GeoCollector for ArcPad
A High Accuracy Field Mapping Solution

Andrei Link (Trimble) Rui Ge (Esri)
Overview

- Why accuracy matters
- What is GeoCollector
- GeoCollector workflows
- Steps in a typical project
- Field data collection – best practices
- Real-time and post-processed differential correction
- Demo using ArcGIS and GPS Analyst
- Returning data to the enterprise - best practices
Why high accuracy matters

- Pipeline integrity management
- Water network modeling
- Weed management
- Delineation mapping
- Transmission line optimization
- Corridor mapping
- Land valuation
GeoCollector – High Accuracy GPS solution

- **Trimble GeoExplorer 6000 series device**
  - High productivity hardware platform
  - High accuracy GPS data: 10 cm (XH) or 50 cm (XT)

- **Esri ArcPad data collection software**
  - Seamless integration with other Esri products

- **Trimble GPSCorrect for ArcPad software**
  - GNSS receiver control; data collection for postprocessing

- **Trimble GPS Analyst extension (option)**
  - Differential correction directly in ArcGIS for Desktop

- **Support through Esri, hardware+software warranty**
GeoCollector Workflow (Full)

Server - Enterprise Geodatabase

Desktop - Export to Personal Geodatabase
- GPS Analyst Check out
- Copy to device

Mobile - ArcPad
- GPScorrect

Desktop - Copy to Desktop
- GPS Analyst Check In
- Post process

Server - Import to Enterprise Data validation
GeoCollector Workflow (local data only)

Desktop
- GPS Analyst
  - Check out
- Copy to device

Mobile
- ArcPad
- GPScorrect

Desktop
- Copy to Desktop
- GPS Analyst Check In
- Post process
GeoCollector Workflow (no prepared data)

Mobile

QuickProject

GPSCorrect

Desktop

Copy to Desktop

Post process with Toolbox
Seven steps of a successful project

1. Define project goals
2. Prepare your data
3. Send data to the device
4. Configure field settings
5. Collect or update data
6. Receive the data
7. Process the data
Real-time differential correction

- **Accuracy in the field**
  - Good for navigation/in-field verification
  - **Up to 10cm in real-time with GeoXH**
  - Saves time in the office

- **Correction broadcast**
  - WAAS
  - DGPS Beacon
  - Virtual reference station (VRS)

- **Correction receiver**
  - Integrated WAAS in GeoCollector
Post-processed differential correction

• **Accuracy in the GIS**
  - Up to 10cm with GeoXH and H-Star technology
  - Overcomes broadcast outage in the field
  - Can alter processing settings to improve data

• **Base station logging data**
  - Internet access
  - List maintained in GPS Analyst

• **GPS Analyst**
  - Post processing engine
Check in and GPS Differential Correction Demo
Returning data to Enterprise

• You return your *processed* data to the enterprise

• If you have topology rules in enterprise, run data validation on returned data

• Only the features with their corrected GPS coordinates are returned. NOT all the raw GPS data.
Summary

- ArcPad is interface for collecting features
- GPS correct sets up real-time GPS and quality settings and stores the GPS measurement information used to collect the feature geometry
- GPS Analyst provides differential correction and GDB integration provided by tools in GPS Analyst
  - Differential correction enables the accuracy specification for the GeoExplorer!
Resources

- **GeoCollector**

- **ArcPad**
  http://resources.arcgis.com/content/arcpad/10.0/about

- **GPSCorrect**
  http://www.trimble.com/gpscorrect.shtml

- **GPS Analyst**
  http://www.trimble.com/gpsanalyst.shtml
Online evaluation!

- www.esri.com/sessionevals
Questions?
Complementary Sessions on conference DVD

Technical Workshops
• ArcPad—An Introduction
• ArcPad—Introduction to Customizing ArcPad Solutions
• ArcPad—Advanced Customization of ArcPad Solutions

Moderated Paper Sessions
• Trimble—GNSS 101 for GIS
• GPS Technology