



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 12th meeting

Gävle, Sweden - August 16-17, 2002

PRESENT

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

ITEM 1: OPENING OF THE MEETING

Björn Engen welcomed everybody to the 12th 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 11th Steering Committee meeting on June 13-14 in København
3. Status of a computer network between the Nordic control centres
4. Status of the co-operation sub projects
 - B - Real time service with dm accuracy
 - C1B - Evaluation of RTK algorithms
5. Status of the information sub projects
 - A0 - Standard for reference stations
 - A1 - Web-site

A2 - Automated Computation Service

C1A - Distribution channel for RTK<

6. Preparation of the test of Geo++
7. Preparation for the next meeting of the Director Generals
8. Ongoing activities
9. Future work
10. Other items
11. Next meeting and closing

ACTION LIST:

- The Tuesday after this Meeting Örjan Z (LMV), Bo H (KMS) and somebody instead of Hanne M (SK, who is on vacation at that time) will arrange a telephone meeting to discuss the few problems which are left to solve about the computer network (ITEM 3).
- Someone from LMV will write a detailed document of the classification of the reference stations that has been developed (ITEM 5, A0).
- Our Network-RTK test measurements should be performed during the period October 7 - October 18, by three different "measure-teams", one from each country, in the Gävle test field (ITEM 6).
- At the NKG General assembly this project will have a session of its own (ITEM 10)

ITEM 2: MINUTES FROM PREVIOUS MEETING

Minutes from the 11th Steering Committee meeting on June 13-14 was approved.

OLD ACTION LIST AND WHAT HAS HAPPENED:

- The Agreement on exchange of data from the Danish, Norwegian and Swedish networks of permanent reference stations is now ready to be signed. It will first be signed in Norway, and will then be sent to Sweden and then to Denmark (ITEM 5).

- **Action carried out:** The Agreement on exchange of data is now signed by Knut Flåthen and will within a few days be signed by Joakim Ollén, before it will be sent to Peter Jacobssen to sign.

- LMV will distribute two diploma work reports to the rest of the Steering committee (ITEM 6, C1B).

- **Action carried out:** The diploma works are now distributed to the Steering Committee members.

- Rune Hanssen will arrange a telephone conference with Bo H and Örjan Z (ITEM 4).
- **Action carried out:** Will be done in the week after this meeting.
- Dan Norin will write a detailed document of the classification of the reference stations that has been developed (ITEM 6, A0).

- **Action carried out:** Nothing has happened, because of changes in the available resources. The present plan is that the document will be finished in October.

- Rune Hanssen checks if SK has received the portal for the Nordic web-site for distribution of data from the Danish, Norwegian and Swedish networks of permanent reference stations for post-processing (ITEM 6, A1).

- **Action carried out:** It's done. Rune has also received the software from Denmark, but has yet no computer to run it on. Such a computer will be bought in the beginning of October. Data is available on the web-server, but will soon be out on a UNIX-computer.

ITEM 3: STATUS OF A COMPUTER NETWORK BETWEEN THE NORDIC CONTROL CENTRES

The specification for the computer network between the control centres in Denmark, Norway and Sweden can be found in the document "NKG Network - Architectural Design", which was updated on 20th of November (see minutes from the 9th Steering Committee Meeting, in November 2001).

This computer network is not completely established. The Tuesday after this Meeting Örjan Z (LMV), Bo H (KMS) and somebody instead of Hanne M (SK, who is on vacation then) will arrange a telephone meeting to discuss solve the few problems which are left to solve. Rune reported that when Hanna went on vacation the network didn't work, but Bo M was almost sure that it now really works.

ITEM 4: STATUS OF THE CO-OPERATION SUB PROJECTS

B - A Nordic Real-time Service with half-meter horizontal accuracy (95 %)

When the communication links between the control centres are established a pilot project with a (WADGPS) "decimetre" service will be carried out in southern Norway, southern Sweden and Denmark using the software installed at the SATREF control centre. The SATREF control centre will collect data from the control centres for SWEPOS and the Danish reference stations. SATREF will provide a computed network model to the control centres for SWEPOS and the Danish reference stations for test and evaluation.

The things mentioned above are now finished on the Norwegian side. The software for Denmark is also ready, but not installed. There are still a few minor things to make on the Swedish side.

Five prescriptions have been sold in Norway since August, where an ISDN-router now has been bought. Tests will be performed in Denmark and Sweden with GSM as the data distribution link. Now there is also a possibility to connect DAB on the serial port. According to Trimble in Sunnyvale, California, the solution will be better if all the stations are included, and then also the Danish and Swedish ones. Decipos will be shown on the Director General Meeting in Ålborg, which will be "The first operative Nordic co-operation". But for this to become a reality, the computer network must start to work.

Statens Kartverk have bought five Pocket VRS. They have though an option to buy five more, and it's possible to lend one to Denmark and Sweden.

C1B - Evaluation of available RTK algorithms

LMV has not done any more tests with the Calgary network RTK software since the last Meeting, because of that the software still is not working.

Anna Jensen (KMS) accounts for her doctor thesis on the 13th of September.

ITEM 5: STATUS OF THE INFORMATION SUB PROJECTS

A0 - A Nordic standard for reference stations

At the moment it is not decided who will replace Gunnar Hedling as the chair of this sub project. It is though decided that the document of the classification of the reference stations that has been developed, will be updated right after the NKG General Assembly.

Then the document will be sent to the members of the sub project, to the Steering Committee and to other involved persons for comments before the 1st of November. The document will then be approved at the next meeting of the Steering Committee, on November 21-22, 2002.

The next step is to make an inventory of the existing Nordic reference stations. A standard form, based on e.g. an Access database, should be used. Based on this inventory and the existing standards for IGS and EUREF stations the sub project shall propose a long-term standard for the design of Nordic reference stations.

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

In the sub project A Nordic Web-site for download of reference station data for post-processing purposes only the last phase is remaining. All the countries should have received the Web-portal. LMV has not installed the Nordic Web put out the portal on the Web-server, but has acquired a new Web-server, transfer of the portal from UNIX to NT environment is necessary.

Almost nothing has happened in this Item since the last meeting. Sweden and Norway put out their data, but have no Web-site. About the reference system connections between the Nordic reference stations, we decided to ask the NKG Satellite group once more to solve them (see minutes from the 11th Steering Committee Meeting, in June 2002).

A2 - An Automated Computation Service

LMV has a computation service in operation on the SWEPOS web-site, which performance is very satisfactory. During the last time we have got many new users, especially from other parts of Lantmäteriet.

To extend the computation service to be a Nordic service some investigations regarding the national reference systems needs to be done, a 3D-campaign must be

performed (see sub project A1 above). When this is done the service can be introduced e. g. in Denmark.

C1A - Test of distribution channels for RTK

See ITEM 6 and ITEM 4 B.

ITEM 6: PREPARATIONS OF THE TEST OF GEO++

On the 12th of July Bo J, Björn E, Rune H and Stampe V had a meeting with GEO++. On the meeting it was agreed that we should make a Nordic test of the GEO++-software, GNS-Smart. The installation of the software will be in Gävle, the first week in September. Our test measurements should be performed during the period October 7 - October 18, by three different "measure-teams", one from each country. And this will be performed in the Gävle test-net. It will then be of greatest importance that the Trimble software and the GEO++-software will be tested at the same time, on the same antenna. Things that will be compared are for example the availability (to get the first fix solution), the continuity (to keep the fix solution) and the initialisation time. Measure routines will be exchanged and a measure protocol, created by KMS, will be distributed to LMV and SK. Contact persons are preliminary Andreas E (LMV), Gro/Per-Erik O (SK) and Stampe V (KMS).

ITEM 7: PREPARATION FOR THE NEXT MEETING OF THE DIRECTOR GENERALS

The next meeting of the Director Generals will be in Ålborg in the beginning of September.

Bo J will speak about this project and the whole NKG. He will then describe how we will continue our work without the support from "Nordisk Industrifond", and show which areas which will get the highest priority. On this meeting there will also be a demonstration of DPOS, including three Danish stations and one Swedish station.

ITEM 8: ONGOING ACTIVITIES

See the other ITEMS.

ITEM 9: FUTURE WORK

See ITEM 6.

ITEM 10: NKG GENERAL ASSEMBLY

At the NKG General assembly this project has a session of its own. It will take place on Saturday the 5th of October and will go on for 90 minutes. We would like to move it to Friday the 4th of October instead, but it seems that it is not possible. Proposals of lectures were as follows:

- Stampe V will speak about the report of the Steering Committee, about the common Web, the standard and our future plans (for example the Geo++ test).
- Someone from Norway will speak about DPOS.
- Lotti Jivall (LMV) will speak about the SWEPOS Computation Service.
- Someone from Sweden will speak about the "cm-services" in Sweden and Network-RTK test measurements.
- Someone from Denmark will speak about their test measurements with RTK and single station RTK.

The abstracts should be sent in on the 6th of September.

ITEM 11. NEXT MEETING AND CLOSING

The next meeting of the Steering Committee will take place at LMV in Gävle on November 21, 13.00 – November 22, 13.00, 2002. Björn thanked all the participants for their contribution to a fruitful meeting.

