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## Trimble GPS Analyst extension for ESRI ArcGIS software Customer FAQs

### What is the GPS Analyst extension?

Trimble® GPS Analyst™ is an extension to the ESRI ArcGIS software that allows you to work directly with GPS data inside your GIS environment. The GPS Analyst extension provides functionality for importing, differentially correcting, viewing, and editing GPS data.

### What are the key features of the GPS Analyst extension?

With the GPS Analyst extension you can:

- View, edit, and analyze GPS data inside ArcMap and ArcCatalog
- Improve productivity by eliminating extra file conversions and processing steps outside the GIS
- Improve GPS position accuracy by differentially correcting data from supported Trimble GPS receivers, including data collected with Trimble H-Star™ receivers. With H-Star processing you can achieve subfoot (30 cm) accuracy with a GeoXH™ handheld or GPS Pathfinder® ProXH™ receiver, or even 8 inch (20 cm) when using an external Zephyr™ antenna.
- Check data out to Shapefiles for update in the field with ArcPad and Trimble GPSCorrect™ extension for ESRI ArcPad software, then check new and updated features and GPS positions back into the geodatabase
- Import data from SSF files created with the TerraSync™ software or applications developed with the GPS Pathfinder Tools Software Development Kit (SDK)
- Set up and run validation on GPS positions to ensure features meet the required accuracy
- Store detailed quality information for GPS data
- Take advantage of the tools and functions of ArcMap to perform additional GPS data analysis, such as overlaying GPS data with other data layers
- Use ArcGIS with a Trimble or NMEA GPS receiver in the field to collect features and GPS data directly into the geodatabase

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- Develop extensions to support other GPS receivers for in-field data collection or even for postprocessing GPS data
- Use ESRI ArcObjects to customize GPS Analyst extension workflows and data processing to suit your requirements

## What field software does GPS Analyst extension work with?

GPS Analyst extension supports GIS/GPS data collected with the following field software applications:

- ESRI ArcPad with GPSCorrect extension
- TerraSync software
- ArcGIS with GPS Analyst extension
- Applications developed using GPS Analyst extension's COM object interface
- Applications developed using the GPS Pathfinder Tools Software Development Kit (SDK)

Currently, differential correction is only available if the field data was collected using one of the following supported Trimble GPS receivers:

- GeoExplorer<sup>®</sup> 2005 series and GeoExplorer 2003 series handhelds (combined GPS receivers and Pocket PC devices):
  - GeoXM<sup>™</sup>
  - GeoXT<sup>™</sup>
  - GeoXH (GeoExplorer 2005 series only)
- Juno<sup>™</sup> ST handheld
- GPS Pathfinder<sup>®</sup> ProXH
- GPS Pathfinder ProXT<sup>™</sup>
- GPS Pathfinder Pro XRS
- GPS Pathfinder XB receiver
- GPS Pathfinder XC receiver
- Trimble Recon<sup>®</sup> GPS XB edition
- Trimble Recon GPS XC edition

As an open extension to ArcObjects, the GPS Analyst extension can also be extended to add support for differential correction of data from other GPS receivers, if they can provide the necessary data to the geodatabase.

## What GPS receivers does GPS Analyst extension work with?

You can use GPS Analyst extension to collect GPS data directly to the geodatabase with the following Trimble GPS receivers:

- GeoExplorer 2005 series and GeoExplorer 2003 series handhelds (combined GPS receivers and Pocket PC devices):
  - GeoXM
  - GeoXT
  - GeoXH (GeoExplorer 2005 series only)
- GPS Pathfinder ProXH
- GPS Pathfinder ProXT
- GPS Pathfinder Pro XRS
- GPS Pathfinder XB receiver
- GPS Pathfinder XC receiver

GPS data from supported Trimble receivers can be differentially corrected using the GPS Analyst extension.

In addition, the GPS Analyst extension supports data collection in the field with ArcGIS from NMEA-compliant GPS receivers. Any NMEA receiver that meets the following requirements is supported:

- Outputs both the GPGSA and GPGSV sentences
- Outputs one of the following sentences: GPGGA, GPGLL, GPRMC
- Outputs positions in the WGS-84 datum

GPS data from NMEA receivers cannot be differentially corrected.

## What is NMEA?

NMEA is an open industry standard established by the National Marine Electronics Association (NMEA). The NMEA standard defines a format for communicating data collected or computed by a GPS receiver to an external device. For more information on the NMEA standard, go to [www.nmea.org/pub/index.html](http://www.nmea.org/pub/index.html).

## What is differential correction?

Differential correction improves accuracy by removing many of the errors in GPS data. During differential correction, GPS data collected on a field device (the rover) is compared with data collected simultaneously at a known location (the base). Because the base data is collected at a known location, any errors can be measured, and the necessary corrections can then be applied to the rover data.

## Does GPS Analyst extension support H-Star technology?

GPS Analyst extension supports H-Star requirements in both the field and office. In the field, H-Star data is collected using Trimble software specifically designed for high accuracy logging. A Predicted Postprocessed Accuracy (PPA) indicator clearly shows the accuracy likely to be achieved once H-Star data is postprocessed. Back in the office, select the H-Star carrier processing option in the Differential Correction wizard. With H-Star processing, multiple reference stations are utilized to reduce errors

caused by reference station bias and distance. Data collected with TerraSync software or the GPSCorrect extension can also be corrected with H-Star processing in the GPS Analyst extension.

### **What is an SSF file?**

SSF (Standard Storage Format) is a file format commonly used by Trimble Mapping & GIS software. Trimble's TerraSync software and GPSCorrect extension, and applications developed with the GPS Pathfinder Tools SDK, store data in SSF files. You can use the GPS Analyst extension to import SSF files directly into the geodatabase.

### **Where can I find out if there is a base station in my area?**

Trimble maintains a list of monitored base stations around the world that provide base data over the Internet. When you use the Differential Correction wizard in the GPS Analyst extension, you can view this list and easily choose the base station closest to you, or one that is providing the best quality data.

Alternatively, go to [www.trimble.com/trs/findtrs.asp](http://www.trimble.com/trs/findtrs.asp) to see a list of Trimble Reference Stations available worldwide.

### **I use ArcPad. What does GPS Analyst extension do for me?**

GPS Analyst extends the ArcPad support offered today in ArcMap. If you use the Trimble GPSCorrect extension with ArcPad, GPS Analyst extension allows you to automatically check in GPS data collected by the GPSCorrect extension when you check in ArcPad Shapefiles. Then, you can easily differentially correct your GPS data, and re-build your GIS features using the corrected positions, all inside ArcGIS Desktop.

### **I use TerraSync software. What does GPS Analyst extension do for me?**

With GPS Analyst extension, you can import SSF files created in the TerraSync software directly into the geodatabase. When you've finished working in the field, use the Trimble Data Transfer utility to transfer files from your field computer to the office computer. Then, with the GPS Analyst extension, you can simply import the files into ArcCatalog. Differentially correct, validate, and do your quality analysis all inside the geodatabase. If you need to take data back out in to the field, simply export the data to SSF files, and again use the Data Transfer utility to transfer the data to your field computer.

Data Transfer is a free utility. It is provided on the GPS Analyst CD, and is also available from [www.trimble.com/datatransfer.html](http://www.trimble.com/datatransfer.html).

### **What are the differences between the GPS Analyst extension and GPS Pathfinder Office software?**

The GPS Pathfinder Office software provides office processing functions for GPS data collected with Trimble field software. It includes tools for differentially correcting, editing, and inspecting Trimble SSF files, and tools for converting between SSF and a number of GIS formats.

GPS Analyst extension implements similar functionality inside an ArcGIS geodatabase. GPS data can be added to the geodatabase by importing existing Trimble SSF files, by checking in ArcPad Shapefiles, or even by taking ArcGIS into the field on a laptop computer or Tablet PC with a GPS receiver, and logging features directly to the geodatabase.

Once it is collected or imported, GPS data can be differentially corrected, edited, and viewed within the geodatabase. There are no extra steps once GPS data analysis is complete. For example, the data does not have to be exported or converted to the GIS format, because it is already in the GIS.

GPS Pathfinder Office software contains some features that are not provided in GPS Analyst extension, such as mission planning and carrier phase differential correction. Other functionality, including SSF file manipulation, data dictionary creation, and data conversion for a range of GIS and database formats, is not provided by GPS Analyst extension because it is not required in the ArcGIS environment or is already provided by existing ArcGIS Desktop functionality.

### **What GIS software do I need to run GPS Analyst extension?**

GPS Analyst extension requires ArcGIS version 9.0 (SP3) or later of ArcGIS Desktop (ArcView, ArcEditor, or ArcInfo).

### **Can GPS Analyst extension be used with other GIS software?**

GPS Analyst extension works exclusively with ArcGIS Desktop version 9.0, and later.

### **Does GPS Analyst extension support a floating license scheme?**

Yes, by installing the Mapping and GIS License Manager software on a network server, you can manage multiple licenses for the GPS Analyst extension. Using the GPS Analyst License Administrator software, GPS Analyst extension users can choose either a Single Use or a Floating license.

### **Can GPS Analyst extension be used in an enterprise geodatabase?**

GPS Analyst extension works only in personal geodatabases. Enterprise geodatabase users can check data out to a personal geodatabase to work with GPS Analyst extension.

### **What documentation comes with GPS Analyst extension?**

GPS Analyst extension comes with a Getting Started Guide, including helpful tutorials to get you under way. In addition, GPS Analyst extension has an extensive online Help system. Information on customizing the GPS Analyst extension is also available with the Trimble GPS Analyst Developer Manual and developer samples.

### **Is training available for GPS Analyst extension?**

For information on GPS Analyst extension training, please contact your Trimble Dealer.

### **How do I get technical support for GPS Analyst extension?**

Technical support for GPS Analyst extension is available both via online resources and from your local Trimble representative. In addition, Trimble's Priority Support program is available for customers in the US.

### **Can I use GPS Analyst extension with a non-Trimble GPS receiver?**

Yes, GPS Analyst extension supports both Trimble (TSIP) and industry standard NMEA GPS receivers as part of the standard product. The GPS data model defined by GPS Analyst extension will be open and

published. GPS vendors will have the opportunity to write extensions or plug-ins to add support for their GPS receivers. Currently differential correction can only be performed on data collected with Trimble GPS receivers. However, because GPS Analyst extension is an open extension to ArcObjects, it could be extended to add support for differential correction of data from other GPS receivers.

### **How can developers work with GPS Analyst extension?**

GPS Analyst extension is an open extension to the ArcObjects model. It extends ArcObjects to support the creation, storage, and processing of GPS data inside a personal geodatabase. Developers can use the open GPS Analyst extension COM object interface to extend the GPS Analyst extension. They can add support for other GPS receivers or input methods, or customize its core functionality to add tailored workflows, data collection forms, and processing tools. Further information on customizing the GPS Analyst extension is available with the Trimble GPS Analyst Developer Manual and developer samples.

### **Does GPS Analyst extension work with ArcGIS Server?**

Currently GPS Analyst extension is only supported by ArcGIS Desktop products.

### **What are the differences between GPS Analyst extension and the ArcMap GPS Support toolbar?**

GPS Analyst extension provides a rich set of tools and functionality for GPS-based data collection and GPS data processing with ArcGIS. The ArcMap GPS Support toolbar allows you to connect to a GPS receiver, display your current GPS position on the screen, and record a tracklog (a “breadcrumb trail” of where you have been) that you can play back. The GPS location can be used for digitizing features. Data recorded using the ArcMap GPS Support tools cannot be stored directly to feature classes in the geodatabase, and cannot be differentially corrected.

### **What is the price of the GPS Analyst extension?**

Check with your Trimble Dealer for details.