Collecting Data on your Phone or Tablet

Tyler Gakstatter
Resource Supply LLC
Lake Oswego, OR

Who can benefit from using smartphones and tablets?

- One-man show to large field crews.
  - Create maps and push them out to many devices without plugging in or docking.
  - Relatively cheap to replace devices.
  - Fleet management tools.

- Field workers
  - Larger/higher resolution screens found in smartphones and tablets.
  - Familiar user interfaces.
  - Easier for field crew to troubleshooting.
  - All-in-one computer. Ability to use email and other productivity tools in the field(where internet is available).

So many devices to choose from. Where to start?

- Windows(Desktop) ($$$)
  - Panasonic Toughpad
  - Handheld Algiz 10X
  - Trimble Yuma
  - Microsoft Surface
- iOS ($$)
  - iPad
  - iPhone
- Android ($)
  - Many different device platforms available
    - Pros: Cheaper, more device options, compatible with all Bluetooth GNSS receivers.
    - Cons: Built to run on many different devices, less stable. Bluetooth connections are known to be finicky at times.
  - Galaxy series tablets
  - Galaxy Series phones

Yuma

iPad

Galaxy Tab

Where can these devices be used?

Everywhere!

- All smartphones and tablets have the option to use a SIM card
  - Windows Mobile devices may or may not be compatible with SIM cards. Setup can be difficult.
  - Manufacturers of rugged devices usually charge extra for the SIM card compatibility.
- Rugged cases now available for most tablets and smartphones
  - True rugged/waterproof cases are available for high volume devices (iPad, iPhone, some Android devices).
- All mobile GIS applications support offline data collection and sync functions.

Why change platforms?

- Limited developers for Windows Mobile and other outdated platforms.
  - Translates to fewer applications and higher cost of custom app development.
- Rugged Windows mobile devices are typically more expensive than smartphones and tablets. $1500+ per device.
- Unusual platform for new field/younger field crews.
- Limited support for cloud applications.
- Few companies continue to support Windows Mobile. Unsupported by Microsoft since January of 2013.
- Higher resolution camera options for collecting photos and videos.
- Bright and high resolution screens for use in the sun. Auto-adjust based on light sensor.

Mobile GIS Applications

Form driven apps

- Form logic
- Aesthetically pleasing
- Easy to use for non-technical field crew
- Pre-made forms available for out-of-the-box use

GNSS driven apps

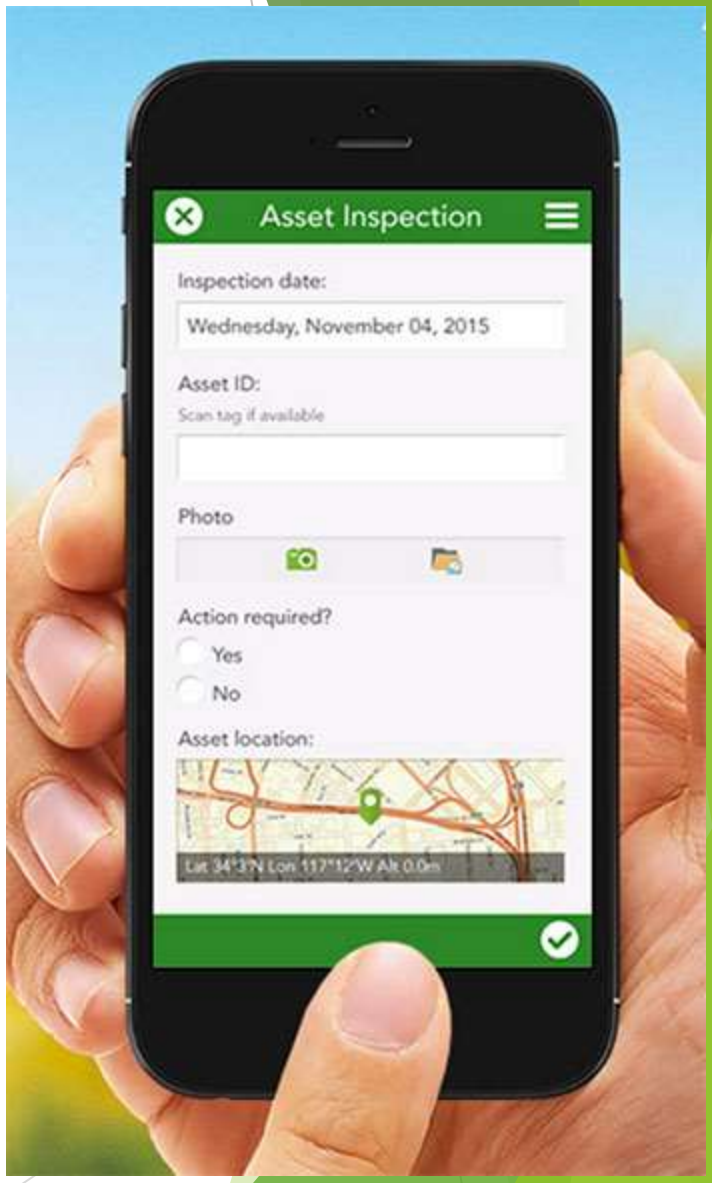
- Focused on obtaining high accuracy positions
- Datum and coordinate system support
- Store GNSS metadata

Form Driven Mobile Applications

- ESRI Survey 123
  - Unique ability to create smart forms using Microsoft Excel.
  - Signature capture.
  - Compatible with ArcGIS Online.
- iGeoTrack
  - Simple smart form creation through web browser.
  - Pre-made forms.
- TerraGo
- Fulcrum

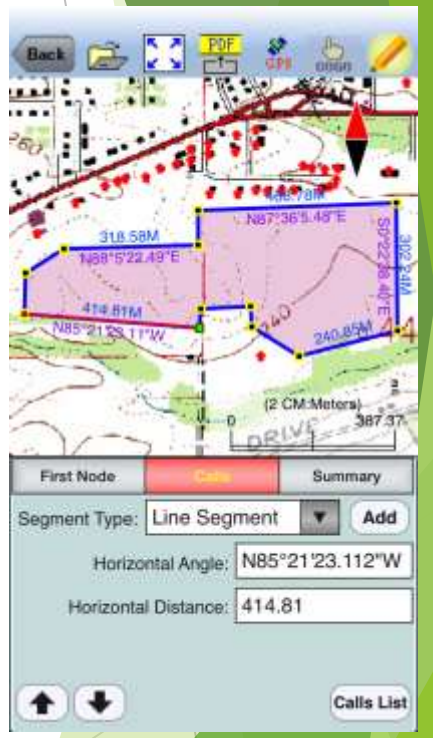
Common form driven features:

Conditional fields
Single select radio buttons
Photo capture
Signature capture
Multi-select check boxes



GNSS Driven Mobile Applications

- ESRI Collector (Free with ArcGIS Desktop)
  - Advanced coordinate system support
  - Geoid adjustments available via post processing
  - Requires maps to be authored on desktop then pushed to devices
  - Stores GNSS attributes
- iCMT GIS (Under $400)
  - Advanced standalone data collection application for iOS only
  - Heavy focus on GNSS
  - No smart forms but flexible data dictionaries
  - Advanced coordinate system support
  - Real-time geoid adjustments provide MSL elevations
  - Stores GNSS attributes
- ArcPad (Windows Desktop only) ($700)
  - Handles many different datums/coordinate systems.
  - Popular solution for Windows mobile. Easy to migrate.
  - Trimble Teraflex (Windows Mobile, Windows, Android, iOS)
    - Trimble's solution for mobile GIS
    - Trimble receivers only
    - Good balance between GNSS and form flexibility



Custom Data Collection Applications

- $50-200/hour for iOS and Android developers
- Native iOS/Android/Windows applications
- HTML5
  - Muli-platform support with same code base.
  - GNSS support.

Contact Information

Tyler Gakstater
GNSS/GIS Sales and consulting

Resourcesupplyllc.com
Tyler@Resourcesupplyllc.com
Office Phone: (503) 547-3756