

Status report

Baltic Sea and North Sea Marine Spatial Data Information Working Group (BS-NSMSDIWG)

Submitted by:	Chair of BS-NSMSDIWG, Denmark
Executive Summary:	This report reviews the work group's findings, status and the planned next steps.
Related Documents:	C-17 - Spatial Data Infrastructures: The Marine Dimension - Guidance for Hydrographic Offices Development of Spatial Data Infrastructures for Marine Data Management, OGC-IHO MSDI Concept Development Study (MSDI-CDS)
Related Projects:	UN-GGIM Working Group on Marine Geospatial Information, Arctic SDI, ARHC MSDIWG, IHO MSDIWG and OGC MDW.

This report contains the current status and planned actions of the BS-NSMSDIWG.

BS-NSMSDIWG

Meetings held during reporting period

The Baltic Sea and North Sea Marine Spatial Data Infrastructure Working Group (BS-NSMSDIWG) online meeting No. 8 took place August 24 - 25 2020. MS from the North Sea Hydrographic Commission and the Baltic Sea Hydrographic Commission participated in the meeting. External stakeholders also attended the meeting. See *Annex 1. The BS-NSMSDI agenda and Annex 2. List of participants*.

The overall aim of the workshop was to create a common MSDI framework and to receive input from external stakeholders on items relevant from a regional MSDI approach. The meeting evaluated and created a new BS-NS MSDI work plan for 2021 to 2024, with a focus on how the BSHC and NSHC can benefit from a regional approach to MSDI. The meeting also evaluated the status on the different existing action items and agreed on establishing new action items.

Day 1.

In order to create a common MSDI framework and an update on national status with relation to SDI and MSDI implementation, members of the wg gave national MSDI presentation related to:

- The national SDI cooperation
- INSPIRE
- EMODnet
- The framework for maritime spatial planning in Europe (MSP-directive)

The presentations also included topics with relation to the key successes and challenges within the four pillars from the IHO publication C-17. (ref. C-17, 2.1. Policy and Governance, Technical standards, Information systems and Geographic content).

The presentations from external stakeholders were divided in two timeslots. On day one, the external presentations focused on relevant working groups and initiatives relevant from a regional MSDI perspective.

- UN-GGIM Working Group on Marine Geospatial Information
- OGC Marine Domain Working Group
- S-121 for maritime limits and boundaries
- EMODnet Bathymetry

Why is this important - MSDI

- A regional MSDI must be built on a foundation of binding legislation within member states and treaties agreeing boundaries between them.
- Many MSDI activities partition human activity in the marine space
 - Marine Spatial Planning
 - Environmental agreements
 - Fishing Zones
 - Marine Cadastre
 - Energy Production
 - Maritime transport routes and traffic flows,
 - Military training areas,
 - Marine protected areas,
 - Scientific research,
 - Submarine cable and pipeline routes,
 - Tourism,
 - Underwater cultural heritage
- These activities ALL use Maritime Limits and Boundaries features as the foundation for their legal and spatial extents.
- S-121 provides a standard to hold and exchange this data

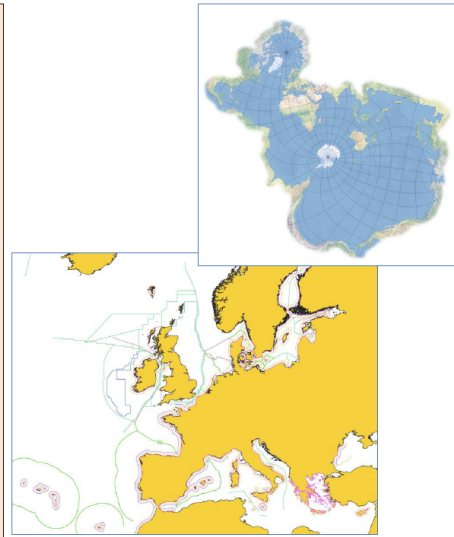


Figure 1. From the presentation about S-121. Maritime limits and boundaries

EMODnet Bathymetry: Consortium

- 41 collaborating European organizations
 - **Hydrographic Offices**
 - **Research Institutes**
 - **Small and medium-sized enterprises**

EMODnet | **BATHYMETRY**
Understanding the topography of the European seas

Figure 2. From the presentation about EMODnet Bathymetry.

After the presentations there was a discussion on the how to proceed in a forward-looking perspective. It was agreed that the BS-NSMSDIWG should investigate how the BSHC and NSHC could work with S-121 and if it was possible and desirable to establish at pilot project with the North Sea and Baltic Sea as an S-121 testbed. This would especially be relevant from a MSP perspective. A new call for EMODnet bathymetry was presented to the group and whilst it was agreed that the not all BSHC and NSHC MS were included, they should investigate the possibility of participation in this new call and if interested contact SHOM (Thierry.Schmitt@shom.fr).




Figure 3. The BS-NSMSDIWG members and external stakeholders attending day one.

Day 2.

On day 2 of the workshop the MS focused on reviewing the action plan and the way forward, updating the work program, and planned actions in order to address how the BSHC and NSHC can benefit from a regional approach to MSDI in the future. A new draft work plan for 2021 – 2024 was established and the Action list updated. See *Annex 3. Draft Work plan 2021 – 2024. and Annex 4. Action items.*

Presentations on day 2 from external stakeholders focused on Marine geospatial data supporting the MSP value chain. The external stakeholders represented stakeholders on projects from the Baltic- and North Sea. Below is an overview of the presentations:

- Overview of the BSR MSP Data ESG works.
- Introduction to the Baltic MSP data services.
(BASEMAPS, HELCOM Map and Data Service, EU MSP Technical Expert Group on Data for MSP.
- The EMODNET-MSP perspective and the new EU data strategy.
- Pan North and Baltic MSP project
- DigiTwin Northsea – MSP Challenges.



EU MSP Technical Expert Group on Data

- Established by **EASME** and **DG MARE** in 2020
 - Chair Andrej Abramic (ULPGC), co-chair Joni Kaitaranta (HELCOM)
- Tasks according to ToR
 1. Work across sea basins to identify the needs in the area of MSP data for implementation;
 2. Produce guidelines (not mandatory) on necessary data, standards for MSP and links this activities with other relevant policies (MSFD, INPSIRE, COPERNICUS, EMODnet, etc);
 3. Work on standard parameters that allows MSP plans to be harmonized across sea basin regions and across EU, if possible in line with the INSPIRE Directive;
 4. Assist in the production of a European portal containing information on MSP plans.
- Currently focus is on developing data format and vocabulary for “**MSP output data**” for the whole Europe (feeding into tasks 3 and 4)

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- Group is organized to subgroup 1 (for Tasks 1-2) and subgroup 2 (for Tasks 3-4)




Figure 4. From the HELCOM presentation.

eMSP North & Baltic Seas 2030 project

ecosystem based approach, electronic, effective ocean governance, eu biodiversity & green deal, economic blue development, and enhancing climate change management in MSP

An idea to discuss and take forward...

Ludewik.albanor@ministry.eu
9 July 2020 – adjusted following webex meeting 8 July



Ambition of the call

Applicants are required to address the following priorities in their proposals:

1. Support the work of MSP competent authorities and/or inter-ministerial bodies in the establishment and adoption of [ecosystem based] maritime spatial plans;
2. Where relevant, support the development of cross-border cooperation on MSP with bordering Member States and third countries with a view to ensure that maritime spatial plans are coherent and coordinated across marine regions concerned;
3. Making use of the best available data and organise the sharing of information, necessary for maritime spatial plans, by using relevant mechanism and tools (e.g. INSPIRE, EMODNet).

Figure 5. From the presentation about the Pan North and Baltic MSP project.

Following the presentations, there were discussions on how the Baltic- and North Sea hydrographic offices and their hydrographic data sets can be used to support MSP initiatives in the future, and how to cooperate from a regional and national perspective. Some of the conclusions were to investigate the possibilities to establish a joint online meeting between the EU MSP Technical Expert group on data and the BS-NSMSDIWG in order to share information and to identify areas of cooperation. It was also agreed that the BS-NSMSDIWG should follow the EU project eMSP in order to investigate possibilities for cooperation.

On day two the idea about arranging a BS-NSMSDI hackathon was presented and after the presentation about initial considerations there was a longer discussion on how to proceed. The overall and most important goal of a BS-NSMSDI hackathon would be to make national hydrographic offices and hydrographic datasets more visible for different end user on a national and regional level.

BS-NSMSDIWG Marine SDI Hackathon

Use cases:

- Windfarm Siting
- Marine Protected Areas
- Fishery management

Use cases Requirements

- MSDI principles
- A cross-border approach (ref. MSFD, artikkel 13)
- A cross-domain approach
- Inter disciplines
- Based on authoritative sources
- EU MSP principles
 - land-sea interaction;
 - the ecosystem-based approach;
 - coherence between MSP and other processes such as integrated coastal management;
 - the involvement of stakeholders;
 - the use of best available data;
 - transboundary cooperation between Member States;
 - and cooperation with third countries
- MPA; https://www.emodnet.eu/mse/emodnet.eu/Workshop/North_Sea/marine_spatial_data_cooperation.pdf
- Ref. kap. 3

Additional information

- Tjenestebasert
- Bruk av statistikk / tidsserier
- Metadatatilrette
- Bruk av tidsdimensjon
- Aktiv bruk av attributter (filtering, osv)
- Lenking av informasjon

Main resources

- National MSDI
- EMODnet
- INSPIRE
- HO-datasets (core data)
- Authoritative datasets

Time schedule

Questions/Evaluation

Deliverables:

Solutions

- Use of marine data
- Development of relevant tools
- Development of a visualization tool

Evaluation of MSDI principles

- Findable
- Accessible
- Interoperability
- Re-usable
- Quality of:
 - Metadata
 - Geospatial data
 - Web services
- General challenges
- Suggestions for improvements

Danish Geodata Agency

Figure 6. From the Norwegian presentation about a BS-NSMSDI hackathon.

After the discussion the BS-NSMSDIWG concluded that it was a good idea to arrange a BS-NSMSDI hackathon and the goal was in line with the ToR of the WG, there was a need to be more concrete on the goal and what to achieve from a national HO perspective. It was decided to continue the planning of a MSDI Hackathon but due to lack of resources it should be a small scale MSDI Hackathon with HO data and the possibility to cooperate with relevant university and/or stakeholders should be investigated as the possibility to have an online MSDI Hackathon.

At the end of the meeting, the format of the meeting and the online system was evaluated. Even though there was different views, the general approach was positive to the format and the system. The online meeting also allowed almost all BSHC and NSHC MS to participate the meeting and many different external stakeholders to participate, this was seen as a very positive thing and the BS-NSMSDIWG plans with more online meetings in the future.

For more information, see <http://www.bshc.pro/working-groups/msdiwg/>

Next meetings planned

The next meeting of the BS-NSMSDIWG is planned to take place in late 2020 or early 2021 and will be arranged as an online meeting. The main focus will be to follow up on the different action items in order to ensure the necessary progress. It was also decided to plan for a 2 day physical meeting in Norway at the Norwegian Hydrographic Offices in 2021 April or May (dependant on the ongoing health situation). All MS from BSHC and NSHC will be invited to participate in the meetings. The possibility to arrange a 2-days Data Hackathon will be investigated further. It will also be considered to invite other relevant stakeholders and organizations e.g. NorthSEE, OSPAR, EuroGOOS, INSPIRE, HELCOM, VASAB to participate in the BS-NSMSDIWG meeting.

BS-NSMSDI Work Program and Action list

At the eighth meeting of the Baltic Sea North Sea Marine Spatial Data Infrastructure Working Group, the work group went through the existing work program that was approved at the BSHC21 meeting. The work plan is divided in 6 work items and there are relevant milestones and coordinators for each item. The work program focuses on tasks that are considered important and challenging from a regional and a national perspective. It was agreed only to make minor changes to the new work program for 2021 – 2024.

Marine Spatial Planning

EU has published a directive of the European Parliament and of the Council dealing with establishing a framework for maritime spatial planning and integrated coastal management. The main purpose of the directive is to promote the sustainable growth of maritime and coastal activities and the sustainable use of coastal and marine resources by establishing a framework for the effective implementation of maritime spatial planning in EU waters and integrated coastal management in the coastal areas of Member States. The proposal establishes a framework for maritime spatial planning and integrated coastal management in the form of a systematic, coordinated, inclusive and trans-boundary approach to integrated maritime governance. It obliges Member States to carry out maritime spatial planning and integrated coastal management in accordance with national and international law. The aim of the action is for Member States to establish a process or processes that cover the full cycle of problem identification, information collection, planning, decision-making, management, monitoring of implementation, and stakeholder participation. Implementing acts will ensure consistent implementation of the Directive throughout the EU and facilitate reporting from the Member States to the Commission and, where relevant, the exchange of data between Member States and with the Commission. Article 10 in the proposed directive especially focuses on data collection and exchange of information. Article 12 and 13 describes Cooperation with other Member States and third countries.

As seen from a HO perspective a MSDI could support such varied activities as coastal zone management planning and maritime spatial planning including the management of energy production at sea, fishing, marine environmental protection and nature conservation, planning charts, navigation, civil and military preparedness, tourism, and maritime spatial planning.

Conclusions and Recommended Actions

A well-functioning MSDI ensures that relevant maritime authorities can contribute their spatial information and related updates, and that this information can easily be collected with other information to generate a current, overall picture. As a result, MSDI can support such varied activities as coastal zone management, planning of energy production at sea, fishing, marine environmental protection and nature conservation, planning charts, navigation, civil and military preparedness, tourism, and maritime spatial planning.

From a MSDI perspective, it is important that the MS should be the “providers of choice” for authoritative foundational marine/maritime information through engagement and participation in MSDI in addition to their existing navigational role. It is actively strengthening its understanding and knowledge of the role of hydrography in MSDI through its outreach programmes with other SDI stakeholder groups.

From a more practical approach, there is a need for the HO to focus on and strengthen the maritime approach to MSDI and to ensure that maritime information is included. Some of the challenges from a national and regional approach for BSHC and NSHC MS in relation to MSDI are seen as:

- Ensuring that MS participate in the MSDI work
- Ensuring that regional MS HO have the possibility to contribute to the development of the regional MSDI and MSP
- Ensuring the use of data/information provided by HO is fit for purpose for wider dissemination
- Establishing access to Best Practises related to SDI/MSDI

Justification and Impacts

The work in the MSDI WG is progressing well and a supporting updated Action Plan compiled. The Work Programme creates the framework for the WG, in order to cope with the challenges in a forward-looking perspective.

Action required of BSHC 25:

The BSHC 25 is invited to:

- a. Note the report;
- b. Approve the new draft work program 2021-2024
- c. Take note of the new EMODnet call for bathymetry and MS to report to SHOM (Thierry.Schmitt@shom.fr) if they wanted to participate.
- d. Discuss whether the BS-NSMSDIWG should investigate the possibilities to establish a pilot project focusing on S-121 data as a testbed.
- e. Take any other action as appropriate.

Annex 1. The BS-NSMSDIWG8 agenda.

Day 1: August 24, 2020.

Theme	Time	Subject	Responsible
Welcome	0930 - 1030	Welcome, introduction of participants and practical information. Approval of agenda.	Chair
Status		Introduction to the MSDI Online Workshop 8 <ul style="list-style-type: none"> - Aims of the workshop and the meeting - Expected achievements - Status of Action list and Work program 	Chair
		Status on the MSDI work of IHO (MSDIWG) (Review of the papers circulated and responses to it)	Chair
National presentations. Presentations and discussions	1030 - 1230	National presentation from members on the status of MSDI related to: <ul style="list-style-type: none"> - The national SDI cooperation - INSPIRE - EMODnet - The framework for maritime spatial planning in Europe (MSP-directive) Presentations to include; what is the key successes and challenges within the four pillars (ref. C-17, 2.1. Policy and Governance, Technical standards, Information systems and Geographic content. Discussion on how the BS-NSMSDIWG can support MS.	All BS-NSMSDIWG MS All
Lunch	1230 - 1330		
External stakeholders. Presentations and discussions	1330 – 1500 1330 - 1350 1350 – 1410 1410 – 1430 1430 – 1450 1450 - 1500	Presentation from external stakeholders: <ul style="list-style-type: none"> - UN-GGIM Working Group on Marine Geospatial Information - OGC Marine Domain Working Group - S-121 for maritime limits and boundaries - EMODnet Bathymetry Discussion on the how to proceed in a forward-looking perspective.	John Nyberg Sebastian.P.Carisio Jonathan Pritchard Thierry Schmitt All
Evaluation and preparation	1500 - 1530	Evaluation and preparations for the second day (Suggestion to a BS-NSMSDI hackathon)	Chair

Day 2: August 25, 2020.

Theme	Time	Subject	Responsible
Welcome	0930 - 1030	Welcome and the conclusions from Day One	Host/Chair
Status		BS-NSMSDI WG Work plan and Action list - What are the outputs for each task?	Chair
		Action list - working on the tasks defined in the Action list.	Chair/All
MSP Presentations and discussion	1030 – 1230 1030 – 1040 1040 – 1110 1110 - 1120 1120 – 1140 1140 – 1200 1200 - 1220 1220 - 1230	Marine geospatial data supporting the MSP value chain <ul style="list-style-type: none"> - Overview of the BSR MSP Data ESG works. VASAB - Introduction to the Baltic MSP data services. HELCOM. (BASEMAPS, HELCOM Map and Data Service, EU MSP Technical Expert Group on Data for MSP. https://basemaps.helcom.fi) - Joint Q&A <ul style="list-style-type: none"> - The EMODNET-MSP perspective and the new EU data strategy. - Pan North and Baltic MSP project - DigiTwin Northsea – MSP Challenge Discussion on how hydrographic data sets can support MSP initiatives in the future and how to cooperate from a regional and national perspective.	Liene Gaujeniete Florent Nicolas All Corine Lochet Lodewijk Abspoel Igor Mayer All
Lunch	1230 - 1330		
BS-NSMSDI hackathon	1330 - 1500	Suggestion to a BS-NSMSDI hackathon <ul style="list-style-type: none"> - Presentation about initial considerations about a BS-NSMSDI hackathon - Discussion on how to proceed 	Norway All
Work plan	1500 - 1520 1520 - 1525	Update of work plan and action list Any other business Next meeting	All All
Closing	1525 - 1530	Closing of the online meeting	Chair

Annex 2. List of participants.

Country	Name	e-mail	
Netherlands	Ellen Vos	EM.Vos@mindef.nl	
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Denmark	Katrine Petersen	katpe@gst.dk	
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External stakeholders			
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Netherlands	Warmelink, Harald	Warmelink.H@buas.nl	

Annex 3. Draft Work plan 2021 – 2024.

Draft Work plan for BS-NSMSDIWG 2021 - 2024

Theme	Subject	Responsible action item
Task 1. Work item: Common understanding	<ul style="list-style-type: none"> - Establish a framework for common understanding of MSDI - The opportunities and challenges from a national and regional MS perspective - Definition of HO role in MSDI 	
Task 2. Work item: Liaison with external projects	<ul style="list-style-type: none"> - Identify relevant use cases for MSDI - Analyse the user need for relevant HO data set - Identify relevant EU projects and WG's with relevance for BS-NS MS 	
Task 3. Work item: S 100	<ul style="list-style-type: none"> - Conduct a study on visualization of S-100 datasets from a MSDI perspective (Non navigation) - Investigate the possibility to establish a regional S-121 testbed - Evaluate on how to promote S-100 in the Baltic and North Sea 	
Task 4. Work item: INSPIRE	<ul style="list-style-type: none"> - Study on IHO standard S 57 in relation to INSPIRE - The difference between S 57 and S 100 - Identify the challenges with S-102 on interoperability with INSPIRE 	
Task 5. Work item: Hydrographic data and legal aspects	<ul style="list-style-type: none"> - Study on status on implementation and responsibility with relevance to MSDI in the Baltic and North Sea countries 	
Task 6. Work item: Pilot projects/demonstration	<ul style="list-style-type: none"> - Study on the possibility to establish BS-NSMSDI WEB pages - Demonstration project (e.g. S-121 testbed and use of BS-NS MSDI datasets) - WEB GIS demonstrator with BS-NS HO datasets 	

Annex 4. Action items.

Baltic Sea- North Sea Marine Spatial Data Infrastructures Working Group Online meeting 24 – 25 August 2020 Draft Action list.

No.	MSDI Meeting/ Work Task	Action	Responsible	Deadline	Status -Permanent -Done -Pending -Awaits -Closed
1	2/2015 WT 4	Conduct a study from a technical approach to the INSPIRE elevation product specification.	Finland	MSDIWG8	Closed
2	2/2015 WT 5	Investigate status on implementation and legal aspects of MSDI.	Denmark	MSDIWG8	Closed
3	2/2015 WT 6	To consider to initiate a study on how MS should/could present their services and data, including a BS and NS basic MSDI architecture	Finland Sweden	MSDIWG8	Closed
4	1/2016	To prepare a presentation about S-100. Invite Johnathan Prichard to MSDIWG9	Germany/JP	MSDIWG9	Ongoing
5	1/2018	To investigate the possibility to establish a pilot project with the focus on availability/distribution of different S-100 datasets.	Germany and Denmark	MSDIWG9	Awaits
6	1/2018	To investigate the work on non-vector AML and provide a paper to the next BS-NSMSDIWG	Netherlands	MSDIWG8	Closed
7	1/2018	To create a discussion paper/presentation about process data models from a MSDI perspective with regards to IHO, MSP and INSPIRE, S-57 and S-100 and the need for harmonization	Germany	MSDIWG9	Ongoing
8	1/2018	The Netherlands to produce a inf. paper about "Maritime spatial planning supported by infrastructure for spatial information in Europe (INSPIRE)" and circulate it to the BS-NSMSDIWG for comments. After circulation it should be forwarded to EU-IHO NWG	Netherlands	MSDIWG8	Close
9	1/2018	Norway to produce a inf. paper on data quality with relation to bathymetry and circulate it to the BS-NSMSDIWG for comments. After circulation it should be forwarded to EU-IHO NWG	Norway	MSDIWG8	Done
10	1/2018	Investigate the opportunities for the BS-NSMSDIWG and its MS to engage/participate in the INSPIRE work in relation to hydrographic data	Norway	MSDIWG7	Done
11	1/2019	Norway to arrange the BS-NSMSDIWG meeting and MSDI event in April/May 2020/2021	Norway	MSDIWG9	Ongoing
12	1/2019	Norway, Denmark and Germany to discuss on the conceptual approach to the Data Hackathon and MSDI open Forum meeting in 2020. Denmark to initiate. Moved to new action item.	Norway, Denmark, Germany	December 2020	Closed
13	1/2019	To establish a MSDI BC and Indicators framework/template for general use.	Denmark	MSDIWG9	Awaiting
14	1/2019	Establish an EMODnet inf. paper dealing with the challenges from a hydrographic perspective	Norway	MSDIWG9	Ongoing
15	1/2019	To investigate what information about data encryption is releasable and send it to the MS.	UK	October 2019	Ongoing
16	1/2019	UK to forward information about the UN Sustainable Development Goal to the MS	UK	October	Done
17	1/2019	To establish a project description of a S-100 testbed pilot project about distribution	Germany	MSDIWG9	Ongoing
18	1/2019	To establish MSDI/MSP information platforms for the BS and NS.	Denmark	MSDIWG8	Ongoing
19	1/2020	To establish a presentation with relation to standards covering the different approaches to relevant standards	Norway	MSDIWG9	Ongoing
20	1/2020	Investigate the possibility to interact with INSPIRE about HO data	Denmark/ Netherlands	MSDIWG9	Ongoing
21	1/2020	MS to investigate the possibility to participate in the new EMODnet call and report back to SHOM (Thierry.Schmitt@shom.fr)	All	October 2020	Ongoing
22	1/2020	All MS to investigate their national approach to official data and legally binding data/maps with relation to MSDI, SDI and MSP and report back.	All	MSDIWG9	Ongoing
23	1/2020	To follow the development of the UN-GGIM IGIF (water) model.	Chair/UKHO	MSDIWG9	Ongoing
24	1/2020	All MS to send links to their national MSDI and or MSP platform and URL to geospatial services	All	October 2020	Ongoing
25	1/2020	To establish a demonstration showing BS-NSMSDI data available	All	MSDIWG9	Ongoing
26	1/2020	To investigate the possibility to establish a regional S-121 testbed	Denmark MS?	November 2020	Ongoing
27	1/2020	To investigate the possibilities to establish a joint online meeting between the EU MSP Technical Expert group on data and the BS-NSMSDIWG	Chair	MSDIWG9	Ongoing
28	1/2020	To follow the EU project eMSP and report back to the BS-NSMSDIWG	Chair	MSDIWG9	Ongoing
29	1/2020	Netherlands to contact EMODnet in order to investigate the possibility to cooperate with relation a Data Hackathon	Netherlands	MSDIWG9	Ongoing
30	1/2020	Norway, Netherlands and Denmark to discuss the possibility to establish a small scale Data Hackathon with HO data and to investigate the possibility to cooperate with relevant university and/or stakeholders	Norway, Netherlands and Denmark	MSDIWG9	Ongoing
31	1/2020	To arrange a BS-NSMSDIWG online meeting	Chair	MSDIWG9	Ongoing