Trimble GPS Analyst

Extension for ESRI ArcGIS software

Holly Urbain
Seiler Instrument

Trimble

GPS Analyst Functions

- Field
  - Data collection
  - Navigation
  - Update

- Office
  - View, Edit
  - Process
  - Analyze
  - Validate
  - Check out and in

Trimble

What is the GPS Analyst extension?

- An ArcGIS Desktop extension that allows you to work directly with GPS data directly inside ArcGIS

Trimble

Why use the GPS Analyst extension?

- Maximize the accuracy of your GPS data
  - Differentially correct in ArcGIS with Trimble's proven correction engines
  - Store GPS metadata in the geodatabase

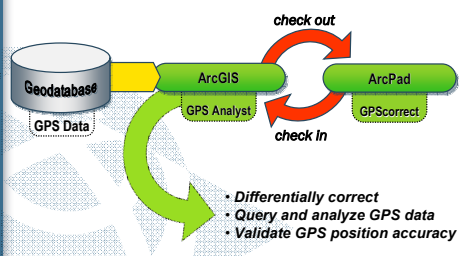
Trimble

Why use the GPS Analyst extension?

- Improve field-to-office workflow
  - Collect features and GPS data directly into the geodatabase with Trimble or NMEA receivers
  - Check GPS data directly in and out of the geodatabase
  - View, edit, query and analyze GPS data alongside existing GIS layers

Trimble

How does it work?



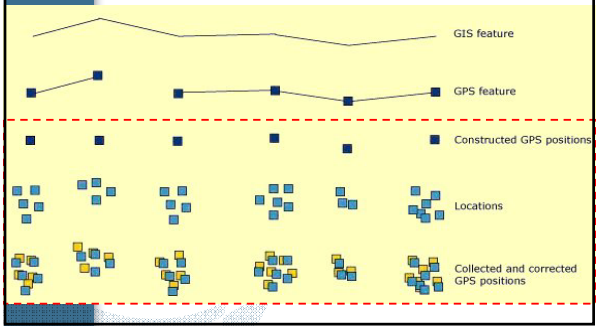
Trimble

GPS Analyst extension data model

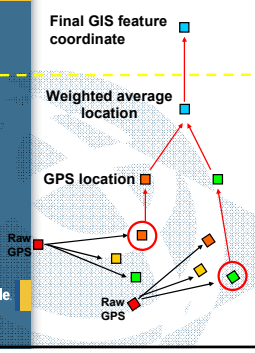
- **ArcGIS features are 'built' from underlying GPS positions**
  - **A single location is selected for each epoch of GPS data**
  - **Multiple locations can be averaged to construct a position**
  - **Positions are built into the GIS feature**

Trimble

GPS Analyst extension data model



Example- average point/ vertex



GIS feature constructed from GPS feature.

Multiple GPS locations averaged to form GPS feature

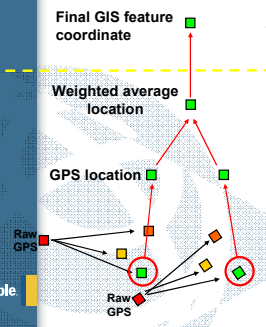
One position is selected as the GPS location based on Build settings (*most accurate*, most recent, etc)

Each epoch of GPS data can have multiple corrected locations

One corrected position for each GPS session (in this case 3 separate sessions)

Trimble

Example- rebuild using *most recent*



GIS feature constructed from GPS feature.

Multiple GPS locations averaged to form GPS feature

Most recent position is selected as GPS location

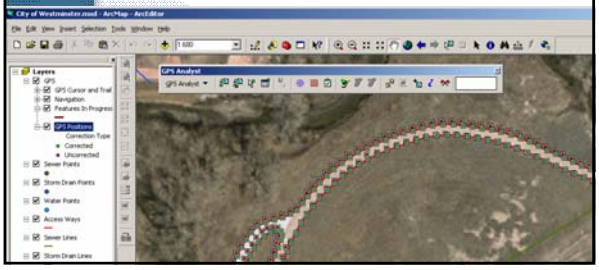
Each epoch of GPS data can have multiple corrected locations

One corrected position for each GPS session (in this case 3 separate sessions)

Trimble

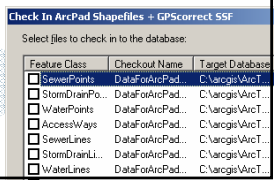
Key features

- View, edit, and analyze GPS data directly inside ArcMap



Improve productivity

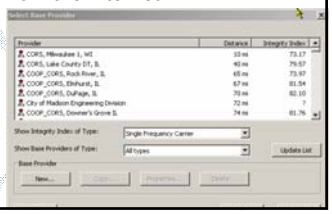
- Eliminating extra file conversions
  - Direct check-out and check-in of data from ArcPad + Trimble® GPScorrect™ extension for ESRI ArcPad
  - Import and export files from TerraSync™ in ArcCatalog



Trimble

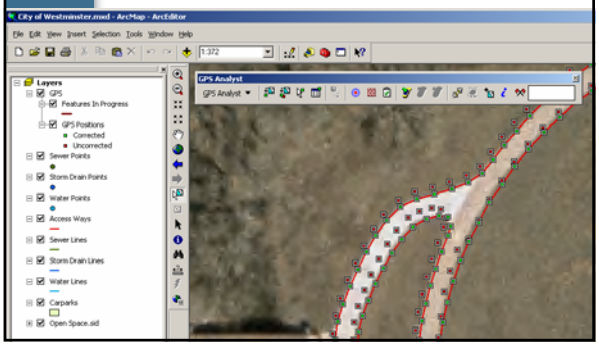
Postprocessing

- Improve GPS position accuracy
  - Using Trimble's proven differential correction engines
  - With automatic base file search and download from the Internet



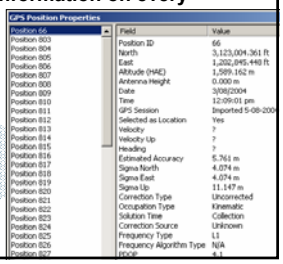
Trimble

Why postprocess your data?



Quality data

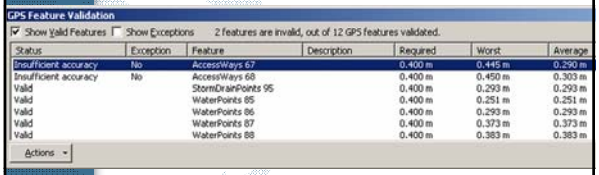
- Have confidence in the quality of your data
  - Store detailed information on every GPS position



Trimble

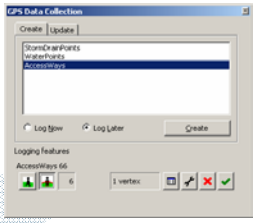
User GIS requirements

- Validate to ensure features meet your required accuracy
  - Run validation on GPS positions
  - Rebuild features that do not meet the accuracy requirement



Data collection tools

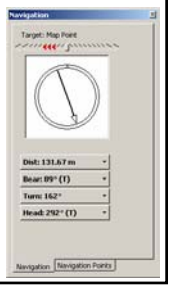
- Take the power of ArcGIS to the field
  - Access full geodatabase capabilities in the field
  - Log GPS data, features, and attributes directly to the geodatabase
  - Use familiar ArcMap tools in the field



Trimble

Navigation in the Field

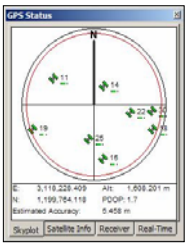
- Using GPS to find existing features
  - For inspection or maintenance
  - For attribute and position verification or update
  - Easy to use direction dial and lightbar



Trimble

GPS status

- Comprehensive GPS status display screens
  - GPS satellite information
  - Real-time status
  - Receiver status



Trimble

GPS Analyst Overview

- Store detailed information on every GPS position linked to GIS features in a geodatabase
- Import and Export GIS and GPS data that is in the Trimble SSF file format
- Import, check out and in GIS and GPS data collected using ArcPad and the Trimble GPScorrect extension for ESRI ArcPad
- Eliminate extra file conversions

Trimble

GPS Analyst Overview

- Collect GPS data in the field using GPS receivers with ArcGIS
- Navigate in the field using GPS within ArcGIS
- Improve GPS position accuracy by Differentially correcting data directly within ArcGIS
- Validate and rebuild GPS derived features to ensure estimated accuracy meet your accuracy requirements

Trimble

GPS Analyst Toolbar

- **Optional toolsets can be enabled/ disabled:**
  - Office: editing and analysis tools
  - GPS Correct: check-out/check-in features
  - Field: receiver, data collection, navigation tools, and GPS status information

Trimble

GPS Analyst Overview

- **View, edit, collect, check out and in, process, analyze and validate GPS data directly inside ArcGIS**

Trimble

Demonstration (time permitting) and Questions?

Trimble