



NORDISKA KOMMISSIONEN FÖR GEODESI

Ordförande
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The NKG Steering Committee on the on-going sub-projects for "NORDIC POSITIONING SERVICE"

Minutes of the 17th meeting

Klekken, Norway - February 26-27, 2004

PRESENT

Denmark: Sigvard Stampe Villadsen
Bo Madsen
Finland: No representative
Norway: Bjørn Engen
Rune Hanssen
Sweden: Bo Jonsson
Andreas Engfeldt (secretary)

ITEM 1: OPENING OF THE MEETING

Bjørn Engen welcomed everybody to the 17th meeting of the NKG Steering Committee on the on-going sub projects for "Nordic Positioning Service".

The Steering Committee agreed to the following agenda for the meeting

1. Opening
2. Minutes from the 16th Steering Committee meeting on 10-11 November in Gävle and review of the action list
3. Situation for the institutions
4. Activities before 1 July 2004
 - o Real Time Service with dm accuracy
 - o Computer network
5. Tasks from the Presidium

Agreed action: The Presidium asks the project A Nordic Positioning Service to give a status report of the project at the next meeting of the Presidium in May, 2004 and to develop a financial plan including a future vision.

Agreed action: The Presidium asks the project Nordic Positioning service to look into the EUEREF real-time distribution of GPS-data.

6. Reports from the latest Directors General meeting
7. Current status of national Network-RTK services
8. Activities after 1 July 2004
 - A0 – Station database and Standard for reference stations
 - A1 – Web (post-processing data)
 - C1B – Real time service with cm accuracy and evaluation of RTK algorithms
 - A2 – Automated Computation Service
 - C1A – Distribution channel for RTK
9. EGNOS
10. Summary of Action list
11. Next meeting and closing

ACTION LIST:

- Three documents should be written for the Presidium and finished latest the 3rd of May 2004: Status plan, financial plan, future visions (ITEM 4). Stampe will start the writing. A proposal will be distributed to the members of the Steering Committee in week 16
- SK and LMV shall have a dialogue about how to place the upcoming permanent reference stations along the border between Norway and Sweden.
- Each project responsible shall make a project plan with milestones for deliverables (reports etc) and submit to Andreas Engfeldt. It shall then be approved by the Steering Committee. Andreas shall follow up and receive the various deliverables, compile them and deliver them to the steering committee.
- NorDPOS corrections shall be available for national distribution in each country based on data from Nordic base stations and based on a common Nordic communication network. The responsible for each NorDPOS-activity shall decide when to start the activity.
- Testing of NorDPOS in Denmark by means of a monitor station at KMS (Starts **March 1, 2004**, Responsible: Casper Jepsen, KMS).
- A station data availability report shall be delivered to the steering committee each month. The first report shall be delivered **before March 29, 2004** (Responsible: Per Erik Opseth, SK).
- Final test of the Swedish delivery of data. Stability tests (**before May 3, 2004**. Responsible: Peter Wiklund).
- Develop a Javad/Topcon - Ribex converter (**before April 1, 2004**. Responsible: Per Erik Opseth).
- Each partner shall provide a data delivery service with an availability of 90% per month. The coordinators shall deliver an availability report

each month to the steering committee (**Start: June 1, 2004**. Responsible: Each coordinator).

- A reference/coordinator group for NordRTK shall be established. The group shall exchange information about operation and performance of the network RTK in general and GPSNet in particular. Point of contact: Per Erik Opseth SK, Peter Wiklund LMV, Casper Jepsen KMS. First meeting **before July 1, 2004** (Responsible: Steering committee).
- The Swedish and Danish stations shall be classified **before October 1, 2004** (Responsible: Bo Madsen).

ITEM 2: MINUTES FROM PREVIOUS MEETING

Minutes from the 16th Steering Committee meeting on November 10-11, was approved after the following remarks were given:

REVIEW OF THE ACTION LIST FROM THE MEETING OF THE STEERING COMMITTEE ON JUNE 3 AND WHAT HAS HAPPENED

- Three documents should be written for the Presidium and finished latest the 3rd of May 2004: Status plan, financial plan, future visions. Stampe will start the writing on the Status plan.

Action carried out: See ITEM 5 in these minutes.

- The Javad format to be used should be defined (before 1/12-2003). Statens Kartverk are responsible together with Lantmäteriverket.

Action carried out: The Javad format for GPS raw data has been defined.

- A Javad-Ribex converter should be developed by Statens Kartverk (before 1/4-2004).

Action carried out: The work has not started yet but it is planned to be completed before April 1st.

- All data for the Nordic dm service will be sent to Hønefoss and the software will be run from there. This should be finished in the end of November.

Action carried out: Data has been sent to Hønefoss since November last year, but all Swedish data has not been received. There seems to be some work to do to locate the reasons for the interruptions in the data stream.

- DPOS (Network-DGPS) should be working in Denmark as soon as possible. Rune will take the initiative for a telephone meeting between KMS and SK.

Action carried out: Because of the problems with the Swedish data the service has not started yet (see ITEM 4).

- Andreas will send a coordinate list of the Swedish stations to Rune.

Action carried out: The coordinate list has been sent and received.

- Until next meeting every country will classify at least two types of reference stations in their own country.

Action carried out: See item 8 in these minutes

- Per Erik Opseth will distribute the document "Satellittbasert posisjonsbestemmelse" to the Steering Committee.

Action carried out: It has been distributed to the members of the Steering Committee.

ITEM 3: SITUATIONS FOR THE INSTITUTIONS

Information was exchanged concerning the status for the geodetic activities and the reorganisation of the National Mapping Authorities in Denmark, Norway and Sweden

ITEM 4: ACTIVITIES BEFORE 1 JULY 2004

The minutes for this ITEM can be found in Appendix A.

Here is though a summary. All important dates are marked with extra bold type:

- Each sub-project responsible shall make a project plan with milestones for deliverables (reports etc) and submit to Andreas Engfeldt. It shall then be approved by the Steering Committee. Andreas shall follow up and receive the various deliverables, compile them and deliver them to the steering committee.
- A station data availability report shall be delivered to the steering committee each month. The first report shall be delivered **before March 29, 2004** (Responsible: Per Erik Opseth, SK).
- NorDPOS corrections (Wide area DGPS corrections) shall be available for national distribution in each country based on data from Nordic base stations and a common Nordic communication network. The

responsible for each national NorDPOS-activity shall decide when to start the activity.

- Testing of NorDPOS in Denmark by means of a monitor station at KMS (Starts **March 1, 2004**, Responsible: Casper Jepsen, KMS).
- Testing distribution in Denmark on DAB (Responsible: Casper Jepsen, KMS).
- Improve NorDPOS in North Norway (Responsible: Per Erik Opseth, SK).
- Provide a NorDPOS prototype service in southern Sweden (Responsible: Peter Wiklund, LMV).
- Provide a NorDPOS Service in Skagerak (Responsible: Casper Jepsen, KMS).
- Provide a NorDPOS prototype service in northern Sweden (Responsible: Peter Wiklund, LMV).
- A reference/coordinator group for NordRTK (Network-RTK in the Nordic area) shall be established. The group shall exchange information about operation and performance of the network RTK in general and GPSNet in particular. Point of contact: Per Erik Opseth SK, Peter Wiklund LMV, Casper Jepsen KMS. First meeting **before July 1, 2004** (Responsible: Steering committee).
- Guidelines for optimal Network-RTK/single station RTK use concerning reliability and efficiency. SK-preliminary guidelines have been distributed to the steering committee. Ensure that information is exchanged between the partners. (Responsible: Steering committee).
- Exploit Nordic stations for an optimal distribution of base stations with regards to national services. Ensure that plans for future expansion are exchanged between the partners. (Responsible: Steering committee).
- Nordic Positioning Network: Make data available from all Nordic stations in real-time in the pre-defined formats to all respective institutions.
- Final test of the Swedish delivery of data. Stability tests (**before May 3, 2004**. Responsible: Peter Wiklund).
- Develop a Javad/Topcon - Ribex converter (**before April 1, 2004**. Responsible: Per Erik Opseth).
- Each partner shall provide a data delivery service with an availability of 90% per month. The coordinators shall deliver an availability report each month to the steering committee (**Start: June 1, 2004**. Responsible: Each coordinator).
- Permanent GNSS station standards: Test of the classification system based on the existing stations and an evaluation of the system resulting in recommendations /changes (Responsible: Bo Madsen).
- Relate the standard to the different major requirements

- The Swedish and Danish stations shall be classified (**before October 1, 2004**. Responsible: Bo Madsen).

ITEM 5: TASKS FROM THE PRESIDIUM

Agreed action: The Presidium asks the project A Nordic Positioning Service to give a status report of the project at the next meeting of the Presidium in May, 2004 and to develop a financial plan including a future vision. Stampe agreed to start with the writing and distribute a proposal during the week 16.

Agreed action: The Presidium asks the project Nordic Positioning service to look into the EUREF real-time distribution of GPS-data.

Sweden will send real time data from one or two SWEPOS-stations to EUREF. Norway won't send any real time data to EUREF. Denmark has not decided what to do yet.

ITEM 6: REPORT FROM THE LATEST DIRECTORS GENERAL MEETING

The next Directors General meeting will be in Långebyn on Svalbard on June 28-30. Because of that there are two new Directors General since the last meeting, the information from the Nordic Positioning Service will be very brief.

ITEM 7: CURRENT STATUS OF NATIONAL NETWORK-RTK SERVICES

The Steering Committee agreed on having a co-operation with the planning of reference stations along the border between Norway and Sweden.

Sweden:

The SWEPOS RTK-service was introduced on January 1. At moment there are about 180 subscriptions. Another Network-RTK project, "MittOst", started a few weeks ago, which ties together the RTK-service areas in Västergötland and also includes two new stations in the northwestern part of Småland, see <http://www.swepos.com>.

Denmark:

The single station network, GPS-Referencen, will soon offer its users to choose between a single-station RTK solution (as it has been this far) and a Network-RTK solution.

Norway:

CPOS has now more than 100 users. At moment there are 22 stations, but up

to 20 more are being planned for this year. The areas they are about to be placed in are: Vest Agder, Aust Agder, Trøndelag, Bodö, Bergen and around Mjösa. It was decided that SK and LMV should have a dialogue about how to place the upcoming permanent reference stations along the border between Norway and Sweden.

ITEM 8. ACTIVITIES AFTER 1 JULY 2004

PROJECT A0 - A Nordic standard for reference stations

See Appendix A.

The following projects are pending:

Database for station information

PROJECT A1 - A Nordic Web-site for download of reference station data for post-processing purposes

C1B - Evaluation of available RTK algorithms

PROJECT A2 - An Automated Computation Service

PROJECT C1A - Test of distribution channels for RTK

The diploma work at LMV, which tested GPRS and Internet as distribution channels, also mentioned in the minutes from the 16th Meeting, has now been printed and was distributed to the Steering Committee.

STATUS FOR THE CPOS-SERVICE IN NORWAY, THE COMMERCIAL SERVICES IN DENMARK AND THE REGIONAL POSITIONING SERVICES IN SWEDEN

See ITEM 7.

ITEM 9: EGNOS

Today one satellite for EGNOS is up and running. There are four control centres for EGNOS, in France, Great Britain, Italy and Spain. The consortium ESSP will now run EGNOS.

ITEM 10: SUMMARY OF ACTION LIST

Action	Responsible	Status	Important dates
Write status report of	Stampe	Not Started	An outcast

Nordic Positioning Service for the NKG Presidium			distributed in week 16
Decide how to co-locate the permanent reference stations along the N/S border	Per Erik and Peter	Not Started	None yet
Each project responsible shall make a project plan with milestones	Casper Per Erik Peter	Not Started Not Started Not Started	None yet None yet None yet
Testing of NorDPOS in Denmark by means of a monitor station at KMS	Casper	Not Started	Will start 040301
Station data availability report shall be delivered to the SC each month	Per Erik	None has been delivered	Shall be finished before 040401
Stability test of the Swedish delivery of data	Peter	Not started	None yet
Develop a Javad/Topcon -- Ribex converter	Per Erik	Not started	Shall be finished before 040401
Provide a data delivery service with an availability of 90% per month	Casper Per Erik Peter	Not started Not started Not started	Start 040601 Start 040601 Start 040601
A reference/coordinator group for NordRTK shall be established	Per Erik	Not started	First meeting before 040701
The Swedish and Danish permanent reference stations shall be classified	Bo M	The specification is written	Finished before 041001

ITEM 11: NEXT MEETINGS AND CLOSING

A number of future meetings were decided.

- The next two meetings of the Steering Committee will be telephone meetings,

1. March 29, 08.30-10.00
2. May 24, 08.30-10.00.

There could perhaps be a meeting with almost all of the participants on Bornholm during the NKG Summer School (August 16-20). But the next "real" meeting will take place in **København on September 9, 12.00 - September 10, 12.00.**

Bjørn thanked all the participants for their contribution to a fruitful meeting.