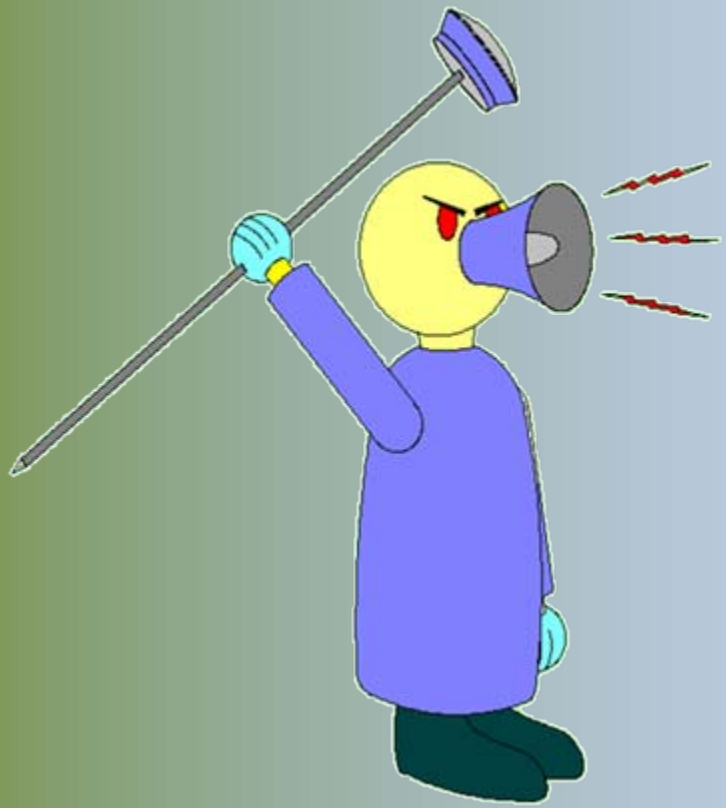
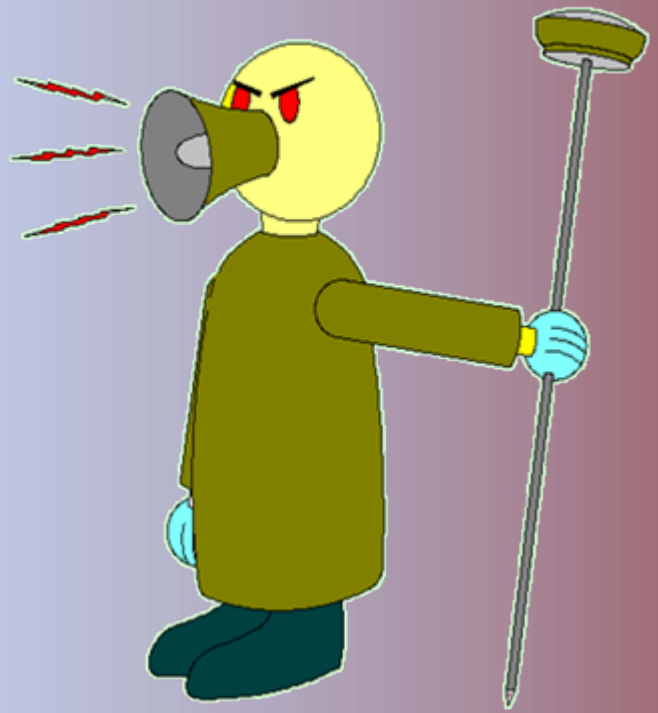
NGS RTN Guidelines:

PLANNING & DESIGN

Pre-plan !



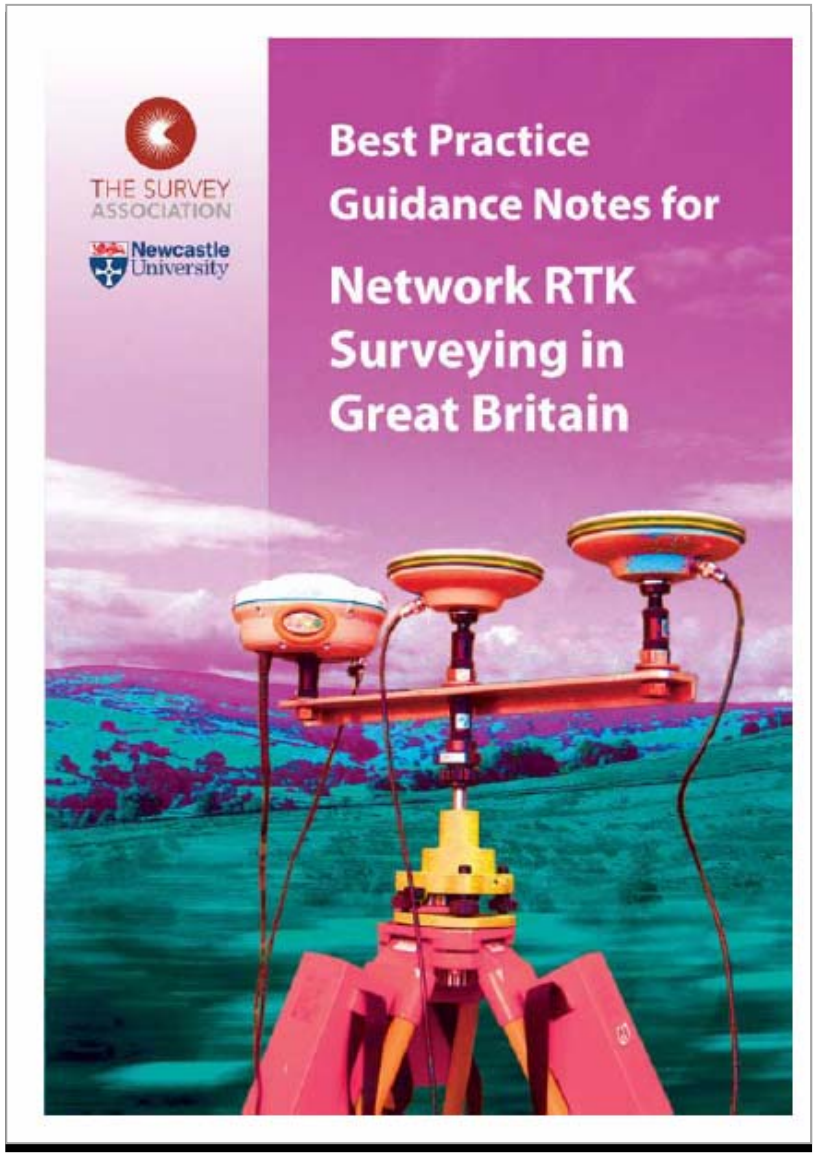


Get er’ done !

Norm for RTK services, content

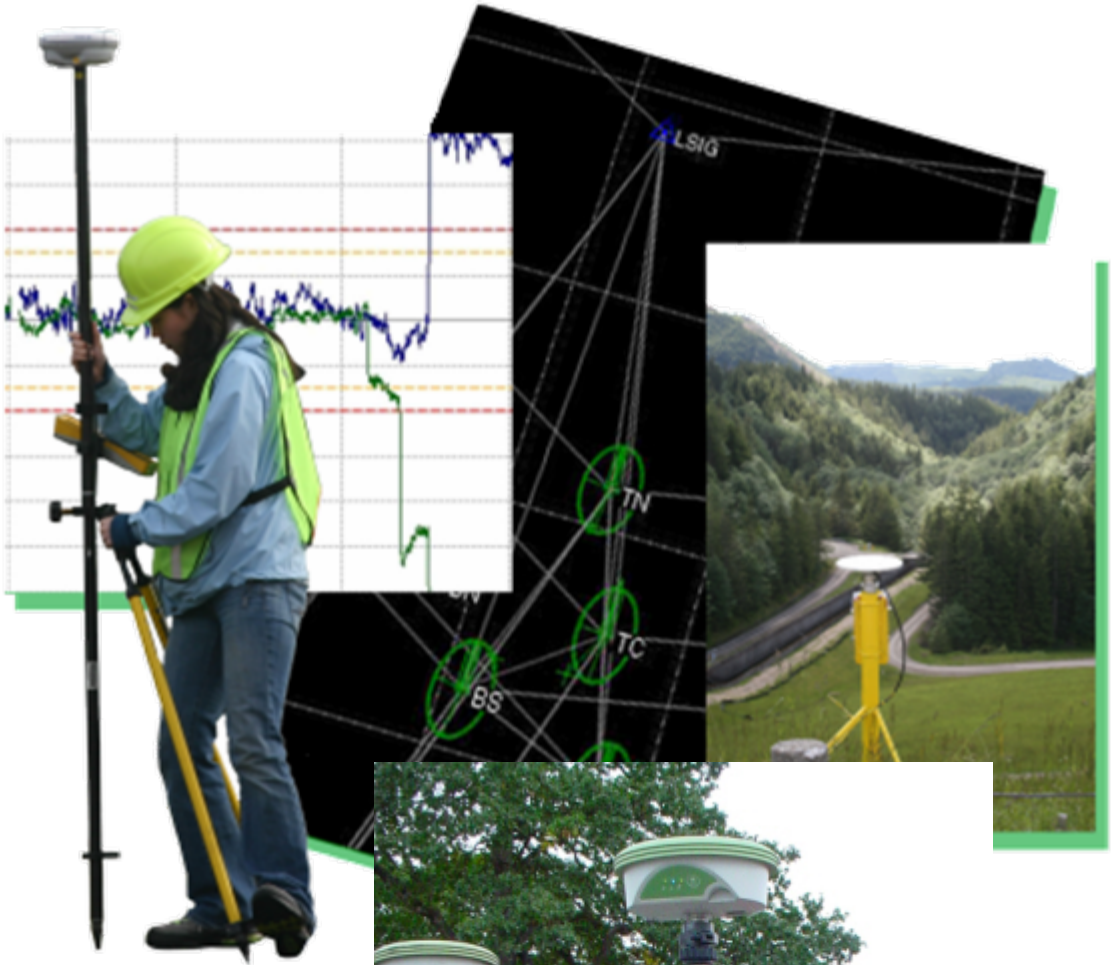
- Requirements to the RTK service provider with respect to:
  - Documentation of coverage area
  - Quality of coordinates for reference stations
  - Obtainable user accuracy, horizontal and vertical
  - Monitoring of accuracy and integrity
  - Distribution of warnings and error messages
  - Availability on weekdays at 98%
  - etc.

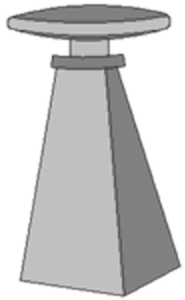
Source: Dr. Anna Jensen, AJ Geomatics – as presented at CGSIC, Sept. 2008

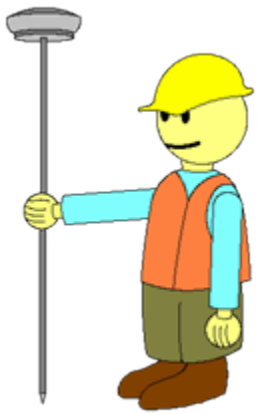


www.tsa-uk.org.uk

Real Time (i.e. Available in Real-Time)

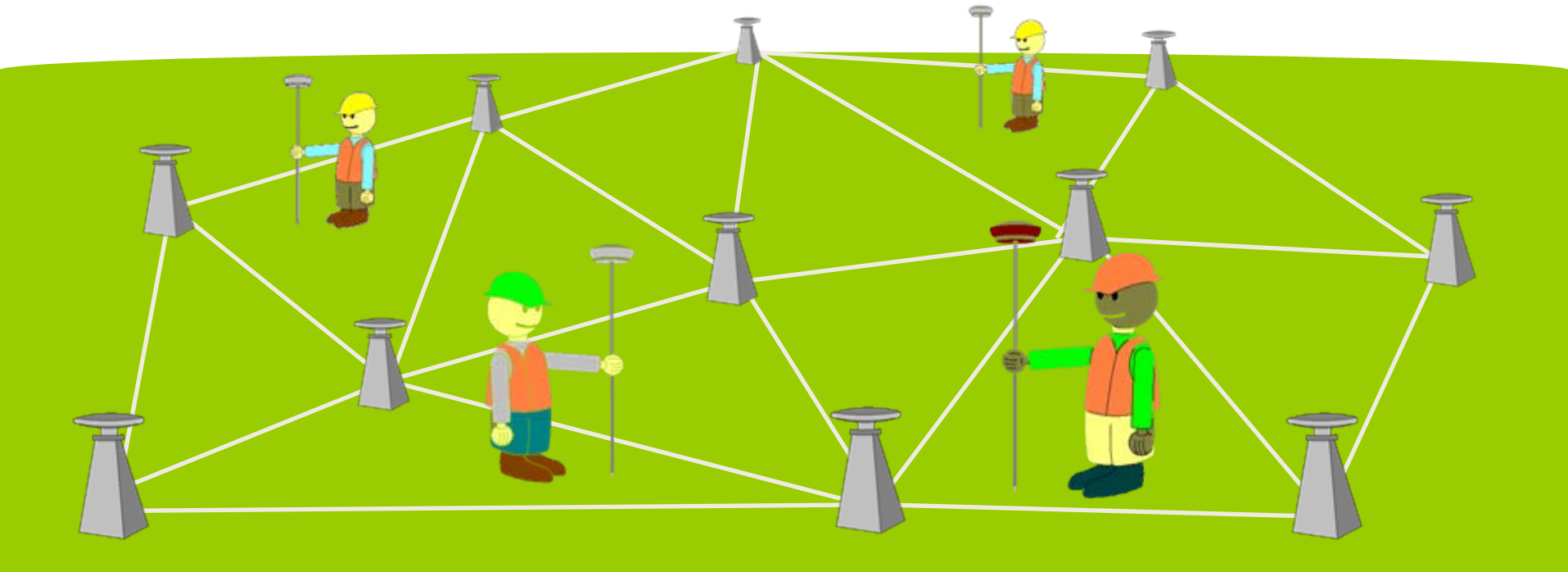






Planning & Design

- Pre-Planning
- Spacing
- Processing Center

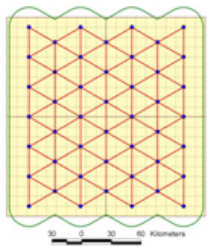


Pre-Planning

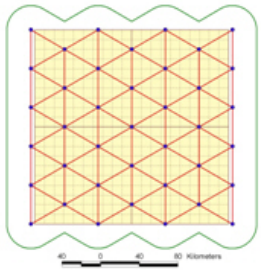
Questions to ask before planning begins:

- Type of RTN
- Needs Analysis
- Cost-Benefit Analysis
- Performance Expectations
- Risks Assessment
- Operations Model
- Support Model
- Product Delivery Goals
- RTN Services
  - Single-Base
  - Network Corrections
  - Server-Side Processing
  - Static Files

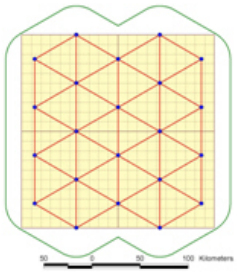
Spacing & Geometry



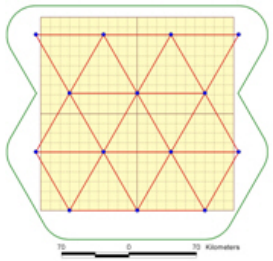
30km – 46 Stations



40km – 39 Stations

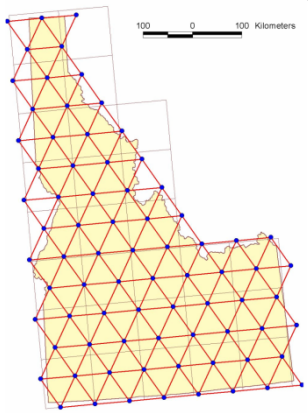


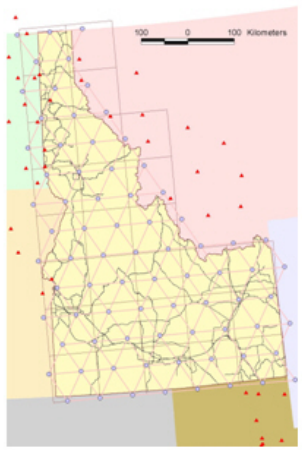
50km – 22 Stations



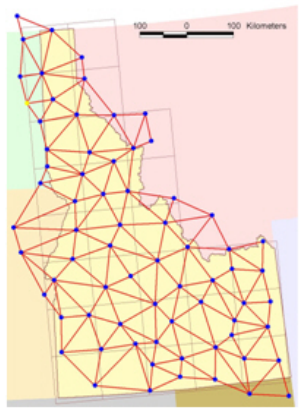
70km – 14 Stations

- Theoretical Spacing
- Siting Limitations
- Phased Implementation
- Use of Existing/External Stations
- Fiducial Stations
- NGS CORS
- Multi-Constellation Stations

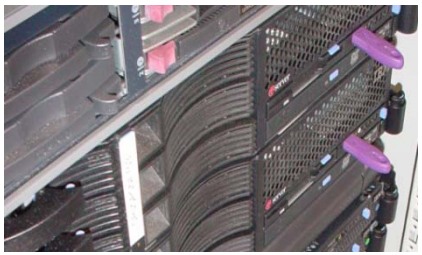




Overlay of Adjacent Network Stations

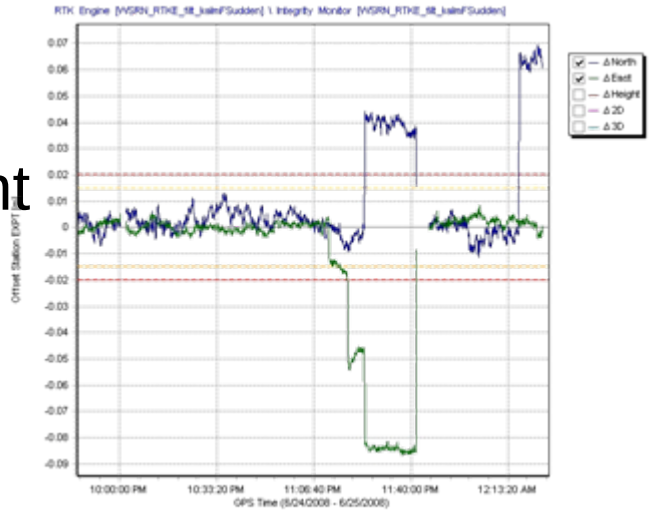


Revised Design – 71 Stations
(50 'intra', 21 'inter')



Processing Center

- Central Processing Center (CPC)
  - Host and Host Site
  - Servers and Arrays
  - Power & Environment
  - Archiving
- Communications
  - CORS to CPC
  - CPC to End-User
  - Redundancy
- Design for Operational Levels
  - Minimal (Tool Style)
  - Full (Utility Style)
- Maintenance and Support
- Network Integrity Monitoring



Doctor L2's D.I.Y. RTN

- Secure a Big Pile of Funding
- Draw Overlapping Circles on a Map
- Stop by the Hardware Store
- Start Building Stations near the Center of them Circles
- Fly-tie some Coordinates from the Nearest Monument
- Press the Button

Or, make several vendors submit designs then choose one with the coolest graphics…

- Everything will be OK as long as you do not answer the phone…

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