23rd BSHC Meeting
27 - 29 August 2018
Aalborg, Denmark

Agenda item C4
Status Report
Denmark

Status report of 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
Related Projects:	Arctic SDI, ARHC MSDIWG, IHO MSDIWG, Maritime Economical Information Programme (MEIP)

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

BS-NSMSDIWG

Meetings held during reporting period

The Baltic Sea Marine Spatial Data Infrastructure Working Group (BSMSDIWG) Workshop No 6 took place in Aalborg, Denmark July 3-4 2018. MS from the North Sea Hydrographic Commission and the Baltic Sea Hydrographic Commission was invited to participate in the workshop. Members from, Germany, Poland, Nederland, Norway and Denmark attended the workshop.
The overall aim of the workshop was to create a common MSDI framework and to evaluate the BS-NS MSDI work plan for the Baltic Sea which focus on how the BSHC and NSHC can benefit from a regional approach to MSDI and to have a status on the different action items and agree how to proceed.

Day 1 of the workshop included general presentation from the IHO MSDIWG and national presentation from BSHC and NSHC member states on SDI, MSDI, MSP and INSPIRE and other relevant issues.
Day 2 of the workshop the MS focused on reviewing the action plan and the way forward, updating the work program, and planed actions in order to address how the BSHC and NSHC can benefit from a regional approach to MSDI in the future. *Below figure 1. The BS-NSMSDIWG members attending the workshop*

Next meetings planned
The next meeting no 7 of the BS-NSMSDIWG is planned to take place in Poland at the Polish Hydrographic Offices in 2018 April or May. All MS from BSHC and NSHC will be invited to participate in the meeting. It is planned to have a 3 day long MSDI work shop and to invite other relevant stakeholders and organizations e.g. North See, OSPAR, EURO GOOS, INSPIRE, HELCOM, VASAB to participate in a one day MSDI workshop.

BS-NSMSDI Work Program
At the 6th 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 foreseen to be important and challenging from a regional and a national perspective. It was agreed only to change the action list. See annex A for the new action list.
For more information, see http://www.bshc.pro/working-groups/msdiwg/

Marine Spatial Planning
At the 6th MSDI work shop the implementation of MSP in Baltic Sea and North Sea was discussed.
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.

In order to achieve the goal of the Regional Baltic MSP Roadmap (to draw up and apply maritime spatial plans throughout the Baltic Sea Region by 2020 which are coherent across borders and apply the ecosystem approach), VASAB and HELCOM has established the Baltic Sea Region MSP Data Expert Sub-group (MSP Data Expert sub-group) as a sub-group to the joint HELCOM-VASAB MSP Working Group. The aim of BSR MSP Data Expert sub-group is to support data, information and evidence availability for MSP processes with regard to cross-border / trans-boundary planning issues to ensure comparability of maritime spatial plans in the Baltic Sea Region. The BSR MSP Data Expert sub-group facilitates the work of the HELCOM-VASAB MSP WG, as well as helps with implementation of the Regional Baltic MSP Roadmap 2013-2020. No similar initiatives seem to be established for the North Sea.

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.

IHO MSDIWG

Meetings Held During Reporting Period
The MSDIWG9 meeting of IHO Marine Spatial Data Infrastructures Working Group (MSDIWG) took place in Niteroi (Rio de Janeiro), 30 January – 1 February 2018. The outcome of the meeting is available from the

IRCC section of the IHO Website under the MSDIWG. The MSDIWG meeting was preceded firstly on 29 January by a MSDI Open Forum and after the MSDIWG9 meeting on the 2 February 2018 an OGC Marine Domain WG was arranged.

Figure 2. The participants at the MSDI Open Forum.

The aim of the MSDIWG9 meeting was to focus on MSDI and to propose ways to progress MSDI implementation within the Organisation and its Member States.

Figure 3. The IHO MSDIWG members attending the MSDIWG 9 meeting.

Next Planned Meeting:
The IHO/MSDIWG will hold a day-long MSDI Open Forum, an OGC Marine Domain WG meeting and the MSDIWG 10 meeting in 2019 in Busan, Republic of Korea, on 4 to 8 March 2019. Logistics and meeting details will be available at:

https://www.iho.int/srv1/index.php?option=com_content&view=article&id=483&Itemid=370&lang=en

The IHO/MSDIWG will continue to facilitate a MSDI Open Forum which would allow non-MSDIWG stakeholders (e.g. RHC MS, government, academia, industry, funding bodies and NGOs) to attend to see what the MSDIWG and the commercial partners can offer. Attendees at the Open Forum would then be encouraged to stay on for the MSDIWG10 meeting. This approach is being developed in consultation with the hosts.

The Open Forum meeting will be followed by a three day-long MSDIWG10 meeting at the same venue and the meeting will include WG Work Plan task group break-out sessions. The MSDIWG10 meeting will also be arranged as a back-to-back meeting with the OGC Marine Domain WG meeting. The IHO/MSDIWG will further investigate the possibility to arrange a back-to-back meeting with the newly established UN-GGIM WG on Marine Geospatial Information

The key interest for the IHO is enabling MS to ensure MSDI provides a framework for the provision of hydrographic information beyond the traditional field of surface navigation.

Terms of Reference of MSDIWG:
The MSDIWG Terms of Reference remain unchanged from 2015 and can be found on the IRCC section of the IHO Website under the MSDIWG.

Work Programme
Work Plan 2018–2021. The Work Programme was redeveloped at MSDIWG9 based on recent changes and change in focus on MSDI from a regional and national perspective. In order to deliver this Work Programme eight MSDI Tasks were established. The work programme can be found on the IRCC section of the IHO Website under the MSDIWG.

Any Other Items of Note
Cooperation with the OGC Marine Domain Working Group (DWG)
The MSDIWG are now cooperating with the OGC DWG on a regular basis.


Figure 4. The participants at the OGCMDWG meeting.

The IHO MSDIWG and OGC was invited to participate at the session on Review of the White Paper on Operational Domain Standards for Land Administration on Monday, March 19th at the World Bank in Washington DC. The session took place just before the opening of the 19th edition of the World Bank Land and Poverty Conference. The OGCDWG and the MSDIWG provided a joint input Information Paper: LADM from a Marine Domain Perspective. A MSDIWG member from NOAA gave a brief of the information paper that had been submitted on behalf of the International Hydrographic Organization's Marine Spatial Data Infrastructure Working Group and the Open Geospatial Consortium Marine Domain Working Group. The idea of the paper and presentation was to provide a look at Land Administration from a Marine Domain Perspective.

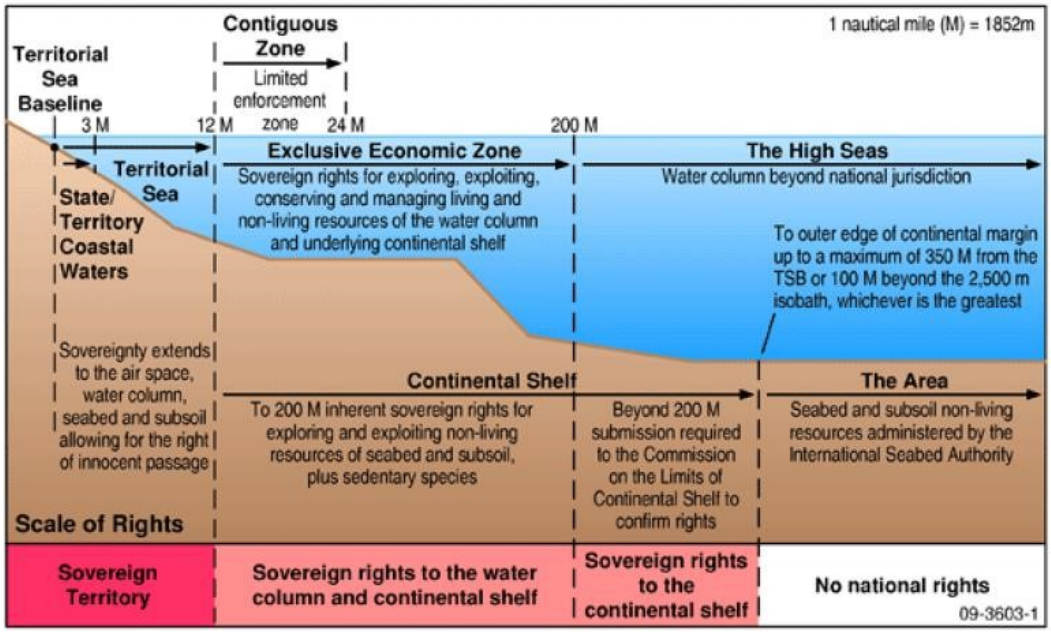

Figure 5. Slide from the presentation. Marine Domain Perspective.

Data Centric Operations and Workflows

Data is the second most important asset in an organization after the people. Data therefore needs to be treated as an enterprise-wide, national and even global asset with tremendous intrinsic value, not only to the organization that captures and/or manages it, but to other potential users as well. In the maritime sector we have been promoting the term "collect once, use many times" for many years in respect of the wider value and utility of, for example, bathymetry data. However, there is other important data held by the HO that has additional or residual value once it has been used to support the business of charting. The terms "data centric" and “With a data centric approach” define operations and workflows that are managed as close to "source" as possible rather than as products. Enabling efficient data sharing, exchange and re-use across government, academia, and commerce thereby stimulates economic and socio-economic benefits, not only to the nation, but potentially across borders with neighboring HOs.

UN-GGIM WORKING GROUP ON MARINE GEOSPATIAL INFORMATION

The principal purpose of the UN-GGIM is to play a leading role in setting the agenda for the development of global geospatial information management and to promote the use of geospatial information in addressing key global challenges, particularly taking into account the role of geospatial data in monitoring and achieving the Sustainable Development goals agreed under the UN 2030 Agenda for Sustainable Development. The UN-GGIM reports to the UN General Assembly via the UN Economic and Social Council (ECOSOC).

At the seventh Session of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) that took place at the UN Headquarters in New York, USA from 31 July to 4 August 2017 it was decided to establish an UN-GGIM Working Group on Marine Geospatial Information (MGIWG). The MGIWG will provide input to the Committee to support its Member States in developing national policy, strategic priorities, decision-making and the monitoring of global developments in relation to their spatial data infrastructures and marine geospatial information management. It should be noted that although the IHO has been recognised as having a fundamental role in marine geospatial information, the terms of reference of the WG indicate a scope well beyond hydrography. The WG is expected to play a leading role at the policy level by raising political awareness and highlighting the importance of reliable, timely and fit-for-purpose marine geospatial information to support the administration, management and governance of the marine environment. It is anticipated that the WG will consider the full range of maritime geospatial information, including met-ocean data.

The UN-GGIM Secretariat has identified the co-Chairs and participation to the UN-GGIM: MGIWG.

The first on-line meeting took place on 26 March 2018. It is anticipated that the first meeting of the MGIWG will take place immediately prior to the next session of the UN-GGIM. The eighth Session of UN-GGIM will take place at the UN Headquarters in New York during the first week of August 2018. The MSDIWG will be represented by several MS.

Draft Guidance for Data Licensing

It is widely recognised that significant creative and economic potential may lie dormant in data locked up and not released on terms allowing re-use. The concepts behind MSDI recognise the potential held in data. However, if data is to be re-used by third parties it needs to be licensed.

The Hydrographic Data Policy Best Practise Guidelines for Hydrographic Offices white paper states 'fit for purpose hydrographic data and information is essential in underpinning evidence based decision making and asset management enabling governments and the commercial sector to deliver their policy objectives for the marine environment and coastal zone'. The paper points out the 'use of this data outside of navigational products has been limited, but the requirement is growing very swiftly across the world'.

A data license provides users with legal clarity on how data can be used as well as defining user obligations. In most jurisdictions there are intellectual property rights that prevent third parties from using, reusing and redistributing data without explicit permission. Even if data is publically available, without a license a user may not have permission to access, use, or share it due to copyright laws. By applying an open license, you enable users the freedom to use your data to experiment, explore and innovate. Attached in Annex E there is a first Draft of Guidance for Data Licensing. The intension is to finalize the draft version at then next MSDIWG10 meeting in 2019.

IHO Concept Development Initiative

The proposal to launch an IHO Concept Development Initiative was presented at the IRCC9 meeting. At the MSDIWG meeting in Vancouver 2017, the MS discussed the possibility to create an OGC study that could establish the framework for future development of MSDI. After the MSDIWG meeting OGC has developed a proposal for a concept development study for MSDI, with the ultimate intent after completion to propose to IHO a full pilot timed for 2018, to be funded by NGA. The initiative will emphasize the rapid evolution of technologies and methodologies for generating non-navigational, location-based information of value to a broad range of users.

IHO MSDIWG 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 (such as the European Commission, UN-GGIM, IOC-IODE), globally, and through the IHO MSDIWG across the HO community. The IHO is a great advocate of MSDI and the need for change stating, along with other stakeholders, that unless MS acts others will provide the authoritative data and in doing so potentially weaken the status of HOs.

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 an international and regional approach for IHO MS in relation to MSDI are seen as:

- Ensuring that MS participate in the MSDI work
- The creation of new regional MSDIWGs will give the MS direct possibility to actively participate in the development of a well-functioning MSDI within the hydrographic domain and its surroundings, with the

possibility to benefit from a national and a regional approach and in that way take the lead in addressing regional MSDI matters for the countries in the region.
- Ensuring that regional MS HO have the possibility to contribute to the development of the regional MSDI
- 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 IHO MSDIWG is well underway and a new Work Programme and a supporting Action Plan has been established. The new Work Programme will establish the framework for the WG, in order to cope with the challenges in a forward-looking perspective.
The creation of new regional MSDIWG will give the MS direct possibility to actively participate in the development of a well-functioning MSDI within the hydrographic domain and its surroundings with the possibility to benefit from a national and a regional approach and in that way take the lead in addressing regional MSDI matters for the countries in the region.

Recommendations from the BS-NSMSDIWG:
- To continue the work of the BS-NSMSDIWG
- To investigate the possibility to arrange a MSDI workshop for the North Sea - and Baltic Sea Council and if accepted. To arrange a MSDI workshop for the North Sea and Baltic Council.
- To investigate the possibility to establish a pilot project with the focus on availability/distribution of different S-100 datasets.
- Investigate possible approaches for the BS-NSMSDIWG to interact with EMODnet in the future within relevant MSDI issues. (e.g. the possibility to invite EMODnet to a MSDIWG meeting)
- Investigate the opportunities for the BS-NSMSDIWG and its MS to engage/participate in the INSPIRE work in relation to hydrographic data

Action required of BSHC23
The BSHC23 is invited to:

a. Note the report
b. Take any other action as appropriate.

Annex A.

Baltic Sea- North Sea Marine Spatial Data Infrastructures Working Group
Denmark 3 – 4 July 2018
Action list.

No.	MSDI Meeting/ Work Task	Action	Responsible	Deadline	Status *-Permanent* *-Done* *-Pending* *-Awaits*
14	2/2015 WT 4	Conduct a study from a technical approach to the INSPIRE elevation product specification.	Finland Norway	MSDIWG7	Ongoing
16	2/2015 WT 5	Investigate status on implementation and legal aspects of MSDI.	Denmark	MSDIWG7	Ongoing
20	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	MSDIWG7	Ongoing
23	1/2016	To prepare a presentation about S-100.	Germany	MSDIWG7	Ongoing
24	1/2016	Investigate if the BS-NSMSDIWG should approach/deal with EMODnet in the future e.g. the possibility to invite EMODnet to a MSDIWG meeting	Norway	MSDIWG7	Moved to 47
27	1/2016	Investigate how to participate in the INSPIRE work with relation to hydrographic data	Norway	MSDIWG7	Moved to 48
28	1/2016	To investigate the different MSP initiatives and stakeholders in the North Sea with relevant to MSDI	Denmark	MSDIWG7	Ongoing
35	1/2016	To invite HELCOM and VASAB to the next BS-NSMSDIWG and to invite other relevant organisations e.g. North See, OSPAR, EURO GOOS, INSPIRE	Chair	MSDIWG7	Ongoing
36	1/2016	Poland to investigate if they can host the next MSDIWG7 meeting,	Poland	MSDIWG6	Done
39	1/2018	To investigate the possibility to arrange a MSDI workshop for the North Sea - and Baltic Sea Council. If accepted. To arrange a MSDI workshop for the North Sea and Baltic Council.	Chair/Norway	MSDIWG7	Ongoing
40	1/2018	To establish and conduct a survey about MSDI and MSP for the NS and BS MS about implementation, status and maturity.	Denmark	MSDIWG7	Ongoing

41	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	MSDIWG7	Ongoing
42	1/2018	To investigate the work on non-vector AML and provide a paper to the next BS-NSMSDIWG	Netherlands	MSDIWG7	Ongoing
43	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	MSDIWG7	Ongoing
44	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 the IHO-EU Network working group.	Netherlands	MSDIWG7	Ongoing
45	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 the IHO-EU Network working group.	Norway	MSDIWG7	Ongoing
46	1/2018	To present relevant Business Cases with relevance to MSDI/MSP/Coastal Zone Management	Norway Denmark	MSDIWG7	Ongoing
47	1/2018	Investigate possible approaches for the BS-NSMSDIWG to interact with EMODnet in the future within relevant MSDI issues. (e.g. the possibility to invite EMODnet to a MSDIWG meeting)	Norway	MSDIWG7	Ongoing
48	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	Ongoing