20th BSHC Meeting **Agenda item C4a**
15 – 18 September 2015 **Status report**
St Petersburg, Russia **Denmark**

Report of Baltic Sea Marine Spatial Data Information Working Group (BSMSDIWG)

Submitted by:	Chair of BSMSDIWG, 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:	IHO MSDIWG

Introduction / Background

MSDI delivers the instruments for the enhanced scope of hydrographic information users. MSDI can create the framework for future provision of this information beyond the classic field of surface navigation. From an HO perspective, it is important that the IHO takes the lead in addressing MSDI matters for the maritime sphere through its MS; the BSMSDIWG is seen as an appropriate WG to deal with these opportunities from a regional approach.

BSMSDIWG meetings held during reporting period

The Baltic Sea Marine Spatial Data Infrastructure Working Group (BSMSDIWG) Workshop No 3 took place in Rostock January 20-22, 2015. MS from the North Sea Hydrographic Commission (NSHC) was invited to participate in the workshop. Members from the hydrographic offices of French, UK and Netherlands participated the workshop.

The overall aim of the workshop was to create a common MSDI framework and to evaluate the BS MSDI work plan for the Baltic Sea which focuses on how the BSHC can benefit from a regional approach to MSDI.

Day 1of the Workshop was a general presentation from IHO MSDIWG, national presentation from national HO on status about SDI, MSDI, MSP and INSPIRE.

Day 2 and 3 of the workshop focused on the established work programme, status planed actions and way ahead. At the meeting the work plan was revised in accordance with the discussions during day 2 and 3.

Next meetings planned
The next meeting of the BSMSDIWG is planned to take place in Helsinki, Finland at the Finnish Transport Agency (FTA) 16-18 November 2015 all MS from BSHC is invited to participate at the meeting.

BSMSDI Draft Work Programme
At the 3rd meeting of the Baltic Sea Marine Spatial Data Infrastructure Working Group, the work group adjusted the draft work program. The work plan is now divided in 6 work items and there are relevant milestones and coordinators for each item. The draft work program focuses on tasks that are foreseen to be important and challenging from a regional and a national perspective.

Draft work plan for BSMSDIWG 2015-2020

Theme	**Subject**	**Responsible**
Task 1. Work item: Hydrographic data and legal aspects	- Definition of HO role in MSDI - Study on status on implementation and responsibility with relevance to MSDI in the Baltic countries	Denmark
Task 2. Work item: Liaison with external projects	- Scanning of projects relevant for BSMSDI	Germany
Task 3. Work item: S 100	- Conduct S 100 pilot project - Evaluate on how to promote S 100 in the Baltic	Germany
Task 4. Work item INSPIRE	- Make a matrix of hydrographic datasets versus INSPIRE. - Give input to a survey to get overview of available webservices, including INSPIRE webservices, to facilitate a demonstrator by DEN - Present information about INSPIRE at the next wg meeting.	Netherland/ France
Task 5. Work item: Common understanding	- Establish a framework for common understanding of MSDI	Denmark/ Finland
Task 6. Work item: Pilot projects/demonstration	-Study on the possibility to establish a BSMSDI WEB page - Demonstration project S100 - WEB GIS demonstrator with BS HO datasets	Denmark Germany Denmark

IHO MSDIWG meetings held during the reporting period

The sixth meeting of IHO Marine Spatial Data Infrastructures Working Group (MSDIWG) took place in London, UK, hosted by UKHO, from 4-6 March 2015. The outcome of the meeting is available from the IRCC section of the IHO Website under the MSDIWG.

The MSDIWG meeting was preceded on 3 March by an MSDI Open Forum meeting. The overall title for the Open Forum meeting was "Building a maritime spatial data infrastructure - Are the principles at odds with strategies for delivery"

The aim of both events was to focus on MSDI and to propose ways to progress MSDI implementation within the Organization and its Member States. Furthermore the purpose of the MSDIWG6 meeting was to adjust the Terms of Reference (ToR) and to establish a new Work Programme in order to be submitted to IRCC7.

Next Planned IHO MSDIWG Meeting

The IHO MSDIWG expects to hold a MSDI Demonstration Workshop and an Open Forum meeting, in Tokyo, Japan 25-26 January 2016, in conjunction with the seventh MSDIWG meeting that will take place 27-29 January 2016. The meetings will be hosted by the Japan Hydrography and Oceanography Department (JHOD) in Tokyo, Japan.

The extension of the activities to 5 days will enable the MSDIWG to host a one-day Demonstration Workshop for expert contributing bodies adjacent to the Open Forum and MSDIWG-7. This would allow non-MSDIWG stakeholders (e.g. EAHC MS, government, academia, industry, donor agencies, NGO representatives) to come along to see what the MSDIWG commercial partners can offer. Attendees at the workshop would then be encouraged to stay on for the Open Forum. This approach is being developed in consultation with the hosts.

The Open Forum meeting will be followed by a three day-long MSDIWG7 meeting at the same venue and the meeting will include WG Work Plan task group break-out sessions.

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

IHO MSDIWG Work Programme

The group reviewed the new role of MSDIWG as part of IRCC and endorsed the change of focus resulting from the move to IRCC governance. The 2015-16 Work Programme was refined at the MSDIWG6 meeting. This was based on the HSSC6 agreed 2014-15 Work Programme for the WG and the change to IRCC.

Key to being able to deliver this Work Programme is the seven supporting tasks now in place, namely:

MSDIWG Tasks:

A. Identify and promote national and regional best practices
B. Assess the existing and new standards in the provision of marine components of spatial data infrastructures
C. MSDI training and education
D. Facilitate (external) MSDI communication
E. Maintain and extend the publication IHO MSDI C-17 (IHO Task 2.9.2 refers)
F. Conduct annual meetings of MSDIWG, arranged back to back with 1-day MSDI Open Forum (IHO Task 2.9.1 refers)

G. Ensure that MSDI is a standing agenda item for RHCs' meetings (IHO Res 2/1997, as amended, refers)

Analysis/Discussion for IHO MSDIWG

The IHO's MSDIWG has published *C-17 - Spatial Data Infrastructures: The Marine Dimension - Guidance for Hydrographic Offices*, which outlines the benefits of developing spatial data infrastructures (SDIs) to reinforce coordination among maritime authorities.

At a time when SDIs are being developed worldwide at the national, regional and local levels, this approach to coordinated access to, and management of, geographic information has become a standard on land. However, as C-17 identifies, the integration of maritime data in SDIs has been limited at best, though there can be as many benefits to be gained by coordinated access to maritime information as to terrestrial data.

Progress on HSSC and IRCC Action Items

Progress on HSSC Action Items

The MSDIWG has moved from HSSC to IRCC on 1 January 2015. Communication between MSDIWG and HSSC (with the main focus on technical issues and standardization) will in the future be through IRCC.

Action HSSC4/32 is for MSDIWG4" to consider, within its work plan, the development of content for an "introduction to MSDI" training course ". This development was requested by the IRCC Chair following the CBSC conclusion that such a course was necessary and should be developed by the MSDIWG.

This action point is included in future work of the MSDIWG as stated in Annex C.

Action HSSC5/49: MSDIWG to consider the impact of the UN-GGIM initiative on its work programme, taking into account the items identified in paragraph 11 of HSSC5-05.7B, and report to HSSC6.

The MSDIWG has contributed to IHB in its response to UN-GGIM establishing its publication "A Guide to the Role of Standards in Geospatial Information Management".

The MSDIWG suggest that IHO welcome this initiative and use this opportunity to state the important role that hydrography plays in the geospatial information sector generally and also explores ways of improving marine spatial data management.

The UN-GGIM guidelines are available from the IRCC section of the IHO Website in the MSDIWG section:

http://iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG_Misc/MSDIWG-BOK.html

Input to HSSC through IRCC

S-1XX specifications

The MSDIWG would like to promote the developing S-1XX specifications as much as possible, specifically in non-navigational use-cases. The MSDIWG seeks cross-pollination with the HSSC communications on these S-1XX specifications,

Especially the relationship between S-102 and the INSPIRE Elevation theme is an important issue as it pertains to bathymetry data. The reason for this request is to attempt to avoid a possible format conflict and to help ensure that hydrographic offices are not in a position where they need to

maintain two separate bathymetry layers. One for primary charting activities and another to serve the regional or national spatial data infrastructure initiatives for purposes that go beyond charting e.g. marine spatial planning or oil spill response. The MSDIWG understands that the S-100 work group will be undertaking a revision of S-102 in its work plan (item D.8.) this would present an opportunity for this investigation.

Progress on IRCC Action Items
Establishing a MSDI training syllabus
The syllabus is about making sure decision makers and employees have the skills, knowledge and understanding to approach the different elements of MSDI. It is not intended to set out exactly what instructors should do.
The syllabus sets out the learning outcomes that, as a minimum, must be achieved. It is important that components and elements from national and regional perspectives are also considered and added to the MSDI training course, in order to achieve the right skills, knowledge and understanding needed from a national perspective.
The syllabus is divided in four, one MSDI orientation and three detailed MSDI courses:
General introduction to MSDI.
Fundamentals of a Marine Spatial Data Infrastructure (MSDI)
Database Design, Data Management and MSDI for Practitioners (i.e. Hydrographic Surveyors, Cartographers, Oceanographers, IT specialists)

INSPIRE
Although INSPIRE is a primarily European Union activity it is perhaps the best example of a Spatial Data Infrastructure and therefore is recognized well beyond the borders of Europe.
Many European hydrographic offices have requirements under INSPIRE so it would be beneficial to adopt a policy of collect once and use many times as it relates to one of the most important data assets held by hydrographic offices i.e. bathymetry.
Under INSPIRE there are maintenance groups that drive the direction and scope of the various themes including Elevation. The MSDIWG suggests that it may be worthwhile for the IHO group responsible for data standards such as S-102 also to attend the maintenance group responsible for this related theme. This way hydrography has a louder voice within INSPIRE and the work done under INSPIRE can be consider in the development of S-100 which should allow these two bathymetry related standards to be developed more harmoniously.

The EU directive on MSP
The European Parliament and the Council have released a new directive about establishing a framework for maritime spatial planning. The directive is expected to have influence on MSDI for the European MS and MS outside Europe. In the directive there is a particular focus on data and the exchange of data:

Article 6 - Minimum requirements for maritime spatial planning. Member States shall establish procedural steps to contribute to the objectives listed in Article 5, taking into account relevant activities and uses in marine waters:
(e) Organise the use of the best available data in accordance with Article 10.
(f) Ensure trans-boundary cooperation between Member States in accordance with Article 12.
(g) Promote cooperation with third countries in accordance with Article 13.

Article 8 - Set-up of maritime spatial plans
1. When establishing and implementing maritime spatial planning, Member States shall set up maritime spatial plans which identify the spatial and temporal distribution of relevant existing and future activities, uses in the marine waters in order to contribute to the objectives set out in Article 5.
2. In doing so and in accordance with Article 2(3), Member States shall take into consideration relevant interactions of activities and uses. Without prejudice to Member States' competences, possible activities and uses and interests may include:
• aquaculture areas;
• fishing areas;
• installations and infrastructures for the exploration, exploitation and extraction of oil, gas, mineral and aggregates, and other energy resources and the production of renewable energy;
• maritime transport routes and traffic flows;
• military training areas;
• nature and species conservation sites and protected areas;
• raw material extraction areas;
• scientific research;
• submarine cable and pipeline routes;
• tourism;
• underwater cultural heritage.

As a consequence the countries around the Baltic Sea are expected to establish a Baltic Sea Region MSP Data Expert Group as a sub-group of the HELCOM/VASAB MSP Working Group. The main task of this group will be to identify data needs and products, and to develop Terms of Reference for a Regional Spatial Data Infrastructure in order to support the process of MSP. The BSMSDI WG intends to participate in the work of the MSP Data Expert Group.

Conclusions
The work in the BSMSDIWG is well underway and a new draft Work 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 introduction of the EU initiative about MSP emphasizes the need for better coordination of individual authorities' management of maritime information. While a national single window can aid in the reporting process among maritime stakeholders, information flow among the authorities is also a critical factor for ensuring the effective and efficient coordination of their work.

An 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 more practical approach there is a need to focus on and strengthen the maritime approach to MSDI and to insure that maritime information is included. Some of the challengers for BSHC MS in relation to MSDI are seen as:

- Ensure that BSHC MS participate in the BSMSDIWG
- Ensure that Baltic HO have the possibility to contribute to the development of the Baltic MSDI
- Ensure the use of data/information provided by Baltic Sea HO
- Ensure that the Baltic Sea HO have the possibility to contribute in creation of an Baltic MSDI reference model - A reference model that represents the component parts of any consistent idea, from business functions to system components:
    - Rules and rights in relation to the use of vector data between countries
    - How do we establish a structure to support the Baltic SDI
    - The continues update of relevant data
    - The financial aspect.

As seen from a HO perspective, the MS now have a 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 Baltic MSDI matters for the Baltic countries.

Action Required of the BSHC 20 Conference

The BSHC is invited to:

a) Discuss the implication of MSDI from a HO perspective and how MS can benefit from a regional approach.

b) Consider this report and to take appropriate actions.

c) Approve the Draft BSMSDIWG work program