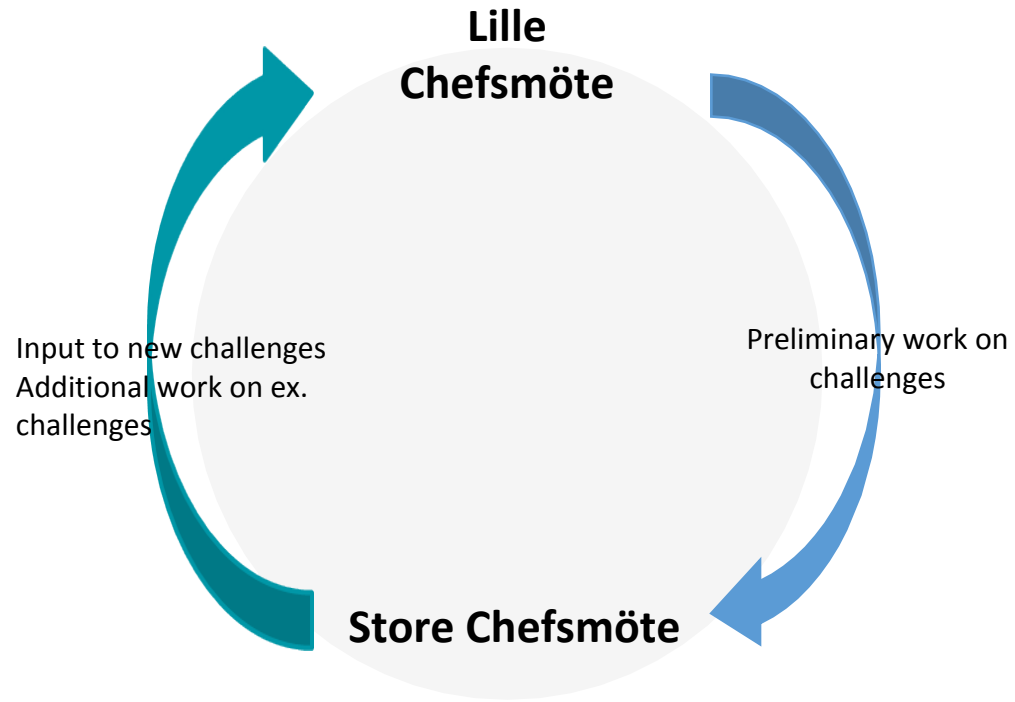


Report from NIC

- Report in accordance with our year wheel
- Follow up from Lille chefsmöte

Annual planning wheel (ad hoc groups)

- At Lille Chefsmöte presentations with "challenges" are put forward to DG's
- Preliminary work on "challenges" is carried out by groups and presented for approval at Store Chefsmöte.
- Mandate for additional work to be carried out for the next Lille Chefsmöte.
- Example: Ad hoc Group on GDPR.



Organisation of work

Ad hoc group

Work on specific high priority "challenges", identified by Directors

(example: GDPR)

Working group

Work on issues in relation to "on-going operations" as a mapping agency

(example: Cadastre group)

Network groups

Knowledge exchange on specialized areas and skills

(example: Inspire implementation)

Ad hoc groups and challenges

- Machine Learning:

Preliminary work has been carried out for discussion and approval at store chefsmöte

- How might new technology improve the quality of Cadastral information and processes

Ajusted challenge from lille chefsmöte for discussion and approval at store chefsmöte

- PSI: People have been appointed for future work and coordination

Group has been created, but in a pending state so far.

Machine Learning

“What is the role of the Nordic NMA’s in a Machine Learning context”

Scope of group

The overall goal of the ad-hoc group is to answer the crucial question focusing on mapping, updating of map data and QA of map data from aerial data acquisition. Apart from answering the crucial question, the main goal is to share knowledge across the Nordic countries and help give momentum to the use of ML in mapping. Both identifying the use cases where ML has the biggest potential and getting from research into production is of big importance and will be looked at.

Possible roles for NMA could be:

- As a provider of ML ready data
- As a provider of ML ready data, how do we generate and work with training data
- As an In-house developer of ML algorithms
- As a user of ML services (from ESRI, Bentley, FME)
- As an instigator driving use and development, pushing e.g. universities, business etc.

Machine Learning

Answering the crucial question will be achieved through discussion between interested Nordic NMAs at a number of web meetings and if possible, a physical meeting near the end of the project.

- Possible benefits from the project
- Shared knowledge
- Shared training data
- Shared algorithms
- Shared common workflows

Time frame and Roadmap

- Kick off webinar - sep 2020
State of development: Show and tell half day webseminar, where each country present the state of ML in their respective mapping agencies
- Core group to create a survey/questionnaire concerning practical and strategic views on ML
- Each country to fill out the **survey** Selection of relevant deep dive topics and a single deep dive if time permits
- Core group to compile project presentation
- Presentation of findings at the “Lille Chefmøde” end March 2021

Possible additional work:

- Number of **deep dive meetings** with focus on specific topics, e.g. specific use cases, specific algorithms, training data, strategic consequences of ML etc.
- Core group to compile project presentation
- Presentation of findings at the “Store Chefmøde” end august 2021

Machine learning

Questions, discussion and decision

How might new technology improve the quality of Cadastral information and processes?

New technology is developing fast and will affect our NMCA organizations. We need to understand how this might change our business for the coming years. We suggest that an ad hoc group will be formed to explore new technologies and find how it might help us improve the quality and/or affect Cadastral information and processes.

Format:

- Ad hoc group formed that will review key technologies and the key questions.
- Open workshop(s) will be held with experts in different technology areas, and opportunities and threats to Cadastral information and processes will be explored.

How might new technology improve the quality of Cadastral information and processes?

Key technologies:

- Augmented reality and GPS accuracy of modern mobile phones.
- New possibilities with drones and satellites images.
- Virtual reality, new accurate elevation models, 3D Cadaster etc.

Key questions:

- How accurate and relevant is the technology and what is on the horizon?
- What and how might new technology disrupt our business?
- How might we use this technology to transform our processes? Can use cases and projects be created to test that?
- What players might use this technology and be our partners or competitors?

Delivery:

- Ad hoc group gives key finding and possible joint projects to the Lilla Chefs möte 2021.

How might new technology improve the quality of Cadastral information and processes?

Questions, discussion and decision

PSI – Public Sector Information

The group has been in a pending state so far. The need for Nordic coordination is growing now when concrete proposals on the level of regulation are being finalized for PSI. For the next coming 6 to 12 months the work of the PSI ad hoc group is likely to focus on the exchange of national findings, comments and experiences on the planned regulation.

Work groups

Work Groups

- Cadastre
- IT & Development
 - Nosing- Open source
 - Nordic standardization
- Landmapping
- Land registration

Cadastre - Plans for year 2020-2021

Title and purpose/benefit of the task	Main deliverables	Expected completion
<p data-bbox="606 482 1021 511">NCWG Meeting in Finland in May</p> <p data-bbox="703 558 1110 729">We are sharing ideas and strategies. NCWG have a responsibility of contents and quality improvement of cadaster data.</p>	<p data-bbox="1156 482 1712 772">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.</p> <p data-bbox="1156 815 1574 843">Exact agenda will be clarified later.</p>	<p data-bbox="1732 482 2252 551">Presentations & discussions, Hämeenlinna, Finland, May 2021.</p> <p data-bbox="1732 594 2168 662">Countries can support each other at cadastral matters.</p> <p data-bbox="1732 705 2270 773">Every country can bring to discussions issues which are important and/or actual for them.</p> <p data-bbox="1732 816 2277 845">Discussion about long-term strategic matters.</p>
<p data-bbox="606 925 1103 953">Set of Skype meetings, 9/2020 – 4/2021.</p> <p data-bbox="606 1001 1072 1065">Actual issues and preparing to annual meeting in Finland.</p>	<p data-bbox="1156 925 1676 1029">In each meeting one member country presents e.g. 1-3 actual issues they want to introduce or/and bring up to discussion.</p>	<p data-bbox="1732 925 2244 993">Same as at the above, but focus is more at current questions / matters.</p>

Cadastre - Results achieved in 2019/ 2020

Title and purpose/benefit of the task	Main deliverables	Materials can be found here:
Quality improvement of cadaster data, including backgrounds, information and finance.	Case Norway presentation and discussion/benchmarking.	All NCWG members.
Covid-19 pandemic situation. (this matter bypassed several issues, which were at original plan)	Influences in cadastral surveys and/or maintenance of cadastral registers. What kind of solutions has come up for taking care of difficulties encountered. Presentations from all countries, discussions and learning from others.	All NCWG members.

IT & Development - Plans for year 2020-2021

Title and purpose/benefit of the task	Main deliverables	Expected completion
1. Machine Learning, how to support the organizations evolvment from PoCs to product line	See separate document.	2020-MM-DD?
2. Agile product teams including devops approach, maturity	Written report with contributions from the members will be made available for the agencies and the other working groups.	Knowledge sharing, best practices. Continuously
3. Automated landmapping	Work to be agreed together with Landmapping group. Work on a joint-case.	2021-06
4. Digital collaboration arenas / Digital Workplace	Written report with contributions from the members will be made available for the agencies and the other working groups.	2021-06
5. GIS-applications (open source and commercial systems) and their interactions with databases, IT infrastructure etc.	Written report with contributions from the members will be made available for the agencies and the other working groups.	2021-06

IT & Development - Results achieved in 2019/ 2020

Title and purpose/benefit of the task	Main deliverables	Materials can be found here:
1. Cyber security considerations	Material based on Norwegian Security 2021	Material has been shared within the working group. (E-mail)
2. Workshop covering Linked Open Data and OGC API Features		
3. Agile product teams including devops approach, maturity	Workshop based on Swedish experiences	Knowledge sharing, best practices. Material has been shared within the working group. (E-mail) Continuously
4. Discussion on use of open source / commercial systems	Common meeting/workshop in Helsinki with Land Mapping WG	Minutes and some presentations shared in Google Drive

Landmapping - Plans for year 2020-2021

Title and purpose/benefit of the task	Main deliverables	Expected completion
User needs and user knowledge / Determine if there are common methods between the Nordic countries regarding user knowledge, how to measure the use of our data etc. through experience sharing. Establish common focus areas, describing opportunities and challenges in each.	Report on comparison of the different countries approach to user knowledge. Defining what areas we can collaborate on, through ecosystems, trends and strategic direction.	Lilla Chefsmøtet – spring 2021
Open source vs commercial technology – technology policy / Exchange policies, challenges and trends on technology regarding open source vs. Commercial (in cooperation with ITGroup)	Summarize the situation and existing policies in each country and identify and highlight common questions, challenges and plans – in cooperation with ITGroup	Lilla Chefsmøtet – spring 2021
3D and BIM / Exchange needs and ongoing activities. Look for common denominators and possible collaboration	Report on <ul style="list-style-type: none"> • ongoing activities and the NMAs planned roles in each country • Common denominators • Possible cooperation 	Stora Chefsmøtet – autumn 2021
In land report Knowledge exchange	Presentation from each country in the meetings	
Future trends, report on UNGGIM Exchange trends and discuss possible impacts on our strategies	Discuss main topics of common interest within the LM Group and outline main trends that should be looked closer into by the LMGroup	Lilla chefsmøtet – spring 2021
Historic and planned data (4D). Lifecycle data management Exchange challenges and planned or ongoing activities and look for best practice	Put together an overview of the situation in the nordisc countries	Stora chefsmøtet –autumn 2021

Landmapping -Results achieved in 2019/ 2020

Title and purpose/benefit of the task	Main deliverables	Materials can be found here:
<p>User needs and user knowledge / Determine if there are common methods between the Nordic countries regarding user knowledge, how to measure the use of our data etc. through experience sharing. Establish common focus areas, describing opportunities and challenges in each.</p>	<p>Two meetings held in 2020, one early (before covid 19) and one digital hosted by Finland. The work has been presentation of each country's methods on user knowledge, strategy and issues concerning those.</p>	<p>Links to presentations will be added later</p>
<p>Open source vs commercial technology – technology policy / Establish a policy on technology (in cooperation with IT-Group?)</p>	<p>Second day of the meeting in Helsinki was together with the IT Group. Each country had one presentation – and we had a common discussion afterwards. Lifecycle cost, risks, usage and architecture was central issues in the discussion. The two WGs agreed that close cooperation between the two groups is important and should be continued. Machine learning is another item to discuss between the groups.</p>	<p>Presentations Finland - link to slides Iceland - link to slides</p>

Landmapping - Results achieved in 2019/ 2020

<p>3D and BIM / Exchange needs and ongoing activities. Look for common denominators and possible collaboration</p>	<p>The task was discussed in the Helsinki meeting based on presentations from Stora Chefsmötet 2019. There are both similarities and differences in what goes on in each country and what role the NMAs shall take regarding questions of 3D and BIM. Finland and Norway agreed to start a communication between our two countries. Two Skype-meeting has been arranged before summer.</p>	<p>Presentations from Stora Chefsmötet 2019 https://norden.lmi.is/index.php/organisation/board-3/extended-directors-meeting/stora-chefsmote-2019/</p>
<p>In land report Knowledge exchange</p>		<p>Sweden – link to slides Iceland – link to slides Finland – New strategy - link to slides Spatial data programme - link to slides Norway - link to slides</p>
<p>Future trends, report on UNGGIM next year / Exchange trends and discuss possible impacts on our strategies</p>	<p>The document has been in process by UNGGIM till no, and each country has had the possibility to submit feedback. Sweden held a short presentation about the process - No further common activity within LM Group</p>	<p>Swedish presentation Future Trends</p>
<p>Historic and planned data (4D). Lifecycle data management</p>	<p>No activity started</p>	

Landregistration - Plans 2019/ 2020

Title and purpose/benefit of the task	Main deliverables	Expected completion
<p>Key figures; more sharing of details behind the figures. The key figures are supposed to be a base for dialog and sharing of experience and the current status within each authority. The group has decided to share more details behind the figures in order gain more knowledge and understanding.</p>	<p>Key figures, individually produced by all the Nordic countries and compiled into one single document on a yearly basis.</p>	<p>Once every year. The document is compiled before each meeting with the working group.</p>
<p>Further sharing of information about financial matters</p>	<p>Due to the covid-19 situation the planned meeting on Faroe Islands was postponed and the subject has not yet been discussed. Hopefully the meeting will be held during 2021.</p>	<p>2021</p>
<p>GDRP – how does it affect the land registration authorities</p>	<p>Due to the covid-19 situation the planned meeting on Faroe Islands was postponed and the subject has not yet been discussed. Hopefully the meeting will be held during 2021.</p>	<p>2021</p>
<p>Consequences of digitization to the employees and work; how to hold on skilled employees, what kind of employees are needed in the future?</p>	<p>Due to the covid-19 situation the planned meeting on Faroe Islands was postponed and the subject has not yet been discussed. Hopefully the meeting will be held during 2021.</p>	<p>2021</p>

Landregistration – results achieved 2019-2020

Title and purpose/benefit of the task	Main deliverables	Materials can be found here:
Explore EIDAS and digital authorization further	Presentation (from meeting in Finland)	
Further sharing of knowledge and experience of digitization and automation	Presentation (from meeting in Finland)	
Nordic network of land registration lawyers has started. The contact information has been exchanged. Knowledge of each nordic countries legislation has been shared and counseling in legal questions has been given.(Work began in 2018)	Contact information has been shared And has been used.	

Report from work groups

Questions, discussions and approval

Existing Networks

Networks

- Competence and Governance
- INSPIRE
- KrisGis
- Nordisk Adresseforum
- Nordic network on laser scan and dem

- NKG

Materials from the networks will be available on the website

Follow up from Lille chefsmöte

- *Collaboration between working group needs to increase and how can this be facilitated?*
- *The NIC-group should be asked to ensure crisper description on how the working groups can contribute to the organisations in the future.*
- *The NIC-group should be asked to investigate on how to incorporate the Networks more in the Working groups (if needed) to ensure that the number of groups are limited.*
- *The IT and development group should update their mandate and focus on what is unique for them, for us and what they should focus on.*
- *NIC is asked to present an update on the implementation at the coming Storchefsmötet.*

How can the Collaboration between the working groups increase and how can this be facilitated

- Common skype-meetings arranged in accordance with the year wheel and facilitated by NIC
- Material and findings on the web
- Other good ideas?

How can the Networks and WG benefit more from each other and contribute to the organizations

- Make material and findings available
- Communicate to the organizations
- Other good ideas ?

Updated mandate from the It & Development group

Description of the subject. What issues/problems are the group working with? What are the future plans.

The IT Working Group is exchanging experiences and knowledge/ best practice for those specific areas of it and digitalization where the IT organizations of the [Nordic cooperation in the fields of spatial data and land administration](#) have specific common interests that are not shared with others.

Mandate:

The IT group will identify common points of interests from the agencies and seek collaboration with the other working groups in order to address the prioritized topics within the geo information area from the role of the IT organizations. The goal is to support most effectively the needs of the business area with digital competencies, architecture and security.

Deliveries for the next year made as best practice recommendations:

1. Machine Learning, how to support the organizations evolution from PoCs to product line
2. Agile product teams including devops approach, maturity
3. Automated landmapping
4. Digital collaboration arenas
5. GIS-applications (open source and commercial systems) and their interactions with databases, IT infrastructure etc.

Written reports with contributions from the members will be made available for the agencies and the other working groups.

What are the outcome, what do the organizations gain from the network

- The agencies will receive a report with the share best practice, experiences and knowledge to support the business area deliverables.

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

- Finland, Sweden, Norway, Denmark and partly Iceland. Current chair Sweden. The chair will shift every year.

Thank you