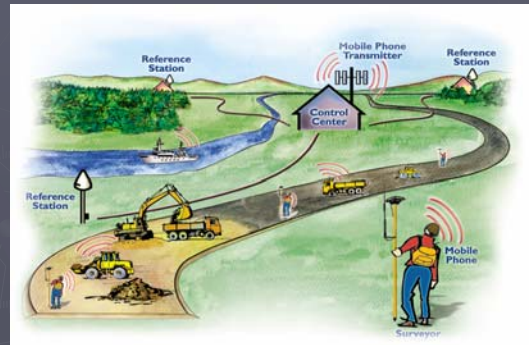


GPS RTK Networks

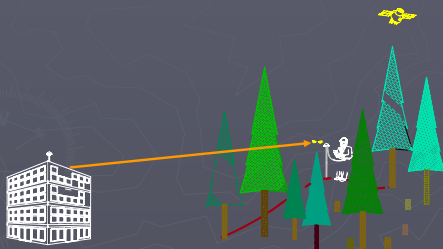
Oregon GPS RTK Network
Partner Meeting
July 14, 2005

GPS RTK Network

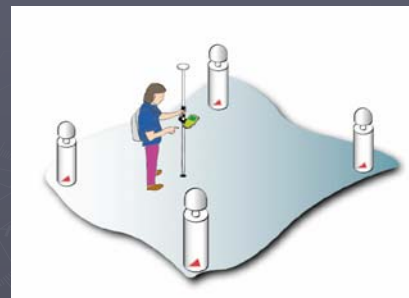


Single Baseline RTK Solution

10 mm + 1 ppm



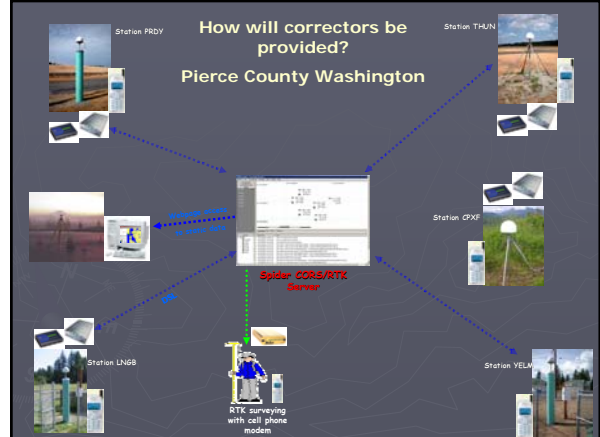
Network RTK Solution



Benefits of a Network RTK Solution

- ▶ Distance dependent errors modeled better
 - Ionosphere delay
 - Troposphere delay
 - Satellite orbits
- ▶ Better accuracy of solution
- ▶ Longer distance RTK range possible
 - 70 Km spacing of base stations

How will correctors be provided? Pierce County Washington



Benefits of Partnering w/ ODOT

- ▶ Using taxpayer money wisely
- ▶ Extend range and accuracy of existing stations
- ▶ Consistent coordinate system and datum for Oregon
- ▶ ODOT quality control & network monitoring
- ▶ ODOT purchase/ operation of network software
- ▶ ODOT maintenance/upgrades of network software
- ▶ ODOT listserv and webpage for network
- ▶ ODOT support for network users
 - Training
 - Technology Transfer
 - User Support
- ▶ Other

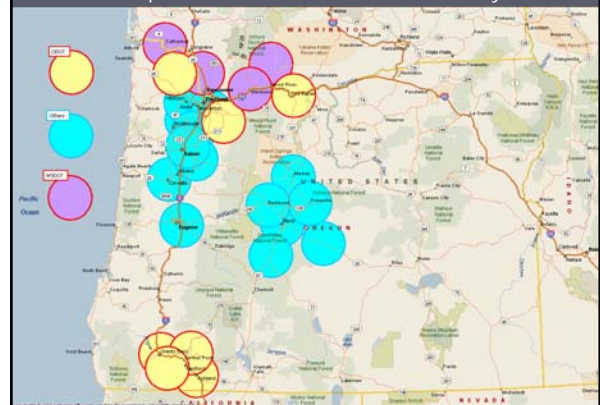
Network Security



Network Security

Authentication: Who connects to server?
Authorization: What is user allowed to do?

ODOT Proposed GPS Reference Station Plan – July 2005



Partner responsibilities

- ▶ Network quality control
- ▶ Network software operation
- ▶ Network software maintenance and upgrades
- ▶ Network listserv and maintenance
- ▶ User support
- ▶ Initial site installation
- ▶ Purchase of GPS equipment at site
- ▶ Internet connectivity/power at site
- ▶ Other

Network Standards

- ▶ Site Selection
- ▶ Monument stability
- ▶ Antenna Mounts
- ▶ Receiver type: L1/L2 with internet port
- ▶ Antenna types: choke ring
- ▶ Other

Site Criteria

- ▶ Satellite visibility: clear view of sky
- ▶ Monument stability
- ▶ Continuous power w/ backup
- ▶ Internet connectivity
- ▶ Lightning protection
- ▶ Station location/spacing
- ▶ Vandal resistance
- ▶ Ease of maintenance
- ▶ Other

Contact

- ▶ <http://egov.oregon.gov/ODOT/HWY/GEOMETRONICS/>
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