

**Minutes of the 4th meeting of the IHO MSDI Working Group
Held at the offices of the Danish Geodata Agency (GST), Copenhagen
31st January and 1st February 2013**

Note: A list of acronyms used in these minutes is provided in Annex 1.

1. Welcome, introductions and practical information

The WG Chair, Mr Jens Peter Hartmann, welcomed everyone to the 4th meeting of the MSDIWG and provided the logistical information for the two days of discussion. He stated he was pleased to see such a good representation of MS at the meeting and welcomed those not able to travel to the meeting via the webcast. See list of attendees in Annex 2.

The Chair suggested that the revised Terms of Reference for the working group should be defined on Day 2 after the majority of the agenda had been discussed and a draft work programme agreed in order to give greater clarity and purpose to the revised ToR. This was accepted by attendees.

2. Approval of Agenda and objectives

2.1. The agenda and objectives for the working group meeting were agreed unanimously. See agenda in Annex 3.

3. Setting the work programme and activities to date

3.1. The meeting reviewed the existing work plan, set at HSSC1 in November 2009 and agreed that changes were necessary to reflect the phase of development MS approach to MSDI had reached: that of engagement and implementation.

3.2. The new work programme, to be developed at the meeting, will be submitted to IHO in August, as part of the MSDIWG report to HSSC, for approval at HSSC5 in Shanghai in November 2013.

3.3. The four initiatives in the draft work programme (as circulated) were agreed in principle whilst identifying the need to ensure that the work items reflected what is possible given the MS resources available to the WG.

4. Open Forum

4.1. There followed a discussion on how MSDI had progressed in MS. Key points raised from MSDIWG members in this session included:

4.1.1. The focus on navigational outputs is constraining the potential role of HOs. There needs to be a multi-use approach by MS.

4.1.2. MSDI is not different from but merely an extension of SDI.

- 4.1.3. Some MS are constrained in their approach to the provision of data for wider use because of their strictly imposed governance models.
- 4.1.4. HO's in the EU are working towards meeting basic requirements for compliance with INSPIRE. However, some concerns were raised at the rate of progress being made.
- 4.1.5. The "Blue Economy" requires greater engagement and action from stakeholders to deliver social and economic value from the management of the seas.
- 4.1.6. Hydrography needs a clearer and louder voice to ensure wider understanding and appreciation of its role. The MSDIWG has the opportunity and platform to do this.
- 4.1.7. Product- or process oriented organisations are outmoded. A data centric approach is needed by HO's, because data is what is required in the modern GI world.
- 4.1.8. Hydrographic data required by most users are XYZ bathymetry data (with 3D/4D representation in future) and the Coast Line.
- 4.1.9. Storage, quality and harmonisation of bathymetry data across international and inter-departmental boundaries are critical to wider use.
- 4.1.10. MSDI is a key driver in the success of future e-navigation initiatives.
- 4.1.11. The need to develop "use cases" stating the value and benefit around the wider application of hydrographic data is urgently required.
- 4.1.12. Cooperation with industry is essential. MSDI exceeds the limits of the public and commercial domains.

5. MSDIWG Member presentations

A series of short updates were given by MS in respect of national MSDI and SDI initiatives.

- 5.1. UKHO: In the UK, a small team within the Dept for Environment Food and Rural Affairs has responsibility for the implementation of INSPIRE. Data being made available by the UKHO comprises offshore limits, ships' routing, and bathymetric surveys (which are also discoverable via the MEDIN portal (www.oceannet.org)). Wrecks data is also being considered for inclusion. Disparate government and private sector responsibility for marine data makes collaboration and cooperation difficult, with no overall "ownership" of the process.
- 5.2. Latvia: Ministry of Environment is responsible for Marine Spatial Planning (MSP) and the NSDI. Only environmental data is included in the marine portal. The national Geo-portal is for land mapping.
- 5.3. France: SHOM metadata is available through the NSDI which is managed by BRGM and IGN. SHOM new portal opened on January 28th (www.data.shom.fr) and offers, among others, INSPIRE view services for bathymetry, coastline, maritime limits and boundaries, seabed natures and submarine cables. Each producer is responsible for identifying which datasets should be included in INSPIRE or not. Therefore cohesion of activities is difficult.
- 5.4. Argentina_(Naval Hydro Service): No SDI has been developed. Data is not standardised. IDERA has no legal framework to support it. The geoportal has restricted access with password protection www.idera.gov.ar/web/ . MSDI, and HO involvement is an aspiration at this time.
- 5.5. Estonia: See www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG4/MSDIWG4_National_Report_Estonia.pdf. INSPIRE programme led by ELB (land mapping agency) which hosts two portals: land mapping and the national geo-portal (INSPIRE) which holds ELB and EMA metadata. EMA has a hydrographic data portal (e.g. surveys) which it aims to incorporate with ELB data.

- 5.6. USA (NOAA): See www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG4/MSDIWG4_National_Report_USA.pdf. V-Datum programme is now complete which allows land-sea data interoperability. ENC data is now “seamless” and available via CMSP data registry which is linked to other themes (e.g. benthic, habitats, ecosystems). DEMs now easier to build using merged land-sea data. www.geoplatform.gov. FGDC metadata standard is ISO compliant.
- 5.7. Japan: See www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG4/MSDIWG4_National_Report_Japan.pdf. SDI initiative started in May 2012. A website view service is now operational (<http://www5.kaiho.mlit.go.jp/kaiyo/>).
- 5.8. Norway: Norway Digital (ND) SDI has been in place since 2005. All Govt departments with GI are engaged in the programme. NHS has a bathymetry data portal (but not for commercial access) with 50m grid resolution. Seamless raster chart data available via WMS service for non-navigational use to ND users. Geology and biology data is available via MAREANO. Norway Geo-data Act ensures compliance with INSPIRE.
- 5.9. Finland: See www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG4/MSDIWG4_National_Report_Finland.pdf. FTA actively supports the National Geoportal. Considerations taking place for open data via PSI review with 5-year timetable for raster and S-57 data. Bathymetry data is not published for re-use.
- 5.10. Netherlands: See www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG4/MSDIWG4_National_Report_Netherlands.pdf. The NSDI “push” has now happened without HO RNLN inputs. The “window has closed” according to the WG representative. RNLN is however working toward INSPIRE compliance with Metadata, Download and View Services now in place. Multiple sources of the same marine data are held with different update cycles. IHO needs to develop its relationship with EC-JRC, the body responsible for delivering INSPIRE in the EU. MSDIWG should offer technical and marketing assistance to EC-JRC in order to increase awareness and validity of marine data requirements.
- 5.11. Denmark: See www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG4/MSDIWG4_National_Report_Denmark.pdf. A business case presented by GST for MSDI has been submitted and accepted in principle. MSDI is being developed via a multi-agency approach. Directors “yes” vote is awaited. A steering group is in place to drive MSDI forward.
- 5.12. Germany: BSH has been a geo-data collaborator since 2001. The IMAGI website (http://www.bmi.bund.de/EN/Themen/OeffentlDienstVerwaltung/Geoinformationen/Imagi/imagi_node.html) provides the access to INSPIRE data services. The geo-portal uses open source technology (open layers) via www.geoportal.de.
- 5.13. Spain: See www.iho.int/mtg_docs/com_wg/MSDIWG/MSDIWG4/MSDIWG4_National_Report_Spain.pdf. MDE published a Catalogue Service for the Web (CSW) using Geo-network with information about Nautical Charts, Bathymetric Charts, photographs and ENCs; and a viewer (using Intergraph Geomedia Web Map) with some layers and raster drawing tools for planning. Plans to create a web portal for SDI in the Ministry of Defence (IDEDF) hampered by technological limitations in the Ministry of Defence in understanding of concepts on SDI: Metadata, OGC standards and Web Services and also ensuring data security is not compromised by making it available in SDI.

6. Presentation of Questionnaire results

Denmark presented the responses to the questionnaire circulated in late 2012. The full document was made available to all attendees. The three main areas of action for the MSDIWG forward were:

- 6.1. Building out the MSDIWG with sub-groups to address key areas of further development with clear goals and milestones.
- 6.2. Establish communication channels with relevant organisations (such as EC-JRC; GSDI) to further the knowledge and understanding of both parties in developing MSDI.
- 6.3. Create an infrastructure resource base at the IHO using the IHO website as the primary route to stakeholders.

7. Challenges for IHO

The following challenges IHO MS face were identified from the questionnaire results and from the collective input of MSDIWG4 attendees and the Open Forum.

- 7.1. Supporting IHO MS to adapt to new ways of thinking and working through skills development and knowledge transfer, education, training and capacity building, maximising the use of source data and developing best practise in managing and publishing data.
- 7.2. Sharing knowledge and experience across the HO community of practitioners; outreach to other marine data providers in data management and publishing best practise; improving working practises to gain operational efficiencies and cost savings; data sharing and exchange; reducing the reliance on assessing data just for navigational safety through the wider use of hydrographic data in non-navigational applications; putting case studies together; and developing governance models for MSDI.
- 7.3. Putting technology at the heart of operations by adopting data centric operations, use of open standards and software, data harmonisation and integration across HO borders and the land-sea interface.
- 7.4. Intellectual Property, releasability, copyright and rights management initiatives making access to all data easier; the role of free and open data e-navigation and MSDI.
- 7.5. Business case development including cost benefit analysis, developing the road map to successful engagement, participation and implementation of MSDI. Focus will not only be on distribution of data, but on the whole value chain.

8. Education and Training

The round-table discussion session was devoted to the key elements of training and education (Ref 7.1-7.3). The responses to 4 questions asked of attendees were as follows:

1. What are the needs for education in MSDI across MS?
 - a) A differential approach is required (e.g. for different levels of involvement in MSDI)
 - b) Education targeted at decision makers
 - c) Good GIS skills are an important element
 - d) Target education at the correct level
 - e) There is a published curriculum for MSDI available
 - f) Educational resources exist in Esri Inc
 - g) SDI training modules exist in IOC
 - h) Need to distinguish between content and level of learning

- i) C-17 should be revised to reflect the current practise of MSDI. It should contain an annex on training material
- 2. Who has the responsibility for education and training?
 - a) IHO and MSDIWG should be responsible for specifying and recommending
- 3. When should this be ready?
 - a) For November 2013 HSSC5 meeting
- 4. How might this be achieved?
 - a) By setting up a Drafting Group for future training framework
 - b) By running training courses back-to-back with HSSC and IRCC meetings
 - c) By making a list of all training courses available
 - d) By adopting a joint commercial-IHO approach to training
 - e) By including e-learning as a key component of the curriculum
 - f) By providing IHO accreditation for successful training
 - g) By making MSDI training courses an inclusive element of IHO Cat A/B courses?

9. Revised Terms of Reference for the MSDIWG

The terms of reference were revised and a draft version circulated after the meeting to the Chair, Vice-Chair and IHO representative by the Secretary for comment. The resulting new draft is provided in Annex 4.

10. The 2013-2017 Work Programme

The meeting reviewed a draft Work Programme authored by the Interim Chair prior to the meeting and circulated to WG members. This draft was based on the responses received to the questionnaire circulated to all WG members and expert contributors in autumn 2012. Four work Initiatives were defined with work items, priorities, milestones and ownership. Key Actions identified are as follows:

10.1 Prepare a paper to be submitted to HSSC5 to reinforce the need for a more proactive approach to MSDI and to ensure it is included on the agenda of IRCC and RHC. **ACTION: Chair**

10.2 Liaise with other IHO bodies (like TSMAD, SNPWG, RHCs, IRCC) and agree/coordinate a common approach to further the ambitions of IHO MS in the role MSDI will play in the future. **ACTION: Vice-Chair**

10.3 Set up an INSPIRE Task Group working with IHO and EC-JRC (under existing MoU) to resolve technical problems impacting on implementation of MSDI and INSPIRE. **ACTION: Chair, UKHO, Caris, SHOM, RNLN**

10.4 Set up a Task Group to explore the ways in which e-Navigation would benefit from MSDI. **ACTION: Mike Osborne to lead, firstly in recruiting WG Members to the Task Group and for that Task Force to provide a paper to HSSC5 outlining the products and services that MSDI would enable to support e-navigation**

10.5 Set up a Task Group to further develop syllabi for MSDI and associated learning subjects. **ACTION: Chair, Vice Chair, Caris, OceanWise**

10.6 IHO MSDIWG to organise a marine pre-INSPIRE Conference workshop in Florence, Italy on Monday June 24th and invite all EU HOs to participate. This action requires urgent attention as the deadline for conference

abstracts is 15th March and for notification of successful nominations is 28th March. **ACTION: MSDIWG Chair, MSDIWG Secretary, IHB Representative**

http://inspire.jrc.ec.europa.eu/events/conferences/inspire_2013/

Afternote: A provisional request has been made by MSDIWG Secretary to EC-JRC to run a Marine SDI workshop at the INSPIRE 2013 Conference to be held in Florence from 23-27th June.

10.7 2013-17 draft MSDIWG Work Programme to be circulated to WG members for comment by early March 2013. All responses from WG Members are required by 25th March 2013.

ACTION: MSDIWG Chair, All WG Members

10.8 MSDIWG to investigate security concerns across some MS in order to make release of bathymetry and infrastructure data easier. **Action: ALL**

11. Election of Officers

There being no other representatives put forward for the post; Mr Jens Peter Hartmann (GST) was duly elected unopposed as Chairman of the MSDIWG for the period 2013-2017. He thanked Maureen Kenny (NOAA) for her efforts as Chair over the past three years.

Ms Ellen Vos (RNLN) was elected unopposed as Vice Chairman.

Mr John Pepper (JPC Ltd) was appointed unopposed as Secretary.

12. Date of Next Meeting

Invitations to WG members to volunteer to host MSDIWG5 in early 2014 outside of the EC was made by the Chairman. Offers were received from NOAA (Washington), Esri Inc (California) and Caris (New Brunswick). It was therefore decided that the event should be staged in North America in February 2014. The venue is to be confirmed.

The format will be largely unchanged from MSDIWG4 with a one-day Open Forum preceding the WG meeting. It was suggested that the WG should meet for three days as opposed to two to allow more formal discussions around the work programme and MS inputs.

LIST OF ACRONYMS

BRGM	Bureau de Recherches Géologiques et Minières, France
BSH	Maritime and Hydrography Agency, Germany
CMSP	Coastal and Marine Spatial Planning
CSW	Catalogue Services for the Web
DEM	Digital Elevation Model
EC -JRC	Joint Research Centre for the European Commission
ELB	Estonian Land Bureau
EMA	Estonian Maritime Administration
EU	European Union
FGDC	Federal Geographic Data Committee, USA
FTA	Finnish Transport Authority
GI	Geographic Information
GSDI	Global Spatial Data Infrastructure
GST	Danish Geo-data Agency
HSSC	Hydrographic Services and Standards Committee
IDEDEF	Defence Spatial Data Infrastructure, Spain
IDERA	Infraestructura de Datos Espaciales de la República, Argentina
IGN	French National Institute of Geographic and Forest Information
IMAGI	Inter-ministerial Committee for Geographic Information, Germany
IOC	Intergovernmental Oceanographic Commission, UNESCO
INSPIRE	Infrastructure for Spatial Information in Europe
IRCC	Inter-Regional Co-ordinating Committee
ISO	International Standards Organisation
JPC	John Pepper Consultancy Ltd
LTA	Latvian Transport Authority
MAREANO	Mapping depth and topography, sediment composition, contaminants, biotopes and habitats in Norwegian waters
MEDIN	Marine Environmental Data Information Network, UK
MDE	Ministerio de Defensa Espanola; Hidrográfico de la Marina, Spain
MS	Member State(s)
MSDI	Marine Spatial Data Infrastructure
ND	Norway Digital (NSDI)
NOAA	National Oceanographic and Atmospheric Administration, USA
NSDI	National Spatial Data Infrastructure
OGC	Open Geospatial Consortia
RNLN	Koninklijke Marine Royal Netherlands Navy
SDI	Spatial Data Infrastructure
SHOM	Service hydrographique et océanographique de la Marine, France
SNPWG	Standardisation of Nautical Publications Working Group
TSMAD	Transfer Standard Maintenance and Application Development
WMS	Web Mapping Service

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AGENDA

Agenda for the MSDIWG 4 meeting - January 31, 2013

Theme	Time	Subject	Responsible
Welcome	0900 - 0920	Welcome, introductions and practical information	Host/chair
Status		Terms of reference for the MSDIWG (see attached)	Chair
		Approval of Agenda and objectives Election of Chair, Vice chair and Secretariat of the MSDIWG Review of work programme and activities to date Setting goals for this meeting's results	All
Break	1020 - 1035		
Presentations	1035 - 1230	National presentation from members on status on MSDI	All
Lunch	1230 - 1315		
Presentations and preparation for group work	1315 - 1500	National presentation from members on status on MSDI	All
		Summing up and discussion (We have a national cookbook, What can be done regional by RHC and internationally by IHO?)	All
		Presentation of Questionnaire and preparation for group work	
Break	1500 - 1515		
Group work and presentations	1515 - 1655	Group work	All
			All
		Presentations	All
Closing	1700	Closing of day one of the workshop	Chair

Agenda for the MSDIWG 4 meeting: February 1, 2013

Theme	Time	Subject	Responsible
Welcome	0900 - 0920	Welcome, and summing up from the two last days	Chair
Status	0920 - 1020	Presentation of the draft work program and work plan and Inputs from HSSC4	Chair
		Terms of reference for the MSDI WG and MSDI work plan (Appendix D)	All
Break	1020 - 1035		
Discussion	1035 - 1230	Identifying the key challenges for the future related to national and IHO MSDI	All
		How to proceed	
Lunch	1230 - 1315		
Status and how to proceed	1315 - 1500	Creating a new MSDI work program and work plan	All
		Action list, Terms of Reference	All
		Any other business	All
Break	1500 - 1515		
Next meeting	1515 - 1555	Content of next MSDI conference and MSDIWG 5 meeting, in addition to regular teleconferences	All
		Place and time for the next MSDI conference and MSDIWG 5 meeting?	All
		Evaluation of the 3 last days	All
Closing	1600	Closing of the meeting	Chair

PROPOSED REVISED TERMS OF REFERENCE FOR MSDIWG

February 2013

1. Vision

“To place hydrography, and its value to social and economic development, at the heart of Spatial Data Infrastructures (SDIs) around the world”

2. Objective

To enable IHO Member States (MS) to develop their capabilities to engage and participate in regional and national MSDIs, and to implement SDI principles and the benefits they bring.

3. Procedures

- a) Work with relevant IHO Working Groups (e.g. TSMAD, SNPWG) to address technical and organisational issues that impact the ability of MS to develop a role in MSDI.
- b) Communicate with relevant external bodies (such as IOC, GSDI, EC-JRC and ICA) to increase the use of marine data.
- c) Encourage the sharing of knowledge and experience of MSDI across the HO community through an effective communications programme.
- d) Create an on-line MSDI knowledge base on the IHO website (to include case studies, up-dated C-17, FAQ's and industry developments).
- e) Identify and develop MSDI training programmes in support of MS. In particular:
 - 1. Fundamentals of MSDI (i.e. content, governance, ICT and standards)
 - 2. Making the case for MSDI including business case development
 - 3. Data sharing and publishing
 - 4. Change management¹
 - 5. Intellectual property, copyright and licensing
 - 6. User requirements
- f) Identify actions and share solutions to allow MS to address SDI-related data management and governance issues, and in particular:
 - 1. Domain data harmonisation and interoperability (e.g. land-sea)
 - 2. Wider use of data in emergent applications (e.g. Marine Spatial Planning; e-navigation)
 - 3. Liability for and security of data
- g) Identify actions and procedures that the IHO might take to contribute to the greater

¹ Change Management is an approach to transitioning individuals, teams, and organisations from a current state to a desired future state. It is an organisational process that aims at helping relevant stakeholders to accept and embrace changes in their business environment.

understanding of SDI and more particularly MSDI.

- h) Identify any IHO capacity building requirements related to SDI and MSDI.
- i) Submit a report annually to HSSC.

The WG should work by correspondence and use group meetings, workshops and symposia as required. Formal meetings should not normally be scheduled less than 9 weeks prior to the next meeting of HSSC to allow timely submission of the WG annual report to HSSC.

4. Composition and Chairmanship

- a) The WG shall comprise representatives of Member States, Expert Contributors and Accredited NGO Observers, all of whom have expressed their willingness to participate.
- b) Member States, Expert Contributors and Accredited NGO Observers may indicate their willingness to participate at any time. A membership list shall be maintained by the chairman and confirmed by the members annually.
- c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.
- d) The Chair and Vice-Chair shall be representatives of Member States. The election of the Chair and Vice-Chair should normally be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and, in such case, shall be determined by vote of the Member States present and voting.
- e) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only MS may cast a vote. Votes shall be on the basis of one vote per MS represented. In the event that votes are required between meetings or in the absence of meetings, including for elections of the Chair and Vice Chair, this shall be achieved through a postal ballot of those MS on the current membership list.
- f) A secretary should normally be drawn from the membership of the WG.
- g) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- h) Expert Contributors shall seek approval of membership from the Chairman.
- i) Expert Contributor membership may be withdrawn in the event that a majority of the MS represented in the WG agrees that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- j) All members shall inform the Chairman in advance of their intention to attend any meetings of the WG.
- k) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

ACTIONS ARISING FROM MSDIWG4

No.	Para.	Action	Responsible	Deadline
MSDIWG4/1	10.1	Prepare a paper to be submitted to HSSC5 to reinforce the need for a more proactive approach to MSDI and to ensure it is included on the agenda of IRCC and RHC.	Chair	16 Sept. 2013
MSDIWG4/2	10.2	Liaise with other IHO bodies (like TSMAD, SNPWG, RHCs, IRCC) and agree/coordinate a common approach to further the ambitions of IHO MS in the role MSDI will play in the future.	Vice-Chair	
MSDIWG4/3	10.3	Set up an INSPIRE Task Group working with IHO and EC-JRC (under existing MoU) to resolve technical problems impacting on implementation of MSDI and INSPIRE.	Chair, UKHO, Caris, SHOM, RNLN	
MSDIWG4/4	10.4	Set up a Task Group to explore the ways in which e-Navigation would benefit from MSDI. Mike Osborne to lead, firstly in recruiting WG Members to the Task Group and for that Task Force to provide a paper to HSSC5 outlining the products and services that MSDI would enable to support e-navigation	Mike Osborne	16 Sept. 2013
MSDIWG4/5	10.5	Set up a Task Group to further develop syllabi for MSDI and associated learning subjects.	Chair, Vice-Chair, Caris, OceanWise	
MSDIWG4/6	10.6	Organise a marine pre-INSPIRE Conference workshop in Florence, Italy on Monday June 24 th and invite all EU HOs to participate.	Chair, Secretary, IHB Representative	24 June 2013
MSDIWG4/7	10.7	Circulate a 2013-17 draft MSDIWG Work Programme to WG members for comment by 25 th March 2013.	Chair, WG Members	25 March 2013
MSDIWG4/8	10.8	Investigate security concerns across some MS in order to make release of bathymetry and infrastructure data easier.	WG Members	