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Trimble GPScorrect extension for ESRI ArcPad software (version 7.0 and later)—Customer FAQs

What is the GPScorrect extension?

The Trimble® GPScorrect™ extension for ESRI ArcPad software is an integrated Trimble GPS solution for ArcPad users, allowing differential correction of data collected in the field, and seamless control of a Trimble GPS receiver from within ESRI ArcPad software (version 7.0 or later).

What are the features and benefits of the GPScorrect extension?

- More accurate and reliable position data with differential postprocessing in the office
- Logging of H-Star™ data from a GeoXH™ handheld or GPS Pathfinder® ProXH™ receiver, for additional accuracy with H-Star postprocessing in the office
- Choice of the Trimble GPS Analyst™ extension for ESRI ArcGIS software or GPS Pathfinder® Office software for postprocessing
- Easy and complete connection, setup, and status reporting for any Trimble GeoExplorer® 2005 series handheld or GPS Pathfinder receiver from within ArcPad
- Real-time differential correction (correction sources depend on GPS receiver used)
- Mission planning in the field to increase productivity

How do you use the GPScorrect extension?

The GPScorrect extension starts automatically when you use ArcPad, ensuring seamless two-way communication between ArcPad and your Trimble GPS receiver. While you are using ArcPad, the GPScorrect extension operates in the background. A menu command, and an optional icon on the ArcPad toolbar, allows for quick and easy access to GPS setup and status screens when needed.

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Which GPS receivers does the GPScorrect extension work with?

The software supports the following receivers:

- GeoExplorer 2005 series and GeoExplorer series handhelds with an integrated GPS receiver:
  - GeoXM™ handheld
  - GeoXT™ handheld
  - GeoXH handheld (GeoExplorer 2005 series only)
- Juno™ ST handheld
- Trimble Nomad™ series
- GPS Pathfinder Pro series receivers:
  - GPS Pathfinder ProXH receiver
  - GPS Pathfinder ProXT™ receiver
- GPS Pathfinder Pro XRS receiver
- GPS Pathfinder XB receiver
- GPS Pathfinder XC receiver
- Trimble Recon® GPS XB edition
- Trimble Recon GPS XC edition

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.

How much can differential correction improve accuracy?

Differential correction can compensate for errors and inaccuracies introduced by atmospheric and other conditions affecting the local environment. Differential correction can improve the accuracy of GPS positions from 10 meters or more with no correction to between 20 cm and 5 meters. Accuracy achieved after postprocessing will depend on the local environment, the GPS receiver, and the type of differential correction used.

Does the GPScorrect extension support H-Star technology?

Yes. The GPScorrect extension is designed specifically for H-Star logging. A Predicted Postprocessed Accuracy (PPA) indicator in the ArcPad and GPScorrect extension status bars clearly shows the accuracy likely to be achieved once H-Star data is postprocessed. Back in the office, with either the GPS Pathfinder Office software or the Trimble GPS Analyst extension for ESRI ArcGIS software, it is simply

a case of selecting 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.

What is postprocessed differential correction?

Postprocessed differential correction is the process of correcting GPS data after it has been collected. Postprocessing removes errors from the GPS positions, to give greater accuracy than autonomous (uncorrected) positions. This is achieved by comparing data collected on the rover with corrections calculated at a base station, and adjusting the positions in the rover file accordingly. The GPS Pathfinder Office software or the Trimble GPS Analyst extension for ESRI ArcGIS software can perform differential correction to improve the accuracy of GPS field data.

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 your Trimble postprocessing software, 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 to see a list of Trimble Reference Stations available worldwide.

What is real-time differential GPS (DGPS)?

Real-time differential GPS is the process of differentially correcting GPS data as you collect it. This is achieved by having corrections calculated at a base station sent to the receiver via a radio (or other) link. When the rover calculates the position it applies the corrections to give a very accurate position in the field. Various differential correction methods and service providers are available.

Examples of differential correction sources include:

- Beacon (e.g. US Coast Guard)
- Satellite differential service provider (OmniSTAR)
- Radio link to a base station
- Internet or dial-up link to a Virtual Reference Station (VRS)
- SBAS (WAAS, MSAS, EGNOS)

Which differential solution should I use?

This depends on the requirements of your mobile GIS application:

Postprocessed Differential correction can be used to collect accurate data for your GIS, where high accuracy is important for your end application in the GIS, yet less important while in the field.

Real-time differential correction is useful when you need accurate position information in the field for precise navigation, relocation of assets, or collection of data. There is a range of sources of real-time

differential corrections—some of these are free, others require a subscription to be purchased. Availability may depend on the location of your field site, and the capability of your GPS receiver.

Can I postprocess data that has already been real-time corrected?

Yes, by postprocessing real-time corrected data you can further increase the GPS accuracy, and fill in any "gaps" caused when real-time corrections were lost for any reason while collecting data in the field. This provides insurance that your GIS data is as accurate as possible.

What is 'in-field mission planning'?

The GPScorrect extension has in-field mission planning to provide GPS satellite prediction in the field. This allows mobile GIS users to view a Skyplot screen showing where GPS satellites will be, any time from 1 minute to twelve hours ahead. This helps to maintain the quality of the GPS data you will collect. Field mission planning improves the productivity and efficiency of your field GPS session by allowing you to plan your day for maximum GPS quality, while minimizing "down time."

Does the GPScorrect extension include on-line help and a user manual?

Yes. Context-sensitive Help files are installed onto the field computer as part of the GPScorrect extension installation. The digital Getting Started Guide is available on the GPScorrect extension CD. This can optionally be transferred to the field computer for in-field reference.

Is on-line Internet support available?

Yes. Support notes and FAQs are available on the Trimble website. See http://www.trimble.com/gpscorrect_ts.asp for more information.

How is the GPScorrect extension different from the TerraSync software?

The GPScorrect extension is a GPS extension for use with ESRI ArcPad 7.0 software and later, and is ideal for use in mobile GIS applications.

Trimble's TerraSync™ software is a complete GIS data collection and maintenance tool. TerraSync software also includes advanced features and communication with laser range finders and external sensors. More information on TerraSync software can be found on the Trimble website at: http://www.trimble.com/terrasync.shtml.

Which version of ArcPad is required for the GPScorrect extension?

The Trimble GPScorrect extension can be used with ESRI ArcPad software version 7.0 and later.

What field computers does the GPScorrect extension require?

Please see ArcPad system requirements, found on http://support.esri.com.

What operating systems does the GPScorrect extension require?

The GPScorrect extension runs on the following platforms:

- A Pocket PC or Handheld PC 2000 running:

  - Windows Mobile® version 5.0 software
  - Windows Mobile version 6 operating system
  - Windows Mobile 2003 software
  - Windows® CE .NET operating system (version 4.2 or later)
- Windows 2000 operating system
- Windows XP operating system (Home Edition, Professional Edition, and Tablet PC Edition)

Where can I find more information on the GPScorrect extension, GPS Pathfinder Office software, and the GPS Analyst extension?

Datasheets and other technical information for these products are available on the Trimble website at www.trimble.com.