Project Adapted Network-RTK for road construction projects

Swedish Road Administration
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Agenda

- Introduction

- Project Adapted Network-RTK

- The pilot project for Project Adapted Network-RTK
  "BanaVäg I Väst"

- Information-VIDEO

- Sum up

- Future of PA-NRTK
SRAs seven regions
Tasks - regional offices

• The regions attend to daily client contact with regard to community development, planning, investigations, sectoral and public authority issues, and running operations and maintenance.

• The regional offices are in charge of the bulk of business projects carried out in the respective regions.
  ✓ Eg. road construction projects
Project-adapted Network-RTK (?)

• A “project densification” of the SWEPOS network of reference stations for GNSS
  – Distance between reference stations about 10km

• “Services”
  – Project adapted services for network-RTK real-time positioning
  – Projekt adapted post processing service for static GNSS-surveys
  – Support services; SMS-alarm, webb-monitoring,…

• Surveillance by the SWEPOS national command centre
  – Continuous quality control
  – Monitoring of data distribution
  – Technical support
PA-NRTK implementation area
Project Marieholmsförbindelsen
A new tunnel connection under the river "Göta älv" and development of the main state roads in central Gothenburg.
Project "BanaVäg I Väst"

E45

Göteborg - Trollhättan
The pilot project for Project-adapted Network "BanaVäg I Väst"

- A joint project between the Swedish Road Administration and the Swedish Rail Administration.
- Dual-carriageway road and double track railway.
- PA-NRTK has so far been used for the project stages between "Agnesberg-Älvängen".
Current configuration of reference stations in use

Established reference stations

- Tjurholmen
- Mareberget
- Silon i Surte
- GP-huset
- Bagaregården
Final configuration of reference stations

Reference station set up in progress

🌟 Krusetorp
🌟 Torsåsen
🌟 Göta
🌟 Lödöse

Established reference stations

🌟 Tjurholmen
🌟 Mareberget
🌟 Silon i Surte
🌟 GP-huset
🌟 Bagaregården
Project adapted Network-RTK
Why?

- Geotechnical conditions
- Control of the geodetic grid
- A geodetic infrastructure that is used in all phases
Information-VIDEO
Sum up

• All actors are using the same survey grid
• PA-NRTK offers the contractors an excellent infrastructure suited for steering construction equipment.
• The system is able to be in operation 24-hours a day
• Grid points are unaffected of ground movement in the building area
• Conditions for model-based construction has improved.
Sum up

- Project conditions also has improved in terms of
  - cost
  - time savings
  - control and follow-up
Future of PA-NRTK (SRA)
Future of PA-NRTK

• PA-NRTK a future “standard” for major construction projects within SRA

• Possible future projects with PA-NRTK
  – Project ”Marieholmsförbindelsen”
  – Project ”Förbifart Stockholm”
  – Kiruna
Future development possibilities

- GNSS-systems
  - GPS
  - GLONASS
  - Galileo

- Methodology
  - Combination of satellite positioning with traditional terrestrial surveying techniques
Thank You for Your attention!

Questions?

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