



NORDISKA KOMMISSIONEN FÖR GEODESI

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MINUTES FOR THE 52ND Presidium MEETING

Time: 13 March, 2013, 9.00 – 17.30
Place: Landmælingar Ísland, Akranes, Iceland

Item 1) Opening of the meeting

Thorarinn welcomed us to Landmælingar Ísland (LMI). Several of the Presidium members were not able to participate due to different reasons. Due to sudden illness, Niels could not participate and Per was asked to act as chair of the meeting. Niels send his regards and hopes for a fruitful meeting. Per-Erik was not able to travel to Iceland due to important meeting with the ministry. Dagny was having a working group meeting parallel to this meeting. Also Jarkko was not able to participate due to illness. He sends his regards to all of us and we wish him a speedy recovery.

A special welcome was given to Are Færevig, Kartverket who participate instead of Per-Erik at this meeting.

Per also expressed NKGs thanks to LMI to organise the NKG Science Week as well as hosting the NKG Presidium meeting.

Item 2) Approval of the agenda

The agenda was approved

Item 3) Approval of the minutes from NKG Presidium meeting No 51

The minutes from last meeting was approved after a short clarification and amendment FROM Kartverket regarding on of the items.

Mikael will send out the approved minutes as well as upload them on the NKG web. However, there are still problems with updating the NKG website.

ACTION: Mikael to upload minutes to the webpage as well as send out the minutes to the presidium members as soon as possible. Responsible: Mikael.

Item 4) Brief reports on financial and organising issues at the Nordic National Mapping Authorities

Denmark: A new strategy is currently being implemented. As one step in this, KMS changed its name to Geodatastyrelsen (Geodata Agency) the 1st Jan. The mission for Geodatastyrelsen is to ensure that spatial data gives the highest possible advantage for the society. From the 1st of Jan, geodata is available for free. This includes topographic and cadastral maps as well as



height model. Geodatastyrelsen is also implementing a new organisation where levelling, permanent stations and field work is moved to a department called dataindsamling (Data Collection). Lola is now responsible for the department called Databehandling. Henrik Studsgaard is no longer Director General since he now has moved to a high position at the Danish Ministry of Environment. Geodatastyrelsen is waiting for a new Director General to be appointed

Finland: The reorganisation among the existing research institute is still going on and no decision is taken. The idea is to merge institutes to end up with only few research institutes. The decision is expected any week and the plan is to have the new units in place in the beginning of 2015. FGI expect to be included in a unit called *Research centre for geospatial information*. FGI would be the core of it.

A new strategy at FGI is focusing on four areas; *Reference system, Geospatial data infrastructure, Mobile Geomatics and Changing Earth*.

Jarkko is on sick leave until August and meanwhile Tiina Sarjakoski replacing him at the moment.

Iceland; LMI consists of only 25 persons. Therefore they try to have as flat organisation as possible. They have two divisions (Division of Land Surveying and GIS and Division of Dissemination and Infrastructure). Financially they are still struggling due to the financial crises in 2008. The financial support from the department is decreasing. LMI is offering all geodata free of charge to the users. The income to the agency from selling geodata used to be some 20% of budget but the open data policy means more money directly from the government.

They are also preparing themselves to be ISO 9001 certified during 2013.

LMI is participating in several EU projects and is therefore requiring more manpower to the office. High on the agenda is also Corine as well as the implementation of Inspire.

The service to citizens concerning *Place names* has given lots of feedback and reactions. Place names are very sensitive for people.

The register and survey of roads in the highlands is a huge task and extra funding is needed. LMI is expecting a decision to be taken soon in government.

Measurement of the horizontal network is expected to be done again in 2014 and 2015. LMI needs to visit some 120 points during the measurements. Also in Geodesy there is a focus on GNSS permanent stations, height network as well as determination of mean sea level.



Norway; Geodesy at Kartverket is in a process to develop a new strategy and vision for the period up to 2018. The Geodesy Department is implementing a project portfolio to be more efficient in accomplishing on-going projects as well prioritizing between them.

The Geodesy Department is working towards the one cm goal for positioning and this includes more cooperation with Trimble. One part of this is to include scientific work regarding troposphere into to the Trimble's Pivot Platform.

The development of the observatory at Ny-Ålesund is progressing more or less according to plan. During 2013 contracts for the development of road as well construction of the new antenna will be signed. The new antenna is planned to be operational in 2018 and the old antenna should be removed before 2022.

Sweden; The organisation of the Geodesy Department is stable as well as the organisation at Lantmäteriet. Currently almost 40 persons work at Geodesy and the turnover is approximately 60 mSEK. The challenge is to attract new staff to geodesy and the challenge is mainly because there are very few persons that educates with an interest in Geodesy, especially on the Master level. Lantmäteriet is preparing itself for the Open Data decision. They are noticing on-going developments in e.g. Denmark, Iceland and Finland.

Lantmäteriet is rebuilding the head office and this has now resulted in a new SWEPOS control centre as well as that the servers are now stored in Lantmäteriet central server hall instead of a SWEPOS server hall. At the same time we changed from GPSNet to VRS3. The move as well as change of the program was all done without taking down the SWEPOS network-RTK service.

The introduction of SWEREF 99 and RH 2000 at the local authorities is going on with more than 250 (of 290) has now changed to SWEREF 99 and more than 100 to RH 2000.

SWEPOS expanded with almost 30 stations during 2012 and has currently about 275 stations. The number of users is more than 2000 persons with a stable growth every year. The cooperation with Trimble, Leica and TopPosition regarding network-RTK services is developing all the time.

The Royal Institute of technology will be looking for a new professor in Geodesy. The process has started. A new professor can be expected perhaps something like one year from now.

Item 5) Reports from the institutions, Strategic view for the coming years, and top priority regarding on-going activities (20 minutes per country)

Norway initiated a discussion regarding the different nation's strategic views for the coming years as a motivation to generate joint NKG projects from the Presidium. The countries presented ideas on their focus for the coming years and continued with a discussion after that.



Finland;

- FGI plans and future. The reorganisation of research institutes is a major uncertainty. A decision is expected within a month or two. Finland is moving towards Open data policy also regarding real time GNSS data. Planned to start in 2014 with a free 0.5 m positioning service.
- Modernisation of Metsähovi Observatory;
 - o Funding is secured for 2013 and 2014 but not for 2015 and 2016 yet.
 - o Finnish Permanent GNSS network FinnRef will be developed with 7 new stations as well as new pillars at existing stations
 - o A new SCG was ordered in 2012 but delivery has been delayed to April or May this year
 - o SLR will include a new telescope, laser, renewal of the old one
 - o VLBI-2010 compatible new telescope and Infrastructure (local ties, several minor instruments)).
 - o Upgrading the FG-5.
- FGI has together with NLS identified a number of joint research plan and projects for the years 2012-17 that includes land uplift studies, reference frame, maintenance reference frame and systems, geoid modelling, new techniques (ground based laser scanning, airborne laser scanning, GNSS...) for maintenance height systems in the future.

Iceland;

- The main tasks as well as top-priority activities for the period have been discussed at LMI 2011-15. All employees at NLSI have been involved.
- Among the main tasks are;
 - o Advise the Ministry in NLSI fields of expertise
 - o Develop and maintain horizontal and vertical reference systems
 - o Make, maintain and disseminate digital layers on a scale of 1:50000
 - o Provide access to data preserved by the institute
 - o Register and dissemination of spatial data from the institute
- Among the top-priorities regarding on-going activities are;
 - o Prepare remeasurements of the horizontal reference system
 - o Continue levelling to support the vertical reference system (trigonometric measurements)
 - o Keep on building up the CORS. More co-operations with geophysics.
 - o To introduce the ISO 9001 at LMI
 - o Keep on building up a database for place names
 - o To offer access to the GIS-database free of charge
 - o INSPIRE implementation
 - o Corine
 - o IS 50V



- Arctic SDI
- EU/EEA projects (Helm, EenvPlus, Copernicus, EMS, and more)
- Road and track database

Norway

- Kartverket presented *The app*. It is a proposed app from Kartverket including a 4D maps covering sea and land available for free to the public including real property and its owners (yesterday, today and tomorrow), indoor and outdoor). There are no decisions on actually building the app, it is still only a proposal.
- Automated mapping using different techniques is something that is interesting to look into more.
- Concerning CPOS there is a need for increased availability. About 70% of the users wants an integrity solution with a quality indicator, 50% of our users wants an increase in precision (1-2 cm).
- Concerning GeoSat, the goal is to develop a single solution covering VLBI, SLR, GNSS, DORIS, Gravity and altimetry. Everything to be combined at observation level. When succeeding we will be able to calculate sea level and ocean currents based on a long term stabile global reference frame.
- A global dynamic reference frame; continuously updated and not fixed to an epoch.
- There is an imminent need for a Troposphere experts to Kartverket. Overall understanding of VLBI, DORIS, GNSS and SLR for Geosat.

Sweden

- Sweden has a strategy in place, it is called Geodesy 2010.
- The Vision is; – is to be able to meet Swedish society's needs for a homogeneous, sustainable geodetic infrastructure and to guarantee its availability and use.
- Goals for 2015 are;
 - Guaranteed the use of GNSS in real-time with the measuring uncertainty reduced to the centimetre level both horizontally and vertically, through a densification of SWEPOS
 - Created a new three-dimensional model for the post-glacial land uplift phenomenon
 - Been actively engaged in ensuring that municipalities and government authorities have completed the transition to the new national SWEREF 99 and RH 2000 systems
 - Defined and created a new gravity system, RG 2000, and also established a new gravity network
 - Created a geoid model with an uncertainty less than 10 mm
 - Developed NKG's analysis centre so as to include all permanent reference stations in the Nordic countries.
- Goals for 2020 are:



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- Guaranteed the long-term sustainability of seamless and unified reference systems, that satisfy user demands, through active management policies
- Created a geodetic infrastructure that gives users access to reference systems in real-time with an uncertainty of less than 1 cm
- Produced a geoid model for the whole of Sweden that has an uncertainty of less than 5 mm
- Ensured, through active participation that the European reference systems, ETRS 89 and EVRS, still remain in use for technical applications.

The presentations started a long discussion. We also entered a discussion concerning the importance of both having working groups and projects. Some of the outcomes are;

- We have a lot of common interests. The field of geodesy is much more important today than before.
- Most countries are moving toward free data. What will this mean for us?
- Recruiting new staff is a challenge. How is the cooperation between NMAs and Universities?
- A discussion on NKG Projects and working groups; The working groups are important for knowledge sharing and networking. We have historically used the working groups to accomplish joint tasks and this is done using best effort basis. NKG is one community but there also others as IAG and other international organisations. So what is the strength of NKG? What is the driving force for its existing? The meetings are very important, both working group meetings and presidium meeting. Telephone conferences, skype and email can work in between but not as the only medium. Projects focus some of our work but should not limit the working group ability to move the area forward. Projects should be based on common interest. Some of our projects have time limits, some have not. Should we have projects that only focus on deliverables? How do we make sure that the projects are more successful but still continue with the important networking and knowledge sharing that NKG is about?
- Is there a need for a NKG Strategic Plan to know when we should launch projects? The national strategic plans incorporated to a joint NKG strategic plan.
- Need of strategic discussion within NKG on what is the purpose of NKG? Wgs compared to NKG projects, how we shall get these two different working methods to work together.

ACTION: One or several workshop(s) on the development of a NKG Strategy based on the national strategic plans to be planned. A road map for the work is to be presented at the next Presidium meeting. The first workshop could be held in conjunction to a Presidium meeting during autumn 2013. The NKG Strategy should be presented at NKG General Assembly 2014. Responsible: Niels.



ACTION: A Workshop discussing the roles of NKG and its Presidium, Working Groups as well as Projects to be held. The work shop should discuss the importance of NKG, its role and how we want to use NKG to develop geodesy in the Nordic area as well as in respective country. An evaluating of the past years with the project concept should be done. Responsible: Niels.

Item 6) Report from the NKG Workshop on Land Uplift Model

An evaluating of the NKG Science Week took place. This week has attracting many people as well as interactions with other sciences close to Geodesy. It was discussed if this concept should be held more often in the future. Perhaps there is a possibility to combine the NKG Science Week with the NKG Summer School every fourth year also? A science week also makes it possibility to arrange project meetings during the same week which is an advantage. It is important to avoid too much overlaps between the meetings since several people would like to participate in several meetings. Having the working group meetings at the same place in the same week has many advantages.

The NKG Science Week started with a workshop on Land Uplift Model. The Recommendations from the workshop are:

- A lot of interesting input. WGs discuss outcome during the upcoming meetings.
- A small group (Jonas, Mikael, Markku, Per) revises slides to condense outcome/perspectives
- Continue to work on both approaches – empirical vs GIA modelling (iterations – the wheel/spiral)
- All WGs continue to develop time series – compare and learn – also with error estimates
- Tide gauge data analyses – which WG?
- All WGs attempt to describe biases in the data series, eg ITRF related. Important for the comparisons as well as the model assimilation.
- We will facilitate access to the data at Markku's data warehouse
- We wish to support Holger Steffen's work plan and other activities within GIA modelling to enhance the developments in that field.

ACTION: The condense outcome/perspectives to be ready latest at May 1. This is done by Jonas Ågren, Mikael Lilje, Markku Poutanen and Per Knudsen. Responsible: Per

ACTION: A general planning is needed for the proposed GIA modelling. To be decided is time plan, the dependencies between working groups as well as influence on existing projects. Working Group on Geodynamics is to be responsible. Holger Steffen to anchor the working plan presented with the NKG working groups. This is to be presented at the next presidium meeting. Responsible: Dagny

ACTION: All working groups to take into account the need for error estimates and describe bias when presenting time series. Responsible: All working group chairs



Item 7) Reports from the working groups

- a) Geodetic infrastructure (Per)
The working group has one project going. The working group has organised the workshop on Land Uplift.
- b) Geodynamics (Dagny)
Unfortunately, Dagny was not present since her working group had a meeting in parallel.
- c) Geoid and height systems (Jonas)
Concerning projects see below. The working group has a pending project proposal on Empirical land uplift. The proposal will be discussed at the Working group meeting on Iceland.
ACTION: Present the status of the proposed project at the next Presidium meeting.
Responsible: Jonas Ågren
- d) Reference frames, positioning and navigation (Pasi)
The working group has been focusing on the projects since last presidium meeting.

Item 8) Reports from the projects

- a) Computation of the NKG2014 geoid model (Jonas)
The specification on the computation of the NKG2014 geoid model is under discussion. The project is late since the specification needed to be iterated and discussed. The part will be finalised at working group meeting on Iceland. The project is discussing a changed time plan for the project. All countries should prepare themselves to be able to meet the next stage within the project.

NKG elevation model is needed to be constructed. The idea is to use the elevation model for the EGG08. To receive this we need an agreement. Mirjam B-K has prepared an agreement that needs to be signed.

ACTION: Project leader Jonas Ågren to notify all involved countries about the new time table within the project and that the countries prepare themselves to meet the new time table. Responsible: Jonas

ACTION: Ask all NMAs to sign the agreement as quickly as possible but not later than 20 March. Responsible: Jonas Ågren

- b) Investigation of the requirements for a future 5 mm (quasi) geoid model. (Jonas)
Lars Sjöberg is the project leader. Circular letters sent out with several questions, however very few responses from the project participants. A Swedish presentation has been done e.g. at Venice in October, 2012 covering the scope of the project.



ACTION: Ask the project leader and Jonas to consider if the project should continue as a project or continue as a study. A decision to continue or not shall be discussed at the next Presidium meeting. Responsible: Jonas Ågren.

- c) Finalisation of the Baltic Levelling Ring (BLR). (Jonas)

Due to lack of time nothing has been done. Priority has been given to other projects.

ACTION: Presidium realises that the project has slow process and accepts this. The project is halted and will be active again when Jonas has more time. Presidium also realises that Jonas together with Jaakko and Karsten are key persons for the project. Jonas reports back to the Presidium when the project can start again.

- d) Review of current and near-future leveling technology (Jonas)

Olav Vestøl is the project leader. A review is under way. It will be presented at the working group meeting on Iceland. All countries have been asked to be involved but unfortunately the project is missing information from Finland and Denmark.

ACTION: Ask Olav Vestøl if he needs a recommendation from the Presidium. Responsible Jonas

- e) ITRF – ETRS 89 Transformations. (Pasi)

There has been no action since last presidium meeting meaning that the project is late according to time table but this is not alarming.

- f) NKG GNSS AC (Pasi)

Lotti Jivall is the project leader. The progress is according to plan so far. The project will use Bernese 5.2 instead of initially decision on Bernese 5.0. This will need some additional testing that will need changes to the time table. The project still hopes to finalise the project in September 2014.

- g) NCGN – Nordic Combined Geodetic Network (Markku)

Markku is the project leader. The project is running. The discussion on Iceland to use the database is encouraging. However, the project is behind schedule according to plan. The plan needs to be updated according to more information

- h) Absolute Gravity Measurements in Fennoscandia (Dagny)

Andreas Engfeldt is the project leader. The purpose is to collect absolute gravity observations from FG-5 and store the data in a joint database. An agreement has been signed by all counties. However, only Sweden and Denmark has delivered the data.

ACTION: Ask Dagny if she needs any action from the presidium?



ACTION: Ask the project leaders/working group chairs to focus their presentation on status on project, delays, lack of man power etc. Responsible: All working group chairs

ACTION: Ask the presidium members to follow the status of the projects by e.g. reading the presidium meeting minutes and act on them. Responsible: All presidium members

Item 9) A possible UN mandate for global geodetic network.

The UN committee of experts – UN-GGIM (Global Geospatial Information Management) is discussing how to improve the global cooperation within geodesy – and how to move geodesy from science to government commitment in order to reach the goal of 30 core network stations world wide - and an improved global reference frame.

Per-Erik attended the Second High Level Forum of UN-GGIM in Doha, Qatar and Anne presented some thoughts from this to the NKG and discussed how NKG can influence the next step.

The Doha declaration can be found at <http://ggim.un.org/2nd%20HLF.html>

With a UN declaration/convention it would be much easier to secure funding for the development of the core stations.

The UN-GGIM is also pushing for the use of ITRS worldwide in all countries. A questionnaire has been sent out to all countries during the winter.

To keep the momentum going it is important that each country make contact with their respective representatives before the next meeting/ before the meeting in Cambridge.

ACTION: At the next Presidium meeting to discuss if and how NKG could/should be presented at the Cambridge meeting in the end of July. Responsible: Per-Erik

Item 10) NKG web (Markku)

There are still problems with the NKG web page. The web page is up but updating has been a problem. FGI is working on this and Markku will keep an eye on it.

Item 11) The Interaction between NKG and the EUREF Technical working group (Markku)

The EUREF-TWG will have its next meeting in Brussels 20-21 March. Markku and Martin are both members of the TWG. Martins is leading a study group on kinematic.

- Wolfgang Söhne and Markku Poutanen is working on a white paper on “Promotion, Outreach and Education on Geodesy” to be presented at the TWG meeting.
- There is an Inspire document called *D2.8.II.1 Data Specification on Elevation - Draft Technical Guidelines* that is discussing the use of EVRF 2007 and EGM version 2008.



Discussion has been done between several geodesists in the Nordic Area (Markku, Jaakko Mäkinen, Martin Lidberg) and a suggestion for new wording has been prepared. Sweden has sent this to its national contact to Inspire and it would be good if other countries can do the same.

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ACTION: Encourage all countries to contact the national contact person concerning the Inspire-recommendation

Item 12) NKG General Assembly 2014

Jan presented some options to the presidium on location for the next NKG General Assembly. It was decided that the first week of September 2014 would be suitable and that the location should be Chalmers in Gothenburg. Jan is to make necessary arrangements with Chalmers as well as hotel.

ACTION: The next NKG General Assembly is to be held the first week of September 2014 at Chalmers, Gothenburg. Responsible Jan and Mikael

Item 13) Other Business (All)

- Anne reported that Kartverket has a new website using the old address. Please update existing links!
- Each Nordic country has a similar project agreement with Russia. We used to have annual meetings but due to lack of communication from our Russian colleagues we were not able to organise a meeting in 2012. Markku reported that Demyanov has retired and that there is a new director (Spiridonov) of TsNIIGAIK

ACTION: Markku Poutanen has contact with the new director and will report to Mikael when it is appropriate to have a project meeting.

Item 14) Next meeting of the Presidium

53rd Presidium Meeting; June 1st or 2nd 2013, Ilulissat, Denmark



Present:

Denmark: Per Knudsen, DTU Space (chair)
Lola Bahl, KMS

Finland: Markku Poutanen, FGI
Pasi Häkli, FGI

Iceland Thorarinn Sigurdsson, LMI

Norway: Torbjørn Nørbech, Kartverket
Anne Jørgensen, Kartverket
Are Færevig, Kartverket

Sweden: Mikael Lilje, LM (Secretary)
Jan Johansson, Chalmers
Jonas Ågren, LM

Apologies:

Denmark: Niels Andersen, DTU Space

Finland: Jarkko Koskinen, FGI

Norway: Per Erik Opseth, Kartverket
Dagny Lysaker, Kartverket

Iceland: Gudmundur Valsson, LMI