

Nordic GNSS Data Analysis Centre

Status report January 17 th ,2008

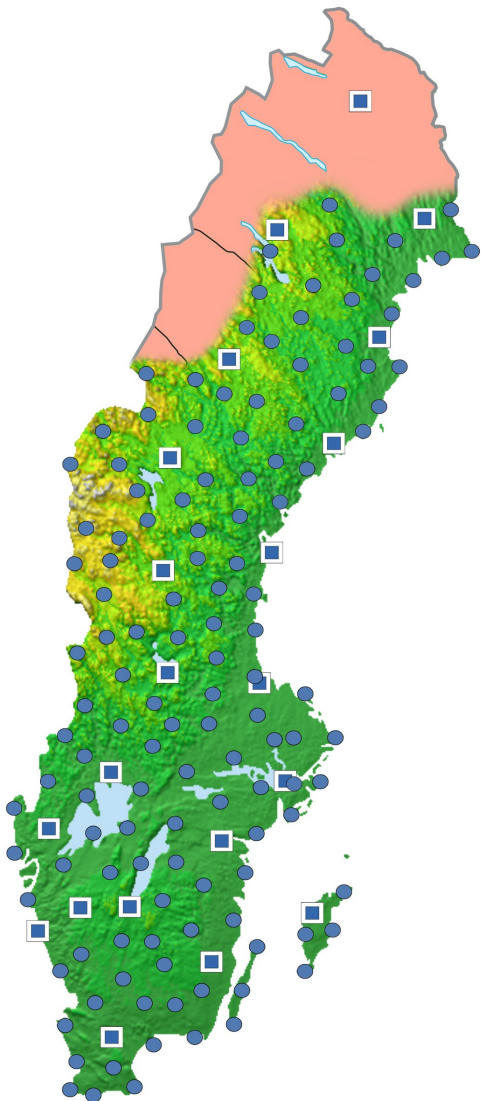
Hans Andersson



Nordic GNSS Data Analysis Centre

- GNSS data processing at SMHI to obtain tropospheric delay estimates
- Data from Denmark, Finland, Iceland, Norway, and Sweden and surrounding countries (IGS stations)
- Operational at SMHI autumn 2007
- Builds on PPP strategy (10 h data window) and imported orbits and clocks
- Satellite orbits and clocks from GFZ Potsdam (alt. JPL Pasadena)
- Results are transferred to a server at UK MetOffice as part of EGVAP and stored locally for use in HIRLAM

SW EPOS



National network of 142 (2007-09-01)
permanent reference stations:

- Established 1992-93
- Operated by National Land Survey
- At least 2 receivers per station (21 stations)
- Identical antennas and configuration
- Real time connections to all stations
- Reference system (SWEREF)
- GLONASS-receiver at 6 stations
- RTK and DGPS data in RTCM-format
- L1/L2-data in RINEX-format
for post processing

GPSnetDenmark

2008-01-10



Permanent network of 26 stations in Denmark:

- Established 2000
- Trimble receivers
- Identical installations
- Real time connections to all stations
- Common reference system
- RTK and DGPS data in RTCM-format
- L1/L2-data in RINEX-format for post processing

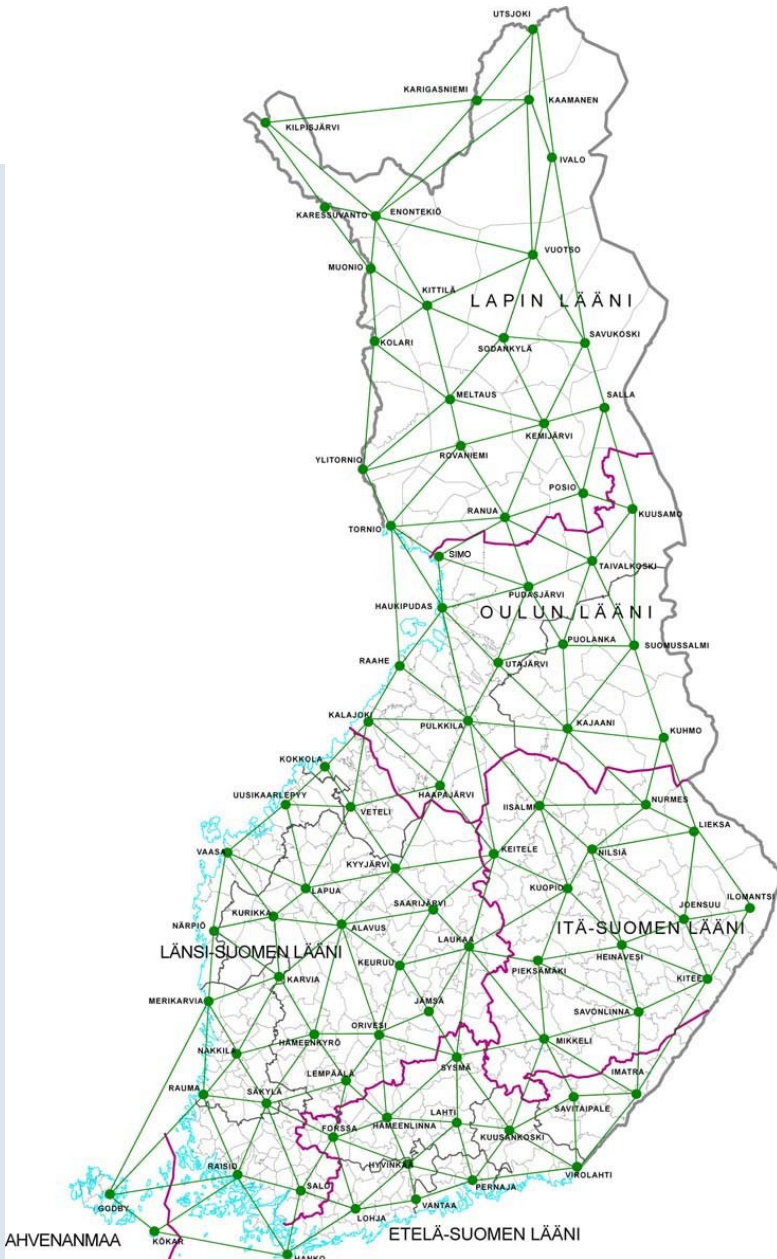
(+ Bornholm)

Geotrim Finland

2008-01-10

Permanent network of 84 stations in Finland:

- Established 2000
- Trimble receivers
- Similar installations
- Real time connections to all stations
- Common reference system
- RTK and DGPS data in RTCM-format
- L1/L2-data in RINEX-format for post processing



SATREF (Norway) status

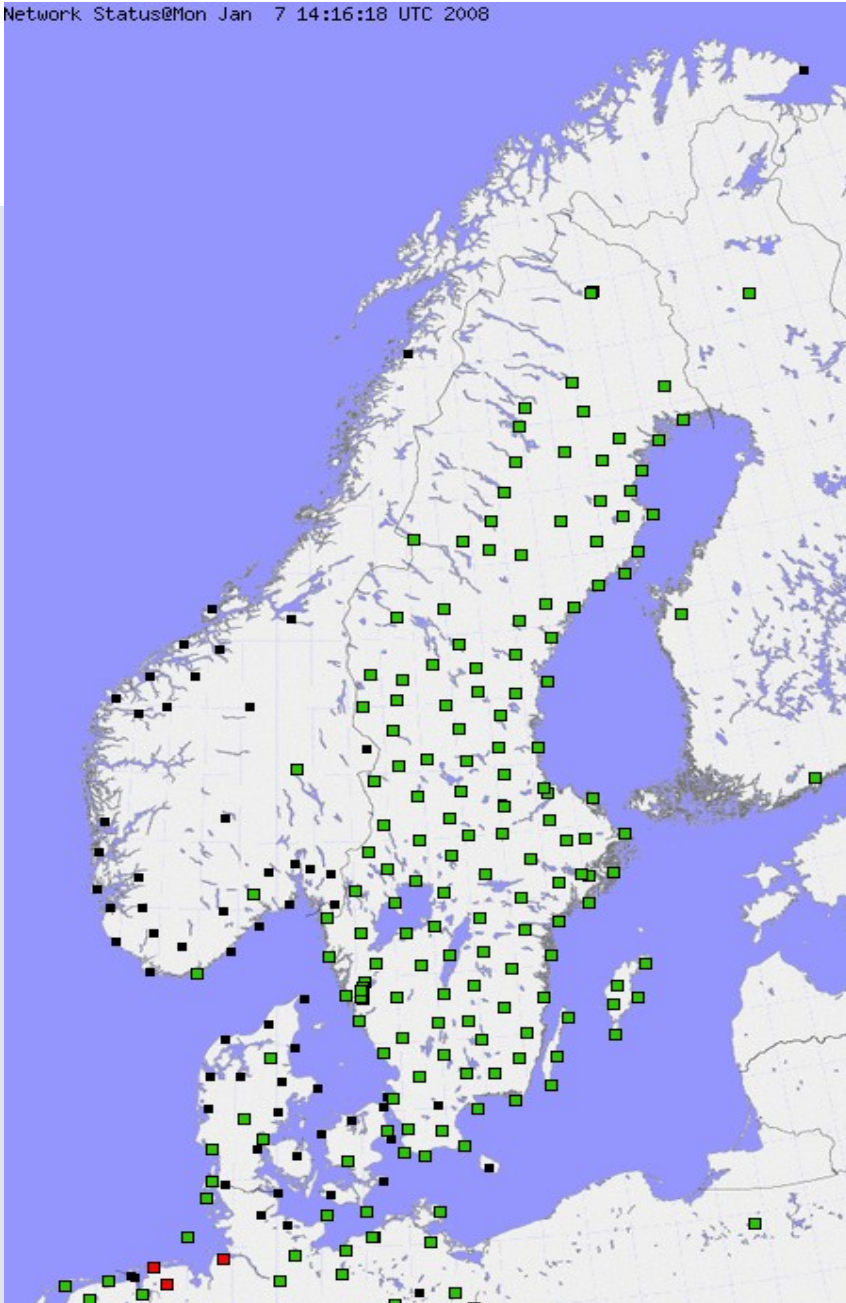
2008-01-10



- Data from 4 stations fetched by SMHI from server at Statens Kartverk in Norway.
- The rest of the stations is not reachable.
- Contacts with SATREF operational center .

E – GVAP Nordic GNSS

2008-01-07



Nordic GNSS Data Analysis Centre

Status January 2008

Final test running on two parallel processors (capacity at least 150 stn each)

	<u>Now</u>	<u>Possible</u>
Processor 1: Sweden, Swepos stations	142	142 + ~20
Processor 2: International data from		
Denmark	26	6 + 26
Finland	4	12 + 86
Iceland	2	4 + 16
Norway	4	4 + 30-50 oil
platforms in the North Sea		included
IGS	20	20
UK	8	8
Today:	193 stations available	
Middle of 2008	< 277 stations	
End of 2008:	~300 stations	

Routines run by SMHI every hour

Part 1 – Satellite Orbit & Clocks:

- get_orbits: Ultra rapid orbits & clocks from IGS or GFZ
- (~5 minutes CPU, Linux Server)

Part 2 a - PPP Analysis:

- get_SWEPDS (Sweden)
 - qm4ppp: Editing and quality check
 - point_1h: Estimation of trop. parameter using PPP
- (~ 25 minutes CPU for 150 stations on a standard, Linux Server)

Part 2 b - PPP Analysis:

- get_satref (Norway), get_finnnet (Finland), get_IGS (Europe)
 - qm4ppp: Editing and quality check
 - point_1h: Estimation of trop. parameter using PPP
- (~ 20 minutes CPU for 120 stations on a standard, Linux Server)

Part 2 c - PPP Analysis:

- get_dannet (Denmark)
 - qm4ppp: Editing and quality check
 - point_1h: Estimation of trop. parameter using PPP
- (~ 10 minutes CPU for 26 stations on a standard, Linux Server)

Part 3 – Combined ZTD and Quality

- costprod_file: Merging the solutions and delivery of "cost-file"
 - ftp SMHI and UKMO (COST-server)
- (~2 minutes CPU, Linux PCServer)

Start

2. Routine : Part 1 + Part 2a H + 8

4. Routine : Part 2b H + 25

6. Routine : Part 2c H + 30

8. Routine : Part 3 H + 40

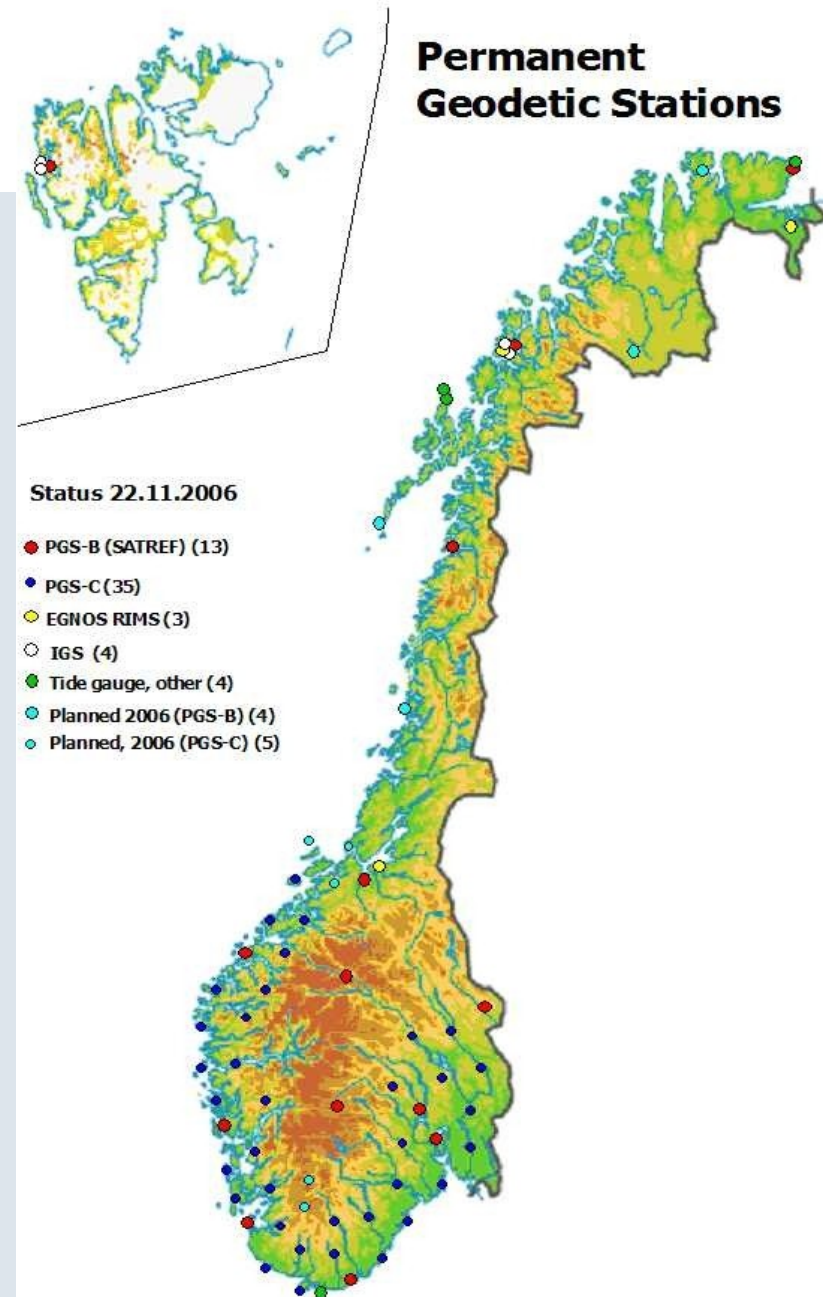
Still problems with...

... data from Onsala server (chalmers). Sensitive nights and weekends.

...data from the Trimble network in Denmark
– Data arrives late but when it's coming the quality is good.

...data from the Geotrim network in Finland
– Contact established. Testing going on. Soon in operation.

...data from Norway
– Jan Johansson has made several trips to Norway since last summer. Not yet fruitful however.



Measures to be taken this winter and spring.

- Reduction of servers involved.
- Connections directly between countries involved.
- Better alarm system in SMHI and between countries.
- Better report methods .
- Monitoring and supervision methods improvement.
- More stations

