

**5th HSSC MEETING**  
Shanghai 5-8 November 2013

**Report of the Marine Spatial Data Infrastructure Working Group (MSDIWG)**

<b>Submitted by:</b>	Chairman, MSDIWG
<b>Related Documents:</b>	None
<b>Related Projects:</b>	None

<b>Chair:</b>	Jens Peter Hartmann, Denmark
<b>Vice-Chair:</b>	Ellen Vos, Netherlands
<b>Secretary:</b>	John Pepper, Expert Contributor (UK)
<b>Member States:</b>	Argentina, Australia, Brazil, Canada, Cuba, Denmark, Estonia, Finland, France, Germany, Italy, Japan, Korea (Rep of), Latvia, Nigeria, Netherlands, Norway, Portugal, Romania, Slovenia, Spain, Singapore, Ukraine, UK, USA
<b>Expert Contributor:</b>	Caris; Esri; EUCC; John Pepper Consultancy Ltd; Kesti; Ocean Wise Ltd
See Annex A for full details of membership	

#### Meetings Held During Reporting Period

The 4th meeting of the IHO Marine Spatial Data Infrastructure Working Group (MSDIWG) took place on 31 January and 1 February 2013 in Copenhagen, Denmark. It was preceded on 30 January by an MSDI Open Forum. Both events were held at the Danish Geodata Agency (GST). The aim of both events was to reactivate IHO consideration of MSDI and to propose ways to progress MSDI implementation within the Organization and its Member States. MSDI addresses, for the maritime domain, "the technology, policies, standards, and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data".

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.

#### Next Planned Meeting

The IHO Marine Spatial Data Infrastructure Working Group (MSDIWG) is holding a day-long Open Forum, "External Relations to MSDI," on Tuesday, February 4, 2014, at 1 Veterans Plaza, Silver Spring, Maryland, USA. This will be followed by MSDIWG Meeting No 5 at the same venue from Wednesday 5th- Friday 7th February which will include WG Work Plan task group break-out sessions.

#### Work Programme

##### Challenges for IHO:

At the MSDIWG4 meeting there was a discussion based on the presentations given at the Open Forum meeting about how MSDI had progressed in MS. Key points raised from MSDIWG members in this discussion included:

- The focus on navigational outputs is constraining the potential role of HO's. There needs to be a multi-use approach by MS.
- MSDI is not different from but merely an extension of SDI.
- Some MS are constrained in their approach to the provision of data for wider use because of their strictly imposed governance models.
- 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.
- The "Blue Economy" requires greater engagement and action from stakeholders to deliver social and economic value from the management of the seas.
- 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.
- 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.
- Hydrographic data required by most users are XYZ bathymetry data (with 3D/4D representation in future) and the Coast Line.
- Storage, quality and harmonisation of bathymetric data across international and inter-departmental boundaries are critical to wider use.
- MSDI is a key driver in the success of future e-navigation initiatives. ACTION: MSDIWG to provide a paper to HSSC5 outlining the products and services that MSDI would enable to support e-navigation.
- The need to develop "use cases" stating the value and benefit around the wider application of hydrographic data is urgently required.
- Cooperation with industry is essential. MSDI exceeds the limits of the public and commercial domains.

The challenges for IHO with relation to MSDI were discussed. The following challenges IHO MS face were identified from the questionnaire results and from the collective input of MSDIWG4 attendees and the Open Forum:

- 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 practice in managing and publishing data.
- 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.
- 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.
- Intellectual Property, reliability of data, copyright and rights management initiatives making access to all data easier; the role of free and open data, e-navigation and MSDI 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.

The MSDIWG4 meeting reviewed the existing work plan, set at HSSC1 in November 2009 and agreed that changes were necessary to reflect the phase of development reached by MS in their approach to MSDI: that of engagement and implementation.

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:

The main topics and ideas in establishing a new work plan has been:

- Prepare a paper to be submitted to HSSC5 to reinforce the need for a more proactive approach to MSDI for inclusion on the IRCC and RHC agenda.
- 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.
- Set up an INSPIRE Task Group working with IHO and EC-JRC (under existing MoU) to resolve technical problems impacting on the implementation of MSDI and compliance with INSPIRE.
- Set up a Working Group to further develop syllabi for MSDI and associated learning subjects.

The MSDI WG has, in the time since the MSDI WG4 meeting, focused on establishing a new work programme for the period 2013 to 2018. The work programme is divided in 4 initiatives. Additional tasks have been established for every initiative as stated below:

Initiative 1: MSDI - Review of progress across the Marine Sector; 10 tasks

Initiative 2: MSDI and Member States – Review and Status report; 4 tasks

Initiative 3: What needs to be done – A practical approach to MSDI implementation; 7 tasks

Initiative 4: Supporting MSDI Implementation - Training and Communications: 7 tasks

A draft work plan is attached as Annex B.

The MSDI WG considered the need to propose changes to the MSDI WG Terms of Reference which were subsequently discussed and agreed. They now include a vision “to place hydrography, and its value to social and economic development, at the heart of Spatial Data Infrastructures (SDI’s) across the World” as well as an objective “to enable IHO Member States to develop their capability to engage and participate in regional and / or national MSDIs, and implement SDI principles and the benefits they bring”. A proposal for draft revised Terms of Reference for the MSDI WG is attached as Annex C.

### **Progress on HSSC Action Items**

Action HSSC4/32 is for MSDI WG4" to consider, within its work plan, the development of content for an “introduction to MSDI” training course ”.

This action point is included in future work of the MSDI WG as stated in the draft work plan under Initiative 4: Supporting MSDI Implementation - Training and Communications. Especially with a focus on the tasks:

4.1 Identify the need for education and training among the Member States and report to WG Chair.

4.2 Establish a MSDI training syllabus for use across IHO community.

4.5 Provide MSDI educational content to IHO Web site.

### **Problems Encountered**

#### Resources

There are increasing demands being placed on a very few members of MSDI WG to attend IHO sponsored events such as Regional Hydrographic Commissions and MSDI meetings (e.g. Baltic Sea RHC MSDI WG), organizing and delivering MSDI WG meetings annually; attending meetings with FIG, EC and other regional bodies as well as invitations to speak at industry seminars and meetings on the subject of MSDI. This is being stimulated by the wider maritime community seeking to gain a greater understanding and perspective of MSDI, the importance of MSDI globally and how this will impact on them. In addition there is an appetite to gain a greater understanding of the workings of the WG and what it will deliver over time. In order to mitigate the risk of the limited resources provided by HO’s

leading to an inability to respond positively to these requests, the MSDIWG management team is respectfully seeking approval from HSSC to set aside funds, potentially through CBSC, to allow for more effective governance, administration and outreach of the WG. This approach should take account of the life-span of the current 5 year work plan.

#### Duplication of effort

There are other IHO Committees and Work Groups that are investigating the possibilities of consolidating their activities into the MSDIWG. One is the MEIP in MACHC RHC and the other is the Hydro Dictionary WG both of which are finding it difficult to make headway in the face of sub-optimal support from MS and Associate MS.

#### **Any Other Items of Note**

##### IHO-EC meeting

There have been some preliminary meetings between EU/EEA, Hydrographic Offices and IHB. There has been some consideration to task the MSDIWG regarding INSPIRE and other EU related matters, including a MSDI study on relevant marine data features and geospatial standards adequate for supporting the implementation of a proposed directive on Marine Spatial Planning and ICM.

As indicated below, the new draft work program includes several tasks and work items relevant to the MSDI/MSP topic from the IHO-EC meeting. It should be possible to carry out the MSDI tasks addressed through the IHO-EC meeting, within the existing frames of this proposal (ref. key actions above).

To avoid duplication of initiatives to HSSC, Norway and Denmark have taken the position that it was unnecessary to write a submission paper to HSSC to task MSDIWG on activities which is feasible through the existing work program proposal already presented from MSDIWG to HSSC5.

Among the most relevant key actions from the work plan proposal:

- Liaison with other organisations to identify new uses for data and value of HO data to economic development (e.g. EC)
- Identify and recommend possible solutions to significant technical issues related to interoperability
- Provide updated information on all European Marine/Maritime initiatives (e.g. INSPIRE, EMODnet, SeaDataNet)
- Liaise with TSMAD regarding level of S-100 understanding and use in support of SDI activities (e.g. INSPIRE)
- Determine hydrographic data set(s) that should be included in MSDI (e.g. identify data layers for usefulness to non-navigational sectors, identify core reference datasets for MSDI, define publishing mechanism for sharing data)

##### GGIM/FIG Conference held in Cambridge, UK in July 2013

In the proceedings of the above event, the report entitled "Critical issues relating to the integration of land and marine geospatial information" tabled by IHO and FIG and the supporting background document, authored by FIG, raises some good points in that the global GI community needs to:

- build and use common standards and frameworks to ensure interoperability;
- enhance institutional arrangements and stakeholder collaborations;
- improve returns on investment through better coordination, use and reuse of data, information and systems and to enhance innovation and productivity;
- develop a legal framework to provide the institutional structure for data sharing, discovery, and access;

- position infrastructure to enable and benefit from satellite based positioning possibilities and reference systems.

The document also mentions C-17 and the work of both the MSDIWG thus far and the developments attained in the BSHC. However, none of these statements are new.

An important question to consider would be If IHO should take the lead and commission an advanced practical study into this very important area of interest? IHO President has repeatedly stated that the role of HO's is now far more than just charting. It has valuable data as its primary resource and must make that data available to a wider audience in order to drive "The Blue Economy" and all it signifies, in terms of economic and socio-economic development. MSDI would facilitate much of what can be achieved in this area.

The MSDIWG management trio has discussed this subject area as part of its 5-year work plan. However, given the predicted level of commitment and resources available, this will be difficult unless it is proactively sponsored by the IHO.

### **Conclusions and Recommended Actions**

The work in the MSDIWG is well underway and a new work plan has been established. The new work plan will establish the framework for the WG, in order to cope with the challenges in a forward-looking perspective. HSSC5 is recommended to endorse the continued activity of MSDIWG.

### **Action Required of HSSC**

The HSSC is invited to:

- a) consider the suggestions made in the MSDIWG report;
- b) endorse the MSDIWG report;
- c) consider the suggested changes to the MSDIWG Terms of Reference;
- d) approve the suggested changes to the MSDIWG Terms of Reference;
- e) approve the MSDIWG work plan.

**Annex A:**

**MSDIWG Membership**

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Annex B:

Draft IHO Marine Spatial Data Infrastructure Working Group

Work Plan / 2013 – 2018

Task	Work item	Priority H-high M-med L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Persons responsible inc: main contact person(s)	Related Publications/ Standards/WG/Or organisations
<b>Initiative 1: MSDI - Review of progress across Marine Sector</b>								
1.1	Conduct a review of MSDI that includes conceptual descriptions of the four sub-areas of MSDI as per 1.1a-d.	M	<ul style="list-style-type: none"> <li>Fundamentals of MSDI (i.e. content, governance, ICT and standards)</li> <li>Making the case for MSDI; business case development.</li> </ul>	Jan 2013	Oct 2015	Planned	MSDIWG Chair/Vice Chair,	C-17/CBSC MSDI Syllabus
1.1a	Technical issues	M	<ul style="list-style-type: none"> <li>Define standards for interoperability</li> </ul>	Jan 2014	Oct 2015	Planned	MSDIWG Chair, M. Osborne (OceanWise - UK); J. Rapaport (Caris - Canada); R. Ponce (Esri - USA)	C-17, INSPIRE
	<ul style="list-style-type: none"> <li>Data harmonisation (i.e. Land-Sea)</li> </ul>							
1.1b	Governance	H	Define key challenges in respect of:				MSDIWG Chair/Vice Chair, IHB representative	<a href="http://www.creativecommons.org">www.creativecommons.org</a>
	<ul style="list-style-type: none"> <li>Change management</li> </ul>		<ul style="list-style-type: none"> <li>Identify organisational attitudes</li> </ul>	Jan 2013	Mar 2016	Ongoing		
	<ul style="list-style-type: none"> <li>Intellectual property</li> </ul>		<ul style="list-style-type: none"> <li>Resolve IP issues in data</li> </ul>	Jan 2013	Mar 2016	Ongoing		
	<ul style="list-style-type: none"> <li>Copyright and licensing</li> </ul>		<ul style="list-style-type: none"> <li>Define release mechanisms</li> </ul>	Jan 2013	Mar 2016	Ongoing		
	<ul style="list-style-type: none"> <li>User requirements</li> </ul>		<ul style="list-style-type: none"> <li>Understand user needs</li> </ul>	Jan 2013	Mar 2016	Planned		



1.1c	Standards and specifications	M	• Status of adopted technical standards	Jan 2013	Feb 2015	Ongoing	E. Vos (WG Vice Chair - Netherlands); All WG Members	INSPIRE, OGC, ISO, IHO
			• Status of new IHO data specifications					
1.1d	Content (data)	H	• Report in –“Is data fit for purpose for inclusion in SDI”	Jan 2013	Feb 2015	Ongoing	MSDIWG Member States	RHC reports  MSDIWG MS inputs
1.2	Liaison with other organisations to identify new uses for data. Identify value of HO data to economic development (e.g. MEIP)	M	• EC, UNESCO, IOC, IMO, ISO, OGC, FIG	Jan 2013	Jan 2018	Ongoing	MSDIWG Chair, Vice Chair, IHB representative, G. Homes (Australia)	UN, World Bank, Regional Dev Funds
1.3	Establishing an IHO MSDI community Wiki	L	• Develop website c/w add, modify, or delete content capability via a web browser)	June 2014	Dec 2015	Planned	Wiki Task Group, Chair t.b.c  A. Fernandez Ros (Spain)	
			• Create software in collaboration					
			• Develop content management system					
1.4	Maintain and extend Publication IHO MSDI C-17	H	• Update information	Sept 2014	July 2015	Planned	C-17 Task Group; Chair t.b.c  R. Rios (Argentina), R. Ponce (Esri - USA)	
			• Provide case studies					
			• Best practice guidelines defined					
1.5	Identify and recommend possible solutions to significant technical issues related to interoperability	H	• Define the scope of the work related to interoperability	June 2014	June 2015	Planned	E. Vos (Vice Chair)	TSMAD
			• Monitor developments	Aug 2014	Jan 2018	Planned		
			• Provide status report to MSDIWG including recommendations on how to proceed	June 2013	Feb 2014	Planned		
			• Standing WG Agenda item			Ongoing		
1.6	Provide updated information on all European Marine/Maritime initiatives	M	• Provide WG paper defining MS' INSPIRE obligations from a Hydrographic perspective	June 2013	Jan 2018	Planned	EC Task Group; Chair t.b.c.  C. Texier (France), E. Vos (Netherlands), J.P. Hartmann (WG Chair & Baltic & North Sea RHC	INSPIRE, Draft EC Directive on MSP and ICM
			• Identify and report on parallel programmes in EC (e.g. EMODNet, SeaDataNet, MSFD)					

							MSDIWG), M. Halliwell (UK)	
<b>Initiative 2: MSDI and Member States – review and status report</b>								
2.1	Prepare an MSDI review and status report, that identifies examples of MSDI best practise. This activity is a standing MSDIWG Agenda item	H	<ul style="list-style-type: none"> <li>MS report to each MSDIWG annual meeting listings successes and challenges and ways of overcoming them</li> </ul>	Sept 2013	Jan 2018	Planned	<b>Initiative 2 Sub Group required:</b> Chair/Vice Chair, C. Texier (France), P. Valing (Estonia)	
2.2	Set up Review Group to audit MS's to establish current position in respect of benefits and challenges faced by MS's role in NSDI and/ or MSDI	H	<ul style="list-style-type: none"> <li>Review 2008 survey and determine gain from a second survey.</li> </ul>	June 2014	June 2015	Planned	<b>Sub group of Initiative 2</b> MSDIWG Chair/Vice Chair, P. Valing (Estonia), J. Pepper (OceanWise - UK)  <b>plus other MS invitees?</b>	
			<ul style="list-style-type: none"> <li>Prepare updated questionnaire</li> </ul>					
			<ul style="list-style-type: none"> <li>Re-issue 2008 questionnaire (if appropriate)</li> </ul>					
			<ul style="list-style-type: none"> <li>Audit status of MS</li> </ul>					
			<ul style="list-style-type: none"> <li>Gather evidence</li> </ul>					
<ul style="list-style-type: none"> <li>Analyze/report results</li> </ul>								
2.3	Monitor and report on national and international MSDI activities and report to increase visibility of hydrographic importance (as MSDIWG Standing agenda item)	M	<ul style="list-style-type: none"> <li>Engage with relevant initiatives</li> <li>Report level of MS involvement (if any)</li> </ul>	April 2013	Mar 2018	Ongoing	<b>Sub group of Initiative 2</b>  A. Fernandez Ros (Spain), C. Texier (France)  MSDIWG Chair/Vice Chair	
2.4	Create relevant use cases, from potential users of MSDI.	H	<ul style="list-style-type: none"> <li>Identify and report success stories at sector, national or regional level</li> </ul>	Jan 2014	June 2015	Planned	<b>Sub group of Initiative 2</b>  R. Ponce (Esri - USA) , S. Grammann (Germany), IHB representative, MSDIWG Chair/Vice Chair	

Initiative 3: What needs to be done – A practical approach to MSDI implementation!								
3.1	Develop an MSDI WG strategy and revise work plan as necessary	H	• Produce a SWOT and GAP analysis	Jan 2013	Jan 2018	Planned	WG Management Group	
			• Define key strategic objectives					
			• Produce work plan c/w timelines, owners and outcomes					
3.2	Build a “template” business case for MSDI (including economic and socio economic benefits)	H	• Cost benefit analysis	Feb 2014	June 2015	Planned	MSDIWG Chair/Vice Chair, G. Homes (Australia), OceanWise (UK)	
			• Identify efficiency savings					
			• Making the case for MSDI to budget holder					
3.3	Create or facilitate development of pilot MSDI projects with Member States	M	• Identify methods by which IHO can support MS’ capability development in MSDI	Feb 2014	Jan 2018	Planned	A. Fernandez Ros (Spain), R. Ponce (Esri - USA), MSDIWG Chair/Vice Chair, IHB representative	<b>To be completed</b>
			• Provide “hands on” practical support to MS where necessary					
			• Provide IHO funding for the purpose					
3.4	Liaise with TSMAD regarding level of S-100 understanding and use in support of SDI activities (e.g. INSPIRE)	M	• Determine and log any issues of concern in WG regarding new standards	Jan 2013	Jan 2018	Ongoing	E. Vos (Netherlands), J. Rapaport (Caris – Canada), C. Texier (France)	<b>To be completed</b>
			• Obtain feedback from TSMAD on MSDIWG group-established topics					
			• Identify new S-1XX data specifications for datasets use in MSDI					
3.5	Launch an IHO “discovery” meta database, based on open-source technology which allows harvesting of information from IHO MS at regional level	L	• Set up metadata framework	June 2014	June 2016	Planned	<b>Open Source Task Group</b>	
			• Define content					
			• Identify data that is linkable					
			• Create view service					
3.6	Determine hydrographic data set(s) that should be included in MSDI	H	• Prioritize data layers by usefulness to non- navigational sectors	Jan 2013	Jan 2015	Ongoing	<b>Core Data Task Group</b>	
			• Identify priority order of importance (High, medium, low)					

			<ul style="list-style-type: none"> <li>Establish top 10 list</li> </ul>				(Australia), C. Texier (France), A. Fernandez Ros (Spain), R. Rios (Argentina), S. Grammann (Germany)	
			<ul style="list-style-type: none"> <li>Identify "core" reference datasets for MSDI</li> </ul>					
			<ul style="list-style-type: none"> <li>Define publishing mechanism for sharing data</li> </ul>					
3.7	Develop understanding of e-Navigation, its constituents and the role of MSDI as an enabler	M	<ul style="list-style-type: none"> <li>Develop pilot e-Navigation framework</li> </ul>	June 2014	June 2017	Planned	<b>e-Navigation Task Force Chair – M. Osborne (OceanWise, UK)</b> , P. Schwarzberg (Caris - BV), R. Ponce (Esri - USA), A. Fernandez Ros (Spain), C. Texier (France), S. Grammann (Germany)	
<b>Initiative 4: Supporting MSDI Implementation - Training and Communications</b>								
4.1	Identify the need for education and training among the Member States and report to WG Chair	H	<ul style="list-style-type: none"> <li>Develop training events as required</li> </ul>	Oct 2013	Jan 2018	Ongoing	MSDIWG Chair & Secretary. <b>IHO CBSC in collaboration with MSDIWG</b>	
			<ul style="list-style-type: none"> <li>Deliver an INSPIRE Workshop with EC-JRC technical support</li> </ul>	Dec 2013	Apr 2014	Planned		
4.2	Establish a MSDI training syllabus for use across IHO community	H	<ul style="list-style-type: none"> <li>Senior Managers (i.e. Directors, Hydrographers, HR Managers)</li> <li>Practitioners (i.e. Hydrographic Surveyors, Cartographers, Oceanographers, IT specialists)</li> </ul>	Oct 2013	Jan 2014	Ongoing	<b>Syllabus Task Group</b>  R. Ponce (Esri -USA), A. Hoggarth (Caris - Canada), J. Pepper (OceanWise - UK), MSDIWG Chair, IHB representative.  <b>HO members to be confirmed.</b>	
4.3	Organise Annual MSDIWG 1-day conference/open forum, as back to back arrangements with MSDIWG Annual Workshop ( if possible)	M	<ul style="list-style-type: none"> <li>Date and venue defined</li> <li>Logistics in place</li> <li>Conference programme defined</li> </ul>	Sept 2013	Jan 2018	Planned	MSDIWG Management Group (Chair/Vice Chair, Secretary, IHB representative)	

4.4	Host country Organise and deliver 2-day Annual Workshop of MSDIWG	H	<ul style="list-style-type: none"> <li>2-day workshop to be run Q1 of each year; <ul style="list-style-type: none"> <li>2014 NOAA, Washington DC</li> <li>2015-18 tbc</li> </ul> </li> </ul>	Sept 2013	Feb 2014	Planned	MSDIWG Management Group (Chair/Vice Chair, Secretary, IHB representative)	
			<ul style="list-style-type: none"> <li>Develop Workshop programmes</li> </ul>	Oct 2013	Jan 2014	Planned		
4.5	Provide MSDI educational content to IHO Web site	H	<ul style="list-style-type: none"> <li>Set up schedule for presentations/papers from MSDIWG members/others to be uploaded to Web site.</li> </ul>	Oct 2013	2018	Planned through workplan lifecycle	<b>Syllabus Task Group</b>  R. Ponce (Esri – USA)  <b>Chair t.b.c.</b>	
			<ul style="list-style-type: none"> <li>Identify and make available MS Web sites/papers that address technical issues such as datums, WMS, WFS for charting data</li> </ul>					
			<ul style="list-style-type: none"> <li>Poll MSDIWG members for input work, with IHB to post on IHO Web site</li> </ul>					
			<ul style="list-style-type: none"> <li>Poll MS via questionnaire (if reissued)</li> </ul>					
4.6	Develop external communications programme to promote the work of the WG (e.g. to Maritime Press; IMO, IOC/IODE/FIG/EC) and internal communications programme using IHO website (Ref 4-5) and e-mail blasts for MSDI news and related hot topics	H	<ul style="list-style-type: none"> <li>Prepare an MSDIWG paper to IMO dealing with E-navigation and MSDI from a Hydrographic approach</li> </ul>	Aug 2013	Jan 2018	Planned	<b>Communications Task Group</b>  MSDIWG Chair, Vice-Chair & Secretary. C. Texier (France)  <i>Plus other members from Task Groups</i>	
			<ul style="list-style-type: none"> <li>Prepare technical and organisational articles to wider stakeholder communities</li> </ul>					
			<ul style="list-style-type: none"> <li>On-line publishing</li> </ul>					
4.7	Ensure IHO (Res 2/1997 as amended) is upheld at all RHC's in that MSDI is a standing reporting agenda item	H	<ul style="list-style-type: none"> <li>MSDIWG paper to IRCC re-stating importance of RHC's placing MSDI as an agenda item at RHC meetings</li> </ul>	July 2013	June 2014	Ongoing	MSDIWG Chair/Vice Chair	HSSC, IRCC, CBSC
			<ul style="list-style-type: none"> <li>MSDI inputs and actions from RHC's fed back to MSDIWG</li> </ul>					

## Annex C:

# MARINE SPATIAL DATA INFRASTRUCTURES W.G. (MSDIWG)

## Terms of Reference -Feb 2013

Ref: 5<sup>th</sup> HSSC Meeting (Shanghai, November 2013)

### 1. Vision

"To place hydrography, and its value to social and economic development, at the heart of Spatial Data Infrastructures (SDI's) across the World".

### 1.2. Objective

Support the SDI activities of the IHO To enable IHO Member States (MS) develop their capability to engage and participate in regional and national SDI's and implement MSDI principles and the benefits they bring.

### 2. Authority

This Working Group (WG) is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval.

### 3. Procedures

The WG should:

- a) Monitor national and international SDI activities and present information on those activities to HSSC members by correspondence and at the annual meeting. Work with relevant IHO Working Groups (e.g. TSMAD, SNPWG) to resolve technical and organisational issues that impact the ability of MS to develop a role in MSDI.
- b) Promote the use of IHO standards and member state marine data in SDI activities.
- cb) Liaise, as appropriate, with other relevant technical bodies such as the IOC, and the World Data Centres for Oceanography, Bathymetry and Marine Geophysics, to increase the visibility of marine spatial data. Communicate with relevant external bodies (such as IOC, GSDI, EC-JRC) to increase the exploitation of marine data.
- c) Encourage the sharing of knowledge and experience of MSDI across the HO community through an effective communications programme.
- d) Propose any Technical and/or Administrative Resolutions that may be required to reflect IHO involvement in the support of SDI. 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:
  - a. Fundamentals of MSDI (i.e. content, governance, ICT and standards)
  - b. Making the case for MSDI including business case development
  - c. Data sharing and publishing

- d. Change management<sup>1</sup>
- e. Intellectual property, copyright and licensing
- a.f. User requirements

~~f) Determine any actions that the IHO and individual M/S might take to forge links with other bodies (e.g. OGC, ISO-TC211, IOC) to ensure M/S are best placed to meet the developing challenges associated with data management and governance.~~

~~g) Identify and recommend possible solutions to any significant technical issues related to interoperability between maritime and land-based inputs to SDI, and in particular Identify actions and share solutions to allow MS to overcome data management and governance or governance issues in particular:~~

- ~~1. Datum issues-Domain data harmonisation and interoperability (e.g. Land-Sea)~~
- ~~2. S-100 interoperability with SDI-Wider use of data in emergent applications (e.g. Marine Spatial Planning; e-navigation)~~
- ~~3. S-100 interoperability with oceanographic, marine biological, geological and geophysical data structures-Liability in and security of data~~

~~eg) Identify actions and procedures that the IHO might take to contribute to the development greater understanding of Spatial Data Infrastructure (SDI) and more particularly MSDI in support of Member States.~~

h) Identify any IHO capacity building requirements.

~~i) The WG should work by correspondence, and use group meetings, workshops or symposia only if required. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.~~

ji) 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~~ MS, Expert Contributors and Accredited NGO Observers, all of whom have expressed their willingness to participate.
- b) ~~Member States~~ MS, Expert Contributors and Accredited NGO Observers may indicate their willingness to participate at any time. A membership list shall be maintained and confirmed 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 a representative of a ~~Member States~~ MS. 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~~ MS 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 M/S 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,

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<sup>1</sup>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 change stakeholders to accept and embrace changes in their business environment.

including for elections of the Chair and Vice Chair, this shall be achieved through a postal ballot of those M/S on the current membership list.

- f) ~~If a secretary is required it~~ A secretary should normally be drawn from a member 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 M/S 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.