Trimble as a Technology Partner

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GNSS is Global, Accessible and Accurate

- Tried and tested solution
- Expanding constellations (more coverage)
- Affordable (but at what price)
- Easy to use (if you know what you are doing)
- A point rather than a picture
Comparing data acquisition technologies

- GNSS is one of many technologies
  - Manual digitizing of paper maps
  - Collection of attribute data with pen and paper
  - Scanned paper maps
  - Aerial photography
  - Satellite imagery
  - LIDAR or other 3-D scan imagery

Images courtesy of GLTN

Combining data acquisition technologies

- Integrate digital imagery
  - Use Geo-referenced images
  - Use Geo-referenced archive materials
  - Easier to store and transport in field
  - Download additional data remotely via GPRS communications
  - Transfer of data back to offices via GPRS

- Integrate form filling (attribute collection)
  - Standardise form attributes

- Integrate photographic records
  - Time and Georeferenced
  - Data consolidation
Changes in availability of ‘Accuracy’

- Methods to correct GNSS
  - Raw data (accuracy stated as 30m by DoD, but 5-10m)
  - Post Processed (accuracy dependent on receivers used)
    - Local Base Stations
    - Network solutions
  - Real Time corrections
    - Accuracy
      - Centimetre
      - Decimetre
      - Sub Metre
    - Method of delivery
      - Cell Phones
      - Radio
      - Satellite Broadcast

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**GNSS requirements - Accuracy**

Costs

\[ \text{Accuracy} = \text{Costs} \]

- 10 metre
- 1 metre
- 10 centimetre
- 1 centimetre

Accuracy
GNSS requirements - Accuracy

- What analysis will be made with the data?

To uniquely identify dwelling requires <1m GPS accuracy
Digging up a pipe requires <30cm GPS accuracy

Use of GNSS Data Capture - Summary

- When planning GNSS data collection consider
  - what accuracy you really need and when you need it
  - the day to day conditions such as heat and dust and rough treatment the equipment must withstand
  - the GIS field software that can be used on the device

- GNSS is an established and proven technology used worldwide for GIS data collection
  - Allows better decision making at a lower cost than traditional data acquisition techniques
Rapid mapping tool

- Mapping & surveying
- Light UAS
- Compact camera
- New-generation photogrammetry
- Vision software tools & automation

Fully Automated Aerial Scan
Pre-programmed flight plan
Rapid mapping tool

Thank you for your attention

Come and see us at the Booth in the Exhibition Hall