



NORDISKA KOMMISSIONEN FÖR GEODESI

Chairman

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Minutes

79th NKG Presidium meeting

Time: 1 June, 12:00-15:00 CET

Place: Virtual Zoom meeting

Item 1. Opening of the meeting

The NKG chairman Markku Poutanen opens the meeting and welcomes everyone to this virtual presidium meeting.

Item 2. Approval of the agenda

The agenda is approved.

Item 3. Approval of the minutes from the NKG Presidium meeting 78, December 2020

The minutes of the NKG Presidium meeting 78 is approved.

Item 4. Action items from meeting 78

On licenses. Holger presents a comparison on CC-BY and other alternatives for license model for NKG documents and products. The CC-BY (Creative commons, [Share your work - Creative Commons](#)) is proposed as license model which basically means that the product can be used without restrictions, provided that appropriate credit are given to the creator. Suggestion is that for NKG products, credit should be given to “The Nordic Geodetic Commission”. An alternative in some cases could be CC-0, where no credit is given to the creator (which make the use less complicated).

It is discussed that some products have already been made available on the web (sometimes since many years), but that is partly the background to why we discuss this topic.

In Denmark a slightly different license model is used at SDFE for their products and information (sometimes including “NKG material”) (<https://sdfе.dk/om-os/vilkaar-og-priser>). However, a freedom of choice has been adopted where SDFE data can in the future be used under the existing license OR under Creative Commons 4.0 (CC-BY). In summary everything related to geodesy can be used respecting the CC-BY 4.0 license.

AI 1 to all: check for issues on the proposed model.

Michael, DTU, thanks for the good descriptions in the prepared material.

Item 5. Renewal of the NKG by-laws

A draft version of the renewed by-laws has been distributed before the meeting. The “by-law group” had a meeting on 20 April to discuss the content in addition to e-mail correspondence.

The distributed version should be considered as a draft for discussion, and there are both details and principles that remain to be discussed.

The meeting spends an hour discussing the text and how we look upon NKG. What it has been in the past and what kind of organization we want NKG to be for now and in the future. Lots of updates to the draft version are made, and parts which need further considerations are identified. Further work is needed on the by-laws, but the discussion has contributed with fruitful input.

AI 2 for the by-law group: Prepare an updated draft until the next presidium meeting.

It is concluded that the writing group on the by-laws does have a tough task to finalize the by-laws. It is more than just including additional countries, but also the description of the NKG as an organization, its role in the years (and decades?) to come, and on the formal governance structure.

Item 6. National reports

For details, it is referred to the distributed written reports/presentations where available. A summary is given below:

DENMARK

DTU Space:

- Green agenda, visit by the minister. Space is green, need longer time perspectives as well. Focus GNSS contribution to green transition.
- Professor in Satellite Geodesy, interviews completed, waiting for conclusion
- DANGO ESA NAVISP project to DTU. Very complementary to TAPAS.
- Preparation of the final release of the FAMOS gravity data and the conditions for use of these data
- DTU Space is forming a new center on Space Safety reflecting the importance of the space infrastructure as a critical infrastructure for the societies. Have a new project SWADO on how GNSS and magnetic disturbances are correlated (Greenland).

SDFE:

A written report is provided just after the meeting:

- Two new GNSS CORS installed on “mainland” Denmark (Jutland, and the islands). There are now 14 CORS and no further expansion is planned
- harmonizing the GNSS IT infrastructure at SDFE in order to decrease complexity of the data flow and increase the availability

- installation and evaluation of InSAR CATs (compact active transponders) from MetaSensing co-located to GNSS stations. So far, the operational performance has not reached the desired level, so work is on-going
- new nation-wide deformation map based on InSAR/Sentinel-1 has been provided from TRE Altamira in January. Final products aligned to ITRF2014 by means of time series from 10 GNSS stations. InSAR-GNSS-ties based on natural InSAR measurement points at GNSS-stations.
- SDFE is seeking finance for a permanent service that will complement the future European Ground Motion Service
- There have been 14 new releases of PROJ since May 2019 (current version 8.0.1), where the NKG2020 transformation was included in release 7.2.1.

ESTONIA

- The ESA Geodetic-SAR project on height system unification and sea level research in the Baltic Sea
- Post FAMOS geoid – data from Poland available for the geoid model
- Estonian-Latvian cooperation as an Interreg activity to strengthen the geodetic infrastructure. The “Baltic Rail” is a motivating example of use case
- Seeking funds for modernization of EstPos
- Estonian Land Board hosts the EstHub on Copernicus satellite data.

FINLAND

- New organization at the Land survey implemented
- FinPos service has now about 400 internal users.
- Work is done on designing and installing InSAR CRs (passive “physical” corner reflectors)
- Work on how to introduce dynamic coordinates, and systems including gravity
- FGI will move to the Aalto University campus by June 2022.

ICELAND

- Focus on IceCORS where additional stations are established
- New InSAR map of Iceland based on Sentinel-1 data from the period 2015-2020
- InSAR database on major events in Iceland are compiled
- Re-process of all data from CORS in Iceland
- And the 12 March eruption and lots of preceding earthquakes. These have generated much interest and many activities and InSAR and GNSS are playing a vital role in monitoring the events

LATVIA

Latvian Geospatial Information Agency

- The Interreg project for Baltic rail (see notes on Estonia)
- Much Geomagnetic work
- New quasigeoid for Riga
- Struve geodetic Arc.

Riga Technical University, Latvia University:

- Digital twin of Riga in RTU campus. Many TB data. Based on lidar observations etc.
- Astrometric optics, where laser and optical camera are used in parallel
- The digital zenith camera; some 400 sites observed.

LITHUANIA

- New law on geodesy and cartography adopted (or in force?) last Friday. (Simonas was the person to take the law through the parliament.)
- Three new GNSS stations established lately despite the Corona pandemic.
- Levelling is on-going
- Geo-Magnetic observations
- Gravity observations in the Baltic Sea - a dream to get it done.

NORWAY**Kartverket:**

The Norwegian Mapping Authority has an updated strategy including 3 strategic goals:

- As the national geodata coordinator, the Mapping Authority shall be a *driving force* for Norway to achieve its goal of becoming a leader in the use of geographical information
- Through collaboration, we will develop the geographical infrastructure to become the *community's digital twin* as a basis for a sustainable society
- We *make it easy* to collect, process and share location-based information

The implication/translation to geodesy is expressed as:

- Innovators, We are an innovators for user-friendly location data and handling geospatial information
- Digital twin, The automatic and correct location of everything in relation everything else
- Simple, Accurate and reliable positioning for everyone

In details, the goals include high ambition on reference frames and a “1 dm service” for e.g. mobile phones.

Status on SatRef: now includes more than 280 stations. Densifications done mainly along railroads. More than 10' users.

Ny-Ålesund observatory: VLBI is up and running. Parallel operation with old and new stations. The old antenna will be decommissioned by 2022.

Norwegian University of Life Science, Ås:

Ola informs that there is teaching in Geomatics in 5 places in Norway: Ås (NMBU), Oslo (UiO), Bergen, Sør-Trøndelag/Trondheim (NTNU), Gjøvik (also a part of NTNU). Some current research in geodesy at UiO, NMBU and NTNU is presented (see report).

SWEDEN

- Introduction of a national ground motion service based on the same platform as in Norway. InSAR data from Sentinel-1 is the basis. The project is driven from the Road and railroad authority and the Swedish Space Board, with several more partners involved (including Lantmäteriet and Chalmers).
- Lantmäteriet will complement the geodetic infrastructure with radar reflectors (some active CATs, and passive CRs collocated to GNSS stations)
- Focus for Chalmers is evaluation and suggestions for improvements of the product
- Geodesy involved in several (external) projects on various aspects on “precise GNSS for mass market applications, including Network RTK for the mass market
- The renovation of the national border between Sweden and Norway is on-going, where Sweden is responsible for the northern part
- The “geodetic infrastructure at the Onsala space observatory” will be financed through Lantmäteriet. The agreement between Chalmers and Lantmäteriet has recently been signed
- At Chalmers/Onsala some re-organization will be done, where the “geo-group” will be merged into a larger group including radar and remote sensing, and with Rüdiger Haas as leader for the new group.
- A VLBI analysis (all VLBI observations) using the Ascot software (developed by the group in Bonn) has been computed and handed over to IVS for the ITRF2020. It is a collaborative effort between Lantmäteriet and Onsala
- To note is that it is now 25 years since the first EPN analysis was delivered from NKG to Euref. (so, we should celebrate with a cake when we can meet physically!)

Item 7. Report from the Working Groups

For details it is referred to the presentations, but a summary is given below.

REFERENCE FRAMES

- The WG meeting was held on-line in end of March
- Many of the activities are related to the NKG GNSS AC and the products and insights achieved. The updated crustal deformation model NKG_RF17vel is an example, including the NKG2020 transformations between national realizations of the ETRS89 and ITRF2014 that is now included in PROJ
- Almost (?) all countries also contribute with their national daily/weekly solutions used in NKG GNSS AC to the EPN densification activity where the NKG area thereby is included in the common European solution.

FUTURE HEIGHT SYSTEMS AND GEOID

- The WG meeting was held on-line March 15 with 62 participants from 9 countries and hosted by HiG (the University of Gävle)
- Important subject is the IHRF (international height reference frame) and how to realize this in the NKG area (including Greenland?). Basically, IHRF

heights are determined through “GNSS minus geoid” where there are lots of details in the determination of the (globally adopted) geoid height

- The finalizing of the FAMOS geoid action is the other large undertaking which will be the tool to realize the BSCD2020 at sea. The action includes update of gravity data and issues on permissions to use gravity data

GEODYNAMICS AND EARTH OBSERVATIONS

- The WG meeting was held on-line March 16 with 72 participants from 11 countries. The meeting was coordinated with the WG FHSG and hosted by HiG
- InSAR was a major part of the meeting (half day with many discussions). This was considered very positive, and it was concluded that the WG GEO “should continue providing a discussion forum for InSAR and Geodetic SAR to share experiences, best practices, and thoughts within the community”
- The similarities with InSAR today and how the GNSS in the 90s was developed and implemented, are noted.
- BIFROST paper is published(!)
- New BIFROST solution is planned (data including 2020)
- The work towards NKG202xLU proceeds
- Final publications from the Relative gravity lines is in (slow) progress.

FUTURE POSITIONING SERVICES AND APPLICATIONS

At the moment “dormant”.

Item 8. NKG Summer School 2021

Ove gives a short report. The dates are August 30 to September 2. It will be “virtual” and with registration free of charge.

The program is almost completed, and invitation will go out by mid-June.

The virtual NKG summer school will be run by Kartverket using Teams Live. It may be less “oral interactions”, but communications will be done through the chat.

Item 9. NKG General Assembly 2022

According to the schedule it should be Denmark that host the 2022 NKG General Assembly.

Denmark is willing to host the physical General Assembly in 2022 and sees it as an honor. Needs to be discussed if it should be only physical, or a “hybrid” meeting. May be nice to have it on Bornholm.

Item 10. Reports

Unfortunately, there was no time for reports, but it is noted (from Markku) that the IAG technical meeting (June 28 – July 2) now has some 1000 registrations, while it usually are about 300 participants at these meetings.

Item 11. AOB

No time for AOB at this meeting.

Item 12. Next meeting of the Presidium

Last meetings: Latvia - Iceland – Sweden – Finland – Norway – Denmark

Next presidium meeting on-line in connection to the summer school.

Item 13. Closing

The chairman thanks everyone for their contribution to this virtual meeting and wishes everyone a nice summer!

Participants

PRESIDIUM

Markku Poutanen (chair)
Martin Lidberg (secretary)
Niels Andersen
Søren Fauerholm Christensen
Guðmundur Valsson
Pasi Häkli
Holger Steffen
Jan Johansson
Hannu Koivula
Ove Omang
Per Erik Opseth
Ola Øvstedal
Þórarinn Sigurðsson

GUESTS

Artu Ellmann, Estonia
Janis Kaminskis, Latvia
Ivars Liepins, Latvia
Eimuntas Parseliunas, Lithuania
Michael Schultz Rasmussen, Denmark
Simonas Valotka, Lithuania