>
<td>A corruption has occurred while running Windows software.</td>
<td>Press [Ctrl]+[Alt]+[Delete]. Any program that has locked up is marked as Not responding. Select it and close that program. Alternatively, press the reset button. Then restart Windows, and restart the GPS Pathfinder Office software. If the problem recurs, contact the Trimble Service Center.</td>
</tr>
<tr>
<td>You cannot find the window you want to use.</td>
<td>The window has scrolled off the desktop.</td>
<td>Maximize the application so that you can see more of the windows. You can also select Windows / Cascade to cascade the windows on the desktop so that you can see them.</td>
</tr>
<tr>
<td>The GPS Pathfinder Office software is not behaving as expected, and you cannot find the symptom in this Appendix.</td>
<td>Settings in the registry or configuration files may be incorrect.</td>
<td>Reinstall the software.</td>
</tr>
</tbody>
</table>
Troubleshooting

A DOS utility will not start.
DOS does not recognize
the command.

The “PATH” environment
variable is not correctly
set.

At installation time, the “PATH”
environment variable is set up to
include the location of the DOS
utilities. Sometimes it is not possible
for the installation setup to
automatically make the correct
changes. If necessary, do one of the
following:
– For Windows 95 or 98, manually
edit the PATH statement in the file
autoexec.bat.
– For Windows NT or 2000, edit the
Path system variable under
Control
Panel / System / Environment.

The file that I am trying to
transfer using the Data
Transfer utility will not
transfer.

The Data Transfer utility
may not be able to
transfer the file because
of certain characters in the
filename (in particular,
Asian language
characters)

Ensure that the correct system locale
and code page settings are used. Set
the system locale under Start /
Settings / Control Panel / Regional
Options / Set Default to the
appropriate language, and ensure
that the appropriate code page
conversion table is selected under
Start / Settings / Control Panel / Regional
Options / Advanced.

Table A.7 General errors (continued)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
</table>
| A DOS utility will not start. DOS does not recognize the command.      | The “PATH” environment variable is not correctly set.                 | At installation time, the “PATH” environment variable is set up to include the location of the DOS utilities. Sometimes it is not possible for the installation setup to automatically make the correct changes. If necessary, do one of the following:
– For Windows 95 or 98, manually edit the PATH statement in the file autoexec.bat.
– For Windows NT or 2000, edit the Path system variable under Control Panel / System / Environment. |
| The file that I am trying to transfer using the Data Transfer utility will not transfer. | The Data Transfer utility may not be able to transfer the file because of certain characters in the filename (in particular, Asian language characters) | Ensure that the correct system locale and code page settings are used. Set the system locale under Start / Settings / Control Panel / Regional Options / Set Default to the appropriate language, and ensure that the appropriate code page conversion table is selected under Start / Settings / Control Panel / Regional Options / Advanced. |
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