Mandates from the four working groups and descriptions of the networks

March 2020

Working groups:

- Cadastre
- Land Mapping
- Land registration
- IT & Development

Networks:
- Nordic Standardization group (NMCAs, sup-group of IT & Development)
- Nordic Open Source initiative – NOSIN (NMCAs, sup-group of IT & Development)
- Nordic NMA knowledge exchange on remote data acquisition (Nordic and Baltic States)
- Nordic Adresseforum (NMCAs and other organizations)
- KrisGIS (NMCAs and other organizations)
- INSPIRE (NMCAs and other organizations)
- Competence and governance (NMCAs)

Nordic Cadaster Working Group (NCWG)

What is the core, day to day activities for an NMA on the issue?
The main task is: How we develop cadaster in each country? We are sharing ideas, strategies in that field. NWG have a responsibility of contents and quality improvement of cadaster data.
We discuss about how we distribute data and get more value for the data. We talk about connections between cadaster and other registers. Discussions about new technologies in gathering data and updating information in cadastral databases are important for us too. We are benchmarking definitions, standards, processes, laws etc. in our meetings.

All NMA´s are updating cadastral register (including cadastral map) in their country. Some NMA´s (Finland and Sweden) take care of cadastral surveys by themselves. Others conduct and coordinate cadastral surveys done by private sector, municipalities or other activators.

Future trends and tasks;
As a result of digitalization, utilisation of cadastral data has heavily increased. That´s why data quality and services has a more and more important role in societies.
Augmented reality, Blockchain technology, crowdsourcing, smart cities, linked data are possible trends in cadastral issues. Using a lot of different datasets together has an important role in future.
Urbanisation means polarisation in land ownership. In some areas, the importance of high-quality cadaster has increased and in the same time in other areas, the needs for a high quality cadaster are more limited.

Relations to other WG and networks
As a group NCWG works rather autonomously and we don´t have systematic co-operation with other WG´s.

Meetings and Communication
NCWG has 3-5 Skype meetings and one face-to-face meeting each year. Every meeting has an agenda, which is send to participants in advance. Short minutes is done after every meeting and sent to all members. If a meeting includes presentations or memos, they will be sent to members together with minutes.

We in NCWG are eager to start more open Nordic co-operation and sharing of knowledge also with other working groups and everyone who is interested in our work. We are willing to share core information (minutes, presentations) in the web.

Work group for Land mapping

What is the core, day to day activities for an NMA on the issue?
The Nordic group for Land mapping has existed since 2015. The core subject for this group is topographic data. The group work and share experience and knowledge about:

- The methods for collecting, storing and disseminating of data

- The 2D-4D perspectives on this data

It is equally important for NMAs to understand the changing role of spatial data. Traditionally spatial data has been used to make topographic maps as well as other products and services. When the data is used in processes of various ecosystems, it must be fit for purpose without further processing. NMAs need to take responsibility for data modelling, quality assurance and consistent delivery, because this is the NMA's core expertise.

Future trends and task;

- Technology policies: Open source vs commercial technology, lifecycle management etc.

- 3D and BIM

- Rule-based generalization and targeted visualization

- Strategy, National SDI and Future trends

- Spatial planning data

- Lifecycle management of data

During 2020 the focus is on strategy, user needs and technology policies.

Relations to other WG and networks
The group has a close collaboration on some topics with the IT & Development group.
The group seeks information about userneeds. This has previous been a part of this group but is not considered as a core activity. The information is now looked for outside the group, in the organizations in networks or ad hoc groups.

Meetings and communications
The participants are members from the Nordic countries. Outcome from the meetings are:

1. Sharing of knowledge, experiences and concrete solutions
2. Report from user needs activity according to separate plan
3. Defining concrete areas of collaboration e.g. 3D, development team organization, machine learning, cross-border data and services
4. Which organizations are part of the network, and do you have a chair:
5. The participants are members of the national delegations. Next host country is responsible for following up with activities.
6. Hosting of the meetings in the group iscirculated among the Nordic nations.
7. The chair is for a two-year period, currently Norway - Erik Perstuen.

Work group on Land Registration

What is the core, day to day activities for an NMA on the issue?
The Nordic group for Land Registration has existed at least since 2009.

The purpose of this group is to:

- Share knowledge and experience of digitizing processes
- Share key figures from each participant country

Future trends and tasks ;

Tasks for 2019 – 2021 are:
- Key figures; more sharing of details behind the figures
- Further sharing of information about financial matters
- Consequences of digitization to the employees and work; how to hold on skilled employees, what kind of employees are needed in the future?
- GDRP – how does it affect

Relations to other WG and networks

Meetings and Communication
The participants are members of the national delegations. Next meetings host country is responsible for activities. Hosting the meetings in the group, circulate among the Nordic nations. The chair and secretary are representatives from the hosting nation.

The group meets once a year i May

Workgroup on It and Developent

What is the core, day to day activities for an NMA on the issue?
Discuss IT governance issues, exchange competence and find areas for collaboration within areas like linked data, information security, strategic architectural and technological topics. The IT group will seek collaboration with the other working groups addressing topics such as trends, digitalization, Internet of things, cloud solutions, big data, open data issues as well as innovation within the geoinformation area.

Future trends and tasks
Deliveries for the next year made as best practice recommendations:
- Product teams including devops approach
- Architecture
- Methodology
- Machine learning, when and how
- Security

Written report will be made available for these topics.

Relations to other WG and networks
There are two networks under this group: Standardization and Nordic Open Source initiative NOSIN

Meetings and Communication
The participants are members from the Nordic countries. Two physical meetings and skype-meetings.

Networks

Nordic NMA knowledge exchange on remote data acquisition

This is a group with people from the Nordic and Baltic NMAs working with remote data acquisition. This includes photogrammetry, aerial photography, laser scanning and satellite data. For the last 10 years there has been an annual meeting. In this meeting we give national reports and inform each other about the situation in each country. There are also some special topics addressed in the meeting. The purpose of this is mainly exchange of experience and knowledge/ best practice.
The group use a Temwork for common access to the documents.

Last year the meeting was held in Riga with National reports and technical lessons with these topics:

- Experiences with machine learning in the Norwegian Mapping Authority
- Machine learning in Sweden
- Machine learning in Denmark
- New co-operational work with several other organizations in Finland new National
- laser- and aerial image
- Historical aerial images project in Norway
- Greenland mapping from satellite - John Kamper
- Data quality control in Latvian Geospatial information Agency
- 35 persons from 8 different countries participated in the last meeting.

All presentations from the last years can be found on Teamwork:
https://sdfe.teamwork.com/#/projects/242977/files

For the moment over 40 people, share the information on teamwork
We also use the teamwork platform if someone have questions or information during the year.

What are the outcome, what do the organizations gain from the network:
The outcome is better knowledge about these topics in each organization.
We learn from each other and can sometimes reuse some parts of specifications and tenders.
The information are shared and also made available for colleagues in each office.
We have a network of persons and this makes it easy to establish contact when needed.

Participating organizations:
The networks consists of the national mapping authorities in the Nordic and Baltic countries.

Next meeting will be held in Oslo 24. – 25. November 2020.

Nordic Adresseforum

The Nordic Adresseforum is mainly exchange of experience and knowledge/ best practice or specific tasks the group are solving together. The program at the meetings consists of plenary sessions with lectures, experience exchanges, discussions and workshops with different subjects. Each country provides a written country report. The meeting's agenda has an opening fixed point; Presentation of the most important items (high lights) from each country. It gives all the participants insight knowledge about key issues handled by the address autoritatives in the Nordic Countries.

Every year 2-3 themes is decided to be the main subjects. Examples of the themes can be:

– How to handle users of addresses like Google, Tommom and Eniro?
– Best practice in municipalities - where are our strength?
– Addressing in special building complexes or areas
– Addresses for indoor navigation (Addresses in 3D). Is there a need and how do we prepare?

What are the outcome, what do the organizations gain from the network
The Forum is an arena for the mutual exchange of experiences between the Nations.
The meeting increases the participants 'knowledge of addresses". It gives the participants a better basis, in the work with addresses. The collaboration helps to ensure that the way of using address in the Nordic countries moves in the same direction.
The collaboration provides participants with knowledge of new needs and requirements that the future might bring. This knowledge used in our own organization helps form the basis for new initiatives and decisions

Which organizations are part of the network, and do you have a chair:
Nordic Address forum is an informal collaboration between the authorities in the Nordic countries who have responsibility for determining and maintaining addresses and address data. Nordic Address forum is led by a Committee consisting of contact persons, appointed by each nation itself.

Nordic Address forum's Convention is planned by the host Nation with input to themes from the other Nations. The core participant comes from the Nordic Mapping Authorities, public registers (e.g Population and Taxation authorities) and Statistics agencies. In addition, participation from the Nations Post and municipalities are requested.

How often do you meet:
Nordic Address forum has an annual Conference. The meeting is held over two days in May/June every year. The meeting place rotates between the participant Nations.

KrisGIS

The network has been active since 2005. The established an agreement between the Nordic countries on free access to cross border geographical data signed in 2011 by all Nordic mapping authorities.
The purpose of the agreement is to give the emergency services (Police, Ambulance, Fire brigade and others) better possibilities to find their way in the neighboring country when they are on an assignment there.

The main purpose of the network is to promote the use of geodata/GIS concerning emergency planning and civil protection within and among the five Nordic countries.
The network also has the responsibility to maintain the Nordic agreement incl. appendix and it is an important forum for exchange of competence and experience.

Primarily it is the users (civil protection agencies) who puts the frame of the network's agenda, but the network has also been working with tasks together with the Land mapping group. The largest of these tasks was the project called Harmonized Cross Border Data (HCBD) where three use cases (forest fire, search and rescue operation, and pandemic) in border areas between the countries were decided to be tested with standardized services from ELS (European Location Services).

Over the years the network has also been working with questions concerning e.g. symbols and data sharing.

The network will continue maintaining the agreement incl. appendix and share experience. Relevant topics to discuss, look further into and analyze will be decided from meeting to meeting and study visits will be made at authorities/agencies who can contribute to the development of the sector. Beside this the network will follow up the development of for e.g. sensors, positioning data and different technologies.

What is the outcome, what do the organizations gain from the network?
Increased understanding for and the possibility to look into how the other Nordic countries handle similar issues. It also gives opportunities to get to know Nordic colleagues and to cooperate and coordinate processes and information that hopefully can help to improve operations in the field.

Which organizations are part of the network, and do you have a chair?
The following organizations are part of the network:

- Landmælingar Íslands
- Ríkislögreglustjórinn/Almannavarnadeild, Íslands
- Styrelsen for Dataforsyning og Effektivisering, Danmark
- Rigspolitiet, Danmark
- Lantmäteriverket, Finland
- Inrikesministeriet, Finland
- Kartverket, Norge
- Politidirektoratet, Norge
- Direktoratet for Samfunnssikkerhet og beredskap, Norge
- Lantmäteriet, Sverige
- Polisen, Sverige
- Myndigheten för Samhällsskydd och beredskap, Sverige

The group has a chair from one of the mapping agencies. For the time being it is Lantmäteriet who is chair.

INSPIRE

The Nordic INSPIRE Network was formed in 2007 when the INSPIRE directive was adopted. The network is comprised by representatives from authorities responsible for the implementation of the Directive in the Nordic countries.

The network is a platform for knowledge sharing and exchange of experience concerning the implementation of the INSPIRE directive and issues related to the NSDI´s in the Nordic countries. The network serves as a forum for discussion and adoption of possible joint Nordic positions e.g. in regards to proposals from the EU Commission, meetings in the INSPIRE Committee and MIG (the Commissions expert group on Maintenance and Implementation with representatives from each member state).

The network contributes to the coordination of Nordic participation in the Commission's working groups, in order to secure Nordic views as well as minimizing the resource effort.
For that purpose, the network maintains a list of Nordic participants in the Commission's working groups.

The network obtains expert assistance where and when deemed necessary e.g. by inviting national experts to the network meetings or by setting up dedicated webinars.

The Directive is nearly implemented (deadline 2021) and the Nordic network is therefore increasingly focusing on the use and the value creation of INSPIRE data and services – in national eGovernment context as well as in different EU initiatives such as the Open Data / PSI Directive.

As more and more EU programs and directives refer to the re-use of INSPIRE data it is important for the Nordic countries to seek influence on how this is done in order to secure that value is harvested from the implementation of the Directive. Furthermore the sharing of experiences on technical execution and on concrete use of INSPIRE data can feed into future national strategies as well as implementation projects.

What are the outcome, what do the organizations gain from the network
The sharing of knowledge and actual experiences provides valuable support to the Nordic countries in their implementation of Directive. It is not possible to obtain this only on a national level.
Having a common Nordic voice in EU has proven powerful in many cases and has given the Nordic countries direct influence on important issues and legal proposals from the EU Commission. This is still the case when dealing with new EU initiatives where INSPIRE data and services has a role to play.

Which organizations are part of the network, and do you have a chair:
The network is comprised by representatives from the Nordic NMCAs, and in some cases the Ministries legally responsible for the Directive and the Environmental Agencies.
Iceland: National Land Survey of Iceland, the Ministry for the Environment and Natural Resources and The Environment Agency of Iceland
Norway: Kartverket, Ministry of Local Government and Modernisation and Miljødirektoratet
Finland: National Land Survey of Finland, The Ministry of Agriculture and Forestry and Finnish Environment Institute
Sweden: Lantmäteriet, Swedish Environmental Protection Agency
Denmark: SDFE, The Danish Environmental Protection Agency

Chairing of the Network is passed from country to country following the meeting rotation.

Face-to-face meeting approximately every 6th month with the possibility of virtual participation. Virtual meetings and webinars are arranged ad hoc when needed.

Nordic Standardization group

The Nordic group on standardization was formed as a group within the Nordic Association for Geographic Information (GI-Norden) during their meeting in Voss in the 1990's. From year 2000, it was organized as group independent of GI-NORDEN and with regular meeting, twice a year, in conjunction with the ISO/TC 211 plenary meetings.

The Nordic group on standardization has followed European standards in the remit of CEN/TC 287, working actively for transferring the workload to ISO/TC 211, and followed and influenced this work up to today.

The purpose of this group is to discuss standardization activities in ISO/TC 211, CEN/TC 287 and OGC, like:

- enable a better understanding of the standards by presentations and discussions;
- consider where the Nordic countries have joint requirements/needs;
- ensure that the business plans of the respective committees aligns with the Nordic needs;
- discuss comments on standards during the process;

consider new work item proposals and the preparation for voting.

What are the outcome, what do the organizations gain from the network
The members of the group have a forum where it is possible to discuss standardization issues within the geospatial domain in order to be well prepared for participation in international standardization meetings. These discussions will in most cases only be possible to have at a satisfactory level with peers in the Nordic countries. It is important to stress that this group does not take decisions on comments/vote to international standards; this is the responsibility of each member nation. But discussions among the Nordic countries influences and in some situations aligns national comments and vote, and makes the Nordic countries and the Nordic view more influential at the European / global scale.

From time to time, the discussions at meetings have resulted in workshops at the following meeting, e.g. GIS-BIM or more recent a joint workshop (between the NOSIN and the Nordic Standardization Group) held on request from the Nordic IT directors with the topic "API for features and linked open data".

Which organizations are part of the network, and do you have a chair:
The participants are members of the national delegation attending the upcoming ISO/TC211 meeting. Which means that the participants comes from members of the national mirror committees of ISO/TC211, i.e. representing the national standardization bodies, members of various organisations (e.g. Norway Geological Survey, The Swedish Nautical Chart Department, Swedish Rail, The Norwegian Public Roads Administration) as well as the national mapping agencies.

Hosting the meetings in the group, circulate among the Nordic nations. The chair and secretary are representatives from the hosting nation.

How often do you meet: Prior to each ISO/TC211 meeting, i.e. twice a year in the spring and in the autumn.

Nordic Open Source initiative – NOSIN

The Nordic Open Source Initiative was formed 2010 by the Director Generals of the Nordic Mapping Agencies. The group was founded on the successful co-operation in the joint development of GeoNetwork – a metadata catalogue used in the implementation of the INSPIRE directive.

NOSIN work is divided into three working groups: Service and Data Infrastructure, Linked Open Data and Metadata. The three working groups work mostly separately, but also common meetings are arranged when necessary. An annual physical meeting is arranged for the whole group.

Concrete results have always been important for NOSIN. While the work is often exchange of experiences and knowledge, also specific tasks are solved. The experiences are often very "hands-on" so that we discuss different open source solutions for different needs in all participating countries.

The official mandate of the group is:

1. On behalf of the Executive working group "Development and IT", carry out given relevant tasks and subsequently report back progress and results.
2. To jointly evaluate, develop and configure open source software solutions for national and for INSPIRE spatial data infrastructures in participating countries.
3. Share tech knowledge and experience on SDI´s and form common Nordic viewpoints and strategies on these issues as input to our participation in the INSPIRE MIG workgroups.

What are the outcome, what do the organizations gain from the network
Joint development saves resources as costs can be shared. Knowledge and experience exchange help avoiding pitfalls as we can learn from each other. Furthermore we respond to requests from the Nordic IT group, in 2019 we had a shared goal with the standardization group "Deliver a documented and working pilot on WFS 3.0 and Linked Open Data within November 2019".

Which organizations are part of the network, and do you have a chair:

- Lantmäteriet, Sweden
- Kartverket, Norway
- National Land Survey, Finland (current chair until May 2020, Timo Aarnio)
- Landmælingar, Iceland
- Styrelsen for Dataforsyning og Effektivisering, Denmark

The chair changes every second year in May/June.

How often do you meet:

Typically, one physical meeting per year for the whole group. Sub-groups meet online regularly, once a month for Service and Data Infrastructure and as needed for the two other sub-groups.

Competence and governance

The Competence and Governance working group was founded in the Stora Chefsmöte 2015, where Administrative group (Economic and Personnel) was replaced by a Competence and Governance WG.

The main purpose of the network is strategic collaboration within the Competence and Governance area with the purpose to:
1. Speed up the process of competence sharing and development according to the strategy, and in line with present needs and future trends
2. Improve management approach to organizational development that reflect technical and business reality in our society
3. Discuss competence and governance issues, exchange ideas and areas for further collaboration within the NMCAs.

WG works aligned with the strategic NMCAs goals *Efficient organizations* and *Shared competence*. Current activities under *Strategy Goal 4. Efficient organizations* include themes such as "Measure benefits for the society: SROI" and "Sustainability: SDGs and strategic alignment". Furthermore, activities for *Strategy 5. Shared competence* are e.g. "University co-operation", "Employer branding", "Key NMCAs capabilities", "Change Management", "Work in multiple locations and flexible working hours", "Method for competence discussion".

The NMCA in Finland, Iceland, Norway and Sweden are planning to have a coordinated mentor/training program for their staff in International Services/Foreign Aid. The purpose of this program is to improve skills of the staff at the agencies who are interested in working in development projects.

Future plans include themes e.g. "Co-operation model between agencies and ministries", "Sustainable development and strategy work", "Mentor/training program for their staff in International Services", "Digital competence - How to fully utilize technological development, AI, machine learning", "Competence in the future", "Employer branding" and "Staff exchange and mobility".

The WG enables exchange of experience and best practices on Competence and Governance area, which is critical for each NMCA. It can also be used to solve together specific tasks such as staff exchange practices, productivity measurement or common competence management issues.

What is the outcome, what do the organizations gain from the network?
For every NMCA it is critical to have excellence in Competence and Governance area. This WG enables a forum where it is possible to share best practices and solve together specific challenges related to Competence development and Governance. It also gives opportunities to meet Nordic colleagues and to co-operate and coordinate development to avoid overlapping activities.

The WG delivers an annual status report.

Which organizations are part of the network, and do you have a chair?
The network is comprised by representatives from the Nordic NMCAs:
Iceland: National Land Survey of Iceland (Landmælingar Islands)
Norway: Norwegian Mapping Authority **(**Kartverket)
Finland: National Land Survey of Finland **(**Maanmittauslaitos)
Sweden: Lantmäteriet

This WG follows Nordic co-operation guidelines from 2014: "*working group must have a nominated Chair country for the group. The Chair shall be appointed for a 2-year period.*"
Currently National Land Survey of Finland is the chair (nominated in June 2018).

How often do you meet? We have an annual face-to-face meeting, which is held usually in June. Virtual meetings are arranged ad hoc when needed.