

Report of the Marine Spatial Data Infrastructures Working Group (MSDIWG)

Submitted by:	Chair of IHO MSDIWG, 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 MSDI, Baltic Sea and North Sea Marine Spatial Data Working Group, (BS-NSMSDIWG), Maritime Economical Information Programme (MEIP), OGC Marine Domain Working Group

Introduction / Background

The 18th International Hydrographic Conference confirmed the importance of marine spatial data infrastructure (MSDI) activities for the IHO and its Member States. With IHO's definition of hydrography in place, MSDI delivers the instruments for the enhanced scope of hydrographic information users. MSDI delivers the instruments for the enhanced scope and re-use of hydrographic information. MSDI can create the framework for future provision of this information beyond the classic field of surface navigation. 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 to support asset management and decision support by users such as scientists, engineers, environmental consultants, ports operators, marine planners, energy companies and fisheries. 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 IHO MSDIWG is seen as an appropriate WG to deal with these opportunities from an international approach.

Next Planned Meeting

The IHO MSDIWG expect to hold a MSDI Open Forum meeting, in Brazil , in January or February 2018, in conjunction with the ninth MSDIWG meeting and the OGC Marine Domain WG meeting that will take place in 2018. The meetings are expected to be hosted by the Brazilian Hydrographic Offices.

Last Meeting

The IHO MSDIWG arranged a 3 days MSDIWG meeting in Canada, Vancouver in the end of January and beginning of February 2017, in conjunction with the OGC Marine Domain WG meeting. The meetings was hosted by the Canadian Hydrographic Offices. The idea was to have the MSDIWG meting together with the OGC Marine Domain WG meeting in order to allow non-MSDIWG stakeholders (e.g. government, academia, industry, donor agencies, NGO representatives) to come along to see what the MSDIWG could offer and to give the MSDIWG members the possibility to participate the OGC Marine Domain WG. This approach was developed in consultation with OGC.

The MSDIWG8 meeting included the establishment of a new revised draft WG Work Plan, reflecting the transfer of the MSDIWG to IRCC and the establishment of the technical OGC Marine Domain Working Group.



Figure 1. The MSDIWG members attending the meeting.

Work Programme

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

The MSDIWG has reviewed its new role as part of IRCC and endorsed the change of focus resulting from the move to IRCC governance. The draft Work Programme was refined at the MSDIWG8 meeting.

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

New draft MSDIWG Tasks:

- A. Communication and dissemination
- B. Operational - Data sharing and management
- C. Policies and governances – RHC. (Ensure that MSDI is a standing agenda item for RHCs' meetings (IHO Res 2/1997, as amended, refers))
- D. Standards (OGC and HSSC)
- E. Innovation – Future perspectives (2021 - 2023)
- F. Training and education
- G. Maintain and extend the publication IHO MSDI C-17 (IHO Task 3.9.2.1 refers)
- H. Conduct annual meetings of MSDIWG, arranged back to back with 1-day MSDI Open Forum (IHO Task 3.9.1 refers)

See https://www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG_Misc/MSDIWG-WorkPlan.pdf for full details of the work programme.

Progress on IRCC Action Items

Establishing a MSDI training syllabus

The IHO is committed, through its Capacity Building Programme for 2013-2017, to support MS improve their corporate governance in respect of data management, database design and MSDI through a variety of training courses and briefing sessions, ranging from half-day workshops and briefings to more comprehensive 5-day residential courses aimed at all levels of staff including practitioners, managers and directors.

Training and Education has never been more important and timely as pressures grow on HO to engage in initiatives aimed at greater sharing and exchange of data, information and ideas in order to meet governmental as well as market requirements. This may well require a MS to fundamentally change the way it operates both as an organisation and how its people adapt to new ways of working. There is no doubt that the biggest obstacle in successfully adapting to change rests in the mindset of its individual people and the organisation as a whole and their willingness to do so. 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:

1. General introduction to MSDI.
2. Fundamentals of a Marine Spatial Data Infrastructure (MSDI)

3. Database Design, Data Management and MSDI for Practitioners (i.e. Hydrographic Surveyors, Cartographers, Oceanographers, IT specialists)
4. Marine Spatial Data Infrastructure (MSDI) for Senior Managers (i.e. Directors, Hydrographers, HR Managers)

Revised version of IHO Special Publication C-17:

A small drafting group was convened in Copenhagen for 3 days in late February 2016 to identify the changes necessary to this important publication. In view of its limited impact upon the IHO community since 2009, the decision was taken to retain the elements of the content that are still valid but to supplement and update some of the background and policy information elements to better reflect the current level of MSDI knowledge and understanding. It will also provide a forward view of the changes that will likely impact on the role of the HO in the knowledge economy. C-17 includes a new section on "Making the Business Case for SDI". Whilst a business case template is worthwhile, work still needs to be done to enable the HO community to develop its governance models to enable it to meet the requirements of data and information providers. A draft version of the document has been provided to IRCC8 for consideration and comment. The publication of the final document is now planned for summer 2017 when approved by IRCC9. Active steps are being taken at this time to consider providing this document also as a web version.

Creation of an OGC Ad-hoc Maritime Group

MSDIWG has been cooperating with the OGC, the world-wide body responsible for developing de-facto standards for the geospatial industry and has contributed to the development of an OGC compliant Conceptual Model for Oil Spill Response. OGC has recently facilitated a Maritime Ad-Hoc meeting in Washington on 10 March 2016 at which the MSDIWG was represented. As a result a Marine Domain WG was created within OGC with an aim of developing an OGC compliant MSDI Conceptual Model. Its first meeting took place in November 2016.

Preparation of a new MSDI White Paper

The existing "promotional" MSDI White Paper "The Hydrographic and Oceanographic Dimension to Marine Spatial Data Infrastructure Development: 'Developing the capability'" was authored and published by Caris and OceanWise in May 2010 and later adopted by the MSDIWG. As knowledge and understanding of SDI and MSDI has developed in the past 5 years, the MSDIWG worked on a revised document named "Realizing the benefits of Spatial Data Infrastructures in the Hydrographic Community.

The white paper is available from the IHO website at:

www.iho.int => Committees & WG => MSDIWG => Body of Knowledge

Regional approach to MSDI

The BSHC at its 20th Conference approved a request from NSHC to expand the BSMSDIWG also to include the NSHC in a dual MSDI WG. Therefore the BSHC 20th Conference approved to expand the BSMSDIWG to the BS-NSMSDIWG with the task to study MSDI in the Baltic Sea and the North Sea.

The Working Group should:

- Identify and analyse the current status of individual MS MSDI implementation.
- Consider MSDI policies within the related international project e.g. e-navigation, ICZM, INSPIRE, MSP, EU Integrated Maritime Strategy, the Marine Strategy Framework and EU Strategy for the Baltic Sea Region.
- Analyse how maritime authorities can contribute their spatial information and the necessary updates, so information can easily be collated with other information to a current overall picture for the region.
- Focus on how BSHC in the future can benefit from a regional approach.
- Monitor the development of SDI that could be relevant for the Baltic Sea.
- To present a yearly report to the BSHC and a report to NSHC every second year at their meeting. This report should include a description on the current status, recommendations on how to proceed with the MSDI implementation and if deemed necessary an action plan with specified time schedule for future BSHC and-NSHCMSDI actions.

BS-NSMSDIWG meetings held during reporting period

The Baltic Sea Marine Spatial Data Infrastructure Working Group (BSMSDIWG) Workshop No 5 took place in Rostock December 6-8, 2016. MS from the North Sea Hydrographic Commission and the Baltic Sea Hydrographic Commission was invited to participate in the workshop. Members from the HELCOM and the VASAB secretariat participated in the workshop on the second day.

The overall aim of the workshop was to create a common MSDI framework and to evaluate the BSMSDIWG work plan which focuses on how the BSHC and NSHC MS can benefit from a regional approach to MSDI the workshop also focused on how to cooperate and coordinate with HELCOM and VASAB in a forward looking perspective especially with a focus on the implementation of MSP.

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



Figure 2. The BS-NSMSDIWG members attending the workshop.

Next meetings planned

The next meeting no 6 of the BS-NSMSDIWG is planned to take place in Poland at the Polish Hydrographic Offices in 2017. All MS from BSHC and NSHC will be invited to participate in the meeting.

BS-NSMSDI Draft Work Programme

At the 5th meeting of the Baltic Sea North 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. At the BSHC20 meeting the work programme was approved.

Marine Spatial Planning

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.

Core members of the Baltic MSP Data Expert Group are MSP experts / planners representatives from all the Baltic countries and Data / GIS / SDI (Spatial Data Infrastructure) experts from relevant authorities/agencies in the Baltic countries. Additional members/experts may participate in meetings by invitation by the chair of the group depending on issues to be dealt with such as representatives of other organizations, technical experts, etc.

Deliverables of the group shall be (among others)

- List of National MSP Data Contact Points and contact persons
- List of additional relevant institutions, contact persons / data experts
- List of main / most relevant MSP issues in a cross-border / trans-boundary context in relation to data and information
- Compilation of minimum requirements for Maritime Spatial Plan Data: “Output Data” and sharing of this data
- Compilation of minimum requirements for “Input Data” and sharing of this data which has relevance for trans-boundary / cross-border planning issues
- Overview on (national / regional) situation of MSP Data which has been identified as being relevant with regard to cross-border/trans-boundary (planning) issues in BSR
- Terms of Reference for a Baltic Sea Region Spatial Data Infrastructure for MSP
- Regular reports to HELCOM-VASAB MSP WG

Conclusions

The IHO is seeking to develop its Vision of being the authoritative worldwide hydrographic body which actively engages all coastal and interested States to advance maritime safety and efficiency and which supports the protection and sustainable use of the marine environment. To support the role of the IHO in ensuring that the Hydrographic community is fit and able to meet the global remit of extracting greater wealth and knowledge from the world’s oceans, the MSDIWG is supporting the IHO to adopt a more proactive stance in the way data is collected, managed, and disseminated by HO/HS thereby providing a leading role in developing the “blue economy”.

The work in the 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.

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 challenges from a regional approach for IHO 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
- Ensuring the use of data/information provided by regional HO is fit for purpose for wider dissemination

The creation of a 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.

The Commission is invited to

- take note of the report
- discuss the implication of MSDI from a HO perspective and how MS can benefit from a Nordic approach to MSDI