

Application and Practice of Survey-Grade GNSS Real-Time and Static surveys in the USGS

Day 1 – July 23, 2012

0800-1000

1. Datum Establishment Overview in the USGS
2. Equipment
 - Receivers
 - Antenna and Radio
 - Data Collector
 - Tripods
 - Benchmarks
 - Software
3. Mission Planning and Error Sources
 - Benchmark Assessment
 - Continually Operating Reference Station (CORS) Assessment
 - Ionosphere and Troposphere
 - Multipath
4. Real-Time (RT) Surveys
 - Traditional Single-Base Real-Time Kinematic (RTK)
 - Techniques
 - Base receiver: Reliant vs. Autonomous
 - Quality Assurance
 - Localization
 - Networks
 - Quality Assurance
 - Localization

1015 - 1200

5. Static GNSS
 - Single-base OPUS
 - Quality Assurance

1300 - 1500

6. GNSS Quality
 - Level I Survey
 - Level II Survey
 - Level III Survey
 - Level IV Survey
7. Metadata

1515 – 1700

8. Project Application
 - Integrating total station surveying with GNSS
 - Bathymetric surveys
 - High-water mark surveys
 - Inundation mapping
 - Indirect measurement of peak discharge & modeling
 - Storm-surge sensor surveys

Day 2 – July 24, 2012

0800 - 0900

1. Project Application Continuing – GNSS Level Quality

0900 - 1000

2. Travel and deployment of RT GNSS

1000 – 1200

3. RT GNSS field exercise(s)
 - Localization
 - RT Blunder Check
 - GNSS “as a level”
 - Other

1330 – 1500

4. Network Surveying and Processing
 - Network Control
 - Planning
 - Processing and Adjustment

1530 – 1700

5. Network Surveying and Processing Continuing

Day 3 – July 25, 2012

0800 – 1000

1. OPUS-Projects
 - Introduction
 - Creating a Project

1015 – 1200

- Uploading Data
- Session Processing

1300 – 1500

- Session Processing
- Network Adjustment and Publishing

1515 – 1700

- Session Processing
- Network Adjustment and Publishing

Day 4 – July 26, 2012

0800 – 1000

2. OPUS-Projects – Application with user or example data set

1015 – 1200

3. OPUS-Projects – Application with user or example data set continuing

1300 – 1500

4. OPUS-Projects – Application with user or example data set continuing

1515 – 1630

5. Wrap up discussion regarding RT and Static GNSS; Q&A