



NORDISKA KOMMISSIONEN FÖR GEODESI

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

Minutes of the 18th meeting

København, Denmark - September 9-10, 2004

PRESENT

Denmark: Sigvard Stampe Villadsen
Casper Jepsen
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 18th 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 17th Steering Committee meeting on 26-27 February in Klekken and review of action list
3. Situation for the Geodetic institutions
4. Ongoing activities
 - NorDPOS
 - Nordnet – the computer network
 - NordRTK
 - The national GPS-services in each country
5. Report from the GPSNet workshops in Gävle and Munich
6. Report from the Presidium Meeting in May

7. Report from the latest Directors General Meeting
8. Future activities
9. Other items
10. Summary of action list
11. Next meeting and closing

AGREED ACTION LIST:

- - SK and LMV shall decide how to co-locate the permanent reference stations along the border between Norway and Sweden before October 1. Per Erik and Peter are responsible.
- - When it is time to start a new activity in the sub-project NorDPOS the project activity responsible shall make an activity plan with milestones. See Appendix A in the minutes from the 17th Steering Committee Meeting.
- - The NorDPOS activity "Testing of NorDPOS in Denmark by means of a monitor station at KMS" has started and continues with the monitoring (ITEM 4). Casper is responsible.
- - A station data availability report shall be delivered to the Steering Committee each month (ITEM 4). Per Erik is responsible. Such report has been delivered for each month between March and July. The one from August is though still missing.
- - Stability tests of the Swedish delivery of data to Nordic Positioning Service. Peter is responsible.
- - A Javad/Topcon - Ribex converter shall be developed (ITEM 4). Rune and Per Erik are responsible. At moment such a one is running, but there are a few problems with it which are not solved.
- - All the partners shall provide a data delivery service with an availability of 90% per month for the NorDPOS-data (ITEM 4). For Norway that has been provided since a long time ago. The responsible for Denmark is Casper and the responsible for Sweden is Peter.
- - The reference/coordination group for NordRTK has been established. The members of the group have had their first meeting, see Appendix B, and shall have a meeting again latest in November or December this year (ITEM 4).
- - The Swedish and Danish permanent reference stations shall be classified before November 1 (ITEM 8). Bo M is responsible.
- - A status report for RTCM version 3.0, a comparison of version 3.0 with version 2.3/2.4 and an analysis of the impact of RTCM version 3.0 on Nordic Positioning Service shall be written before November 1. Gunnar H is responsible (ITEM 8).
- - A new sub-project to check the line between the different computer networks shall be established (ITEM 4). Roger Hougen is responsible and it shall also include Casper and Örjan. This sub-project shall start around week 44.

- - The old list of permanent reference stations shall be distributed to the Steering Committee by Andreas. After that the list shall be updated in each country and sent back to Andreas and Stampe before October 10. After that a new map will be drawn in Denmark.
- - When reports are printed in the different countries, they should be distributed to the members of the Steering Committee.
- - The Swedish diploma work report about a comparison between single station RTK and network RTK shall be distributed to the Steering Committee by Andreas.
- - A Danish report about height and GPS measurements shall be distributed by Casper to the Steering Committee.
- - A CD from the GPSNet workshop in Gävle in March shall be distributed by Andreas to Denmark (ITEM 5).
- - A CD from the GPSNet workshop in Munich in July shall be distributed by Bo J to Denmark and Norway (ITEM 5).
- - Bo J and Rune shall try to find out before next meeting what is happening in the DARC-area (ITEM 9). They shall also have contact in between each other when they find something interesting about it.
- - The long list (Appendix A) we wrote on the 17th meeting in Klekken will be checked through on the 19th meeting.

ITEM 2: MINUTES FROM PREVIOUS MEETING

Minutes from the 17th Steering Committee meeting on February 26-27 was approved, but without the following remark was given:

ITEM 2 in the previous minutes: It should be "Review of the action list from the meeting of the steering committee on **November 10-11** and what has happened."

REVIEW OF THE ACTION LIST FROM THE MEETING OF THE STEERING COMMITTEE ON FEBRUARY 26-27 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 (ITEM 4). Stampe will start the writing. A proposal will be distributed to the members of the Steering Committee in week 16. Action carried out: The documents were written in time and presented at the meeting of the Presidium in Akranes on May 3-5. See ITEM 6 and Appendix A.
- SK and LMV shall have a dialogue about how to place the upcoming permanent reference stations along the border between Norway and Sweden. **Action carried out:** A dialogue has been held and before the 1st of October 2004 a proposal shall be presented.
- Each project activity responsible shall make an activity 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. **Action carried out:** This far a plan has only been delivered by Casper Jepsen, for NorDPOS in Denmark.

- 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. **Action carried out:** The only NorDPOS-activity which has started is the one mentioned above (and below).
- Testing of NorDPOS in Denmark by means of a monitor station at KMS (Starts **March 1, 2004**, Responsible: Casper Jepsen, KMS). **Action carried out:** It started on March 4, 2004.
- 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). **Action carried out:** Station data availability reports have been delivered for March, April, May, June and July, see Appendixes C, D, E and F.
- Final test of the Swedish delivery of data. Stability tests (**before May 3, 2004**. Responsible: Peter Wiklund). **Action carried out:** In progress, but started later than it should.
- Develop a Javad/Topcon - Ribex converter (**before April 1, 2004**. Responsible: Per Erik Opseth). **Action carried out:** The converter is running, but an agreement on the selection of messages in the Javad real time data stream is required before it can be completed.
- 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). **Action carried out:** No availability reports have been received.
- 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). **Action carried out:** The group has been established and had a first meeting, on June 21 in Gardermoen, see Appendix B.
- The Swedish and Danish stations shall be classified **before October 1, 2004** (Responsible: Bo Madsen). **Action carried out:** The date for this has changed to before November 1, 2004.

ITEM 3: SITUATIONS FOR THE GEODETIC 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: ONGOING ACTIVITIES

NorDPOS

Only the activity "Testing of NorDPOS in Denmark by means of a monitor station at KMS" has started. It started on March 4 and continues at moment with the monitoring. The rest of the activities have not started yet, but many of them are soon about to start.

Nordnet

The computer net is up, but somewhere there is a problem which seems hard to locate. The data availability reports from Statens Kartverk show that there are too many interruptions in the data stream, especially for the Swedish stations. Because of that a new sub-project will start in week 44, which aims to solve these problems. Roger Hougen, Statens Kartverk, is responsible and the other members of the group are Casper and Örjan. There are also still problems with the conversion of the Javad data from their own format to the Ribex format. That is because of that there are so many different message types in the Javad format that come out of the receiver at the same time. Rune and Per Erik will continue the work with the converter.

NordRTK

A meeting was held in Gardermoen in June 21 between Per Erik, Casper and Peter, see Appendix B. The participants were satisfied with the meeting and it was decided that the group will have at least one meeting every year. The next meeting will take place in November or December this year. The minutes from this meeting have been distributed to the members of the Steering Committee.

The national GPS services in each country

Denmark:

New KMS permanent reference stations: In Gedser and Hirtshals the stations are up physically, but all data connections are not ready yet. In the Esbjerg area there will be two new stations, of which one, close to the harbour, is already in operation. Both the private networks in Denmark are running as before, but now KMS has got the mission to justify that the reference systems used in the networks are correct. One of those networks, GPS Referencen, will test the Geo++ software together with Leica.

Norway: At moment 64 stations are connected to the SATREF central. 15 of these are ESTB (EGNOS) stations. There will be 3 new DPOS stations in the far north of Norway probably in the beginning of 2005.

Sweden: The SWEPOS RTK-service was introduced on January 1, 2004. Another network RTK project, "Ost-RTK", will start next week. At moment the service has about 235 users and together with the ongoing project "MittOst" and the new project there are about 300 users. The service together

with these two projects covers the whole of south Sweden, Gotland excluded. The SWEPOS network will then contain totally 72 stations. Right now Lantmäteriet are changing their WAN network supplier, so for a few weeks there could be small interruptions in the data streams from the reference stations.

ITEM 5: REPORTS FROM THE GPSNET WORKSHOPS IN GÄVLE AND MUNICH

On March 18, 2004, there was a GPSNet workshop in Gävle, arranged by Lantmäteriet. Norway was represented by Rune, Per Erik, Gro and Line. Denmark was meant to be represented by Casper and Bo H, but unfortunately different circumstances made both of them stay at home. The participants got a CD each with lectures etc on. Since nobody from Denmark was present at the workshop Andreas got the mission on this meeting to send a copy of that CD to Casper.

Status reports from the GPSNet installations in the Flamish part of Belgium, Denmark, Finland, Great Britain, Norway, Switzerland and Sweden. Herbert Landau from Trimble reported also on the future development of GPSNet.

On July 12-13, 2004, there was a GPSNet workshop in Munich, arranged by Trimble. Bo J and Christina Kempe attended from Lantmäteriet. Strangely it seems as no one at Statens Kartverk had got the invitation, as well as no one at KMS. Because of that Bo J will send a copy of the CD with lectures etc. to Rune and Stampe.

There are two different RTK networks in Switzerland, one private and one governmental. In Austria there are plenty of different private networks, but now it seems as the governmental network will buy all the private ones. In Germany every Bundesland have one RTK network and one RTK service. The company ASCOS is buying data from all the networks and put them together to one service which covers the whole Germany.

One American speaker was on the workshop and he was trying to get financial support for a future network RTK area of 10 stations in Seattle. One of his major arguments about why to use network RTK was that it is "good for the environment".

Many people on the workshop believed a lot in Internet distribution through Ntrip and future applications in machine guidance.

The Danish private network, GPS Referencen, will test the Geo++ software together with Leica.

ITEM 6: REPORT FROM THE PRESIDIUUM MEETING IN MAY

The report written by Stampe about “Status plan, financial plan, future visions of Nordic Positioning Service” (see Appendix A), was accepted. The EUREF-NTRIP concept was also presented.

ITEM 7: REPORT FROM THE LATEST DIRECTORS GENERAL MEETING

The latest Directors General meeting was in Långebyn on Svalbard on June 28-30. Because of that there were two new Directors General since their last meeting, our information was more briefly than usual. The report from NKG was given by Knut Flåthen. The things which were spoken about were an overview of the NKG activities. The multitude was outpointed and they called it “A model for others”.

ITEM 8. FUTURE ACTIVITIES

RTCM version 3.0

RTCM version 3.0 was discussed and it was proposed that Gunnar H shall write a short overview over it. This means something about how it performs, its advantages, disadvantages and limitations.

Database for station information

The date for when the Danish and Swedish permanent reference stations shall have been classified was changed to November 1.

PROJECT C1A - Test of distribution channels for RTK

Global Star could be an alternative instead of DARC. It costs about 28 NKR/minute. Statens Kartverk had a meeting with Telenor to investigate if they could cooperate in any area. Bo informed about the Swedish DARC-tests, about the problems with not locking the signal on a certain transmitter. We decided that Bo and Rune should check more what is happening in the DARC-area and have more contact in between about it.

Postponed projects

PROJECT A0 - A Nordic standard for reference stations

Nothing new in particular was mentioned here.

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

Nothing new in particular was mentioned here.

C1B - Evaluation of available RTK algorithms

Nothing new in particular was mentioned here.

PROJECT A2 - An Automated Computation Service

Nothing new in particular was mentioned here.

ITEM 9: OTHER ITEMS

Bo J reported that Lantmäteriet are sending data from the Mårtsbo station to EUREF to be available in the NTRIP-project. Stampe reported that KMS soon will send data from either Suldrup or Smidstrup to EUREF for the same project.

ITEM 10: SUMMARY OF ACTION LIST**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, on November 2, 09.00-10.00 and on December 6, 09.00-10.00. The next "real" meeting will take place in Gävle on January 20, 12.00 - January 21, 12.00, 2005. Bjørn thanked all the participants for their contribution to a fruitful meeting.