RTK ON YOUR SMARTPHONE OR TABLET
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Agenda

- What is RTK?
- What components are required for using RTK?
- Whose RTK base can I use?
- Which smartphones and tablets can you use with RTK?
- Audience Q&A
What is RTK?

- A technique used by a GNSS receiver to provide 1cm real-time precision
- Satellite tracking and initialization time
- Data connection to an RTK base station required
- Used mostly with L1/L2 receivers, but L1-only RTK is possible. The internal GNSS receiver in consumer mobile devices aren’t RTK-capable.
RTK Components

- An RTK-capable GNSS receiver. Not the GNSS receiver inside the smartphone or tablet.
- Mobile device (smartphone or tablet)
- Data collection software
- NTRIP/DIP utility (may be inside Data collection s/w)
- Access to a RTK base
- Wireless data connection to RTK base
Mobile Devices

- Traditional Windows/Windows mobile devices
- Android smartphones and tablets
- iPhone and iPad
- Windows 8/Phone 8
- Operating system wars: Windows, Android, iOS. Why does it matter?
Selecting a Mobile Device for RTK

- Smartphone or Tablet?
- Outdoor readable screen in different conditions (e.g. Temperature)
- App software. NTRIP/DIP software
- Wireless data connection coverage
- Battery life, etc.
- Consumer vs. Industrial?
Data Collection Software

- Data collection software may be a key consideration depending on your workflow.
- Changing landscape due to Android and iOS popularity
- Many Windows/Windows Mobile data collection software haven’t migrated to Android/iOS (eg. ArcPad, SurvCE, etc.)
- New breed of data collection software running across several platforms. E.g. Collector, Fulcrum, Amigocloud, etc.
NTRIP/DIP utility software

- **NTRIP** = Networked Transport of RTCM via Internet Protocol. Menu selection of RTK base mount points.
- **DIP** = Direct IP. No menu selection. Direct to IP address.
- Some data collection software have NTRIP/DIP features built-in to the software.
- Free and low-cost third party NTRIP and DIP software utilities are available so you may use any Location app software with RTK. Even Google Maps for navigating!
NTRIP parameters

Caster:
rtgpsout.unavco.org

Port:
2101

User:
ericpg

Password:

Select mountpoint:
P475_RTCM3 - USA

Start
<table>
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<th>Mountpoints</th>
<th>USA</th>
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<td>ORES_RTCM3 - USA</td>
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RTK Base Availability?

- GPS World article “List of Public RTK Base....”
- Subscription fee vs. no subscription fee
- RTK Network vs. Single baseline
- Wireless data connection
- Setting up your own RTK base?
NTRIP Mount Points for WSRN

IP/address
156.74.250.185

Port
8080

User

Pwd.

Sources
EWAVRSRTCM
EWAVRSRTCM3
SWWAVRSRTCM
SWWAVRSRTCM3
SWWA3NET
KENI

Connect
Get table

Serial
TCP

COM3
What you need to set up your own RTK base to broadcast via Internet

- RTK GNSS base receiver
- Basic computer to run NTRIP/DIP Server software (or some RTK receivers have the feature built-in)
- Reliable internet connection
- Optional network switch or router
- Power supply