6th HSSC MEETING

Viña del Mar, Chile · 11-14 November 2014

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

Submitted by:	Chairman, MSDIWG
Related Documents:	None
Related Projects:	None

Chair:	Jens Peter Hartmann, Denmark
Vice-Chair:	Ellen Vos, Netherlands
Secretary:	John Pepper, OceanWise
Member States:	Argentina, Australia, Brazil, Canada, Cuba, Denmark, Estonia, Finland, France, Germany, Italy, Japan, Korea (Rep of), Latvia, Nigeria, Netherlands, Norway, Portugal, Romania, Slovenia, Spain, Singapore, Sweden, Ukraine, UK, USA
Expert Contributor:	CARIS; Envitia; ESRI; EUCC; KESTI; OceanWise; Wuhan Univ, China; Geosciences Australia See Annex A for full details of membership

Meetings Held During Reporting Period

The fifth meeting of IHO Marine Spatial Data Infrastructure Working Group (MSDIWG) took place in Silver Spring, Maryland, USA, hosted by NOAA, from 5th-7th February 2014. The outcome of the meeting is available from the HSSC section of the IHO Website under the MSDIWG.

The MSDIWG meeting was preceded on 4 February by an MSDI Open Forum meeting. The overall title for the Open Forum meeting was “More than Hydrography, Better Decisions from Better Data”.

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.

Next Planned Meeting

The IHO Marine Spatial Data Infrastructure Working Group (MSDIWG) is holding a day-long Open Forum, MSDI meeting in February 2015. The title of the Open Forum meeting is Building a Marine Spatial Data Infrastructure “Are the principles at odds with strategies for delivery?”

The Open Forum meeting will be followed by a three day-long MSDIWG-6 meeting at the same venue and the meeting will include WG Work Plan task group break-out sessions.

The MSDIWG-6 meeting and Open Forum meeting will be hosted by UKHO and held in London in February 2015. Exact date is to be determined. 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.

Work Programme

The 2014-15 Work Plan was refined at the recent MSDIWG Meeting No 5 in Silver Spring, Maryland, USA from 5th-7th February 2014. This was based on the HSSC-5 agreed 2014-15 Work Plan for the WG.
Key to being able to deliver this Work Plan is the six supporting tasks now in place, namely:

1. Identify and promote national and regional best practises for land-sea integration to enable cross- border integration between nations (United Nations E/C.20/2013/10/Add.1.refers)

2. Review existing standards for the provision of maritime components of spatial data infrastructures (United Nations E/C.20/2013/10/Add.1 refers)

3. Develop content for MSDI training and education courses

4. Maintain MSDI reference documentation on the IHO website

5. Maintain and extend IHO MSDI Publication; C-17 (IHO Task 2.9.2 refers)

6. Ensure that MSDI is a standing agenda item for RHC meetings (IHO Resolution 2/97 refers).

See Annex B for full details of the work programme.

At the 5th Marine Spatial Data Infrastructure Working Group Meeting in Silver Spring a summary of MSDIWG Actions plan was established in order to ensure the right progress.

Progress on HSSC Action Items

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 the work plan.

Action HSSC5/49: MSDIWG to consider the impact of the UN-GGIM initiative on its work plan, taking into account the items identified in paragraph 11 of HSSC5-05.7B, and report to HSSC-6.

The MSDIWG have contributed to IHB in the work with UN-GGIM in establishing 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.

IHO should state its general support to these principles and that IHO has policies and initiatives in place to implement them. This includes the existence and work plan of the MSDI WG and the fact that knowledge of MSDI - and by association these principles - is already being delivered to Member States as part of the IHO's capacity building programme however more time and effort in this respect is required.

Progress on IRCC Action Items

Action IRCC4/23 Investigate the possibility to deliver a MSDI courses with IOC and/or other organizations.

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

Task IRCC5 11/2013 Contribute to the development of MSDI.

A paper on how IHO can contribute to the development of MSDI was forwarded to IRCC6. The MSDIWG presented the paper at IRCC6. The paper focuses on how IHO could contribute to the development of MSDI. The paper ended up with conclusions and recommendations in order for IRCC to contribute to the development of MSDI and it was recommended that IRCC should:

- Take note of the items in the paper and invite MS, observers and expert contributors to participate in active debate, workshops and briefings facilitated by RHC‟s as a matter of course, not by exception.
- To empower RHCs to imbue a sense of urgency in MS to take a more proactive role in engaging with government, commerce, academia and the third sector to seek a renewed mandate for hydrography as the valid “science of the oceans” in the fast changing information world.
- To encourage RHCs take advantage of the growing library of physical and online resources that MS can use to further their understanding, interest and knowledge of NSDI and MSDI.
- To identify “ambassadors” who are willing and able to take the MSDI message to MS to energize them in taking the actions necessary to bring about organizational change.
- To support RHCs in facilitating further Capacity Building short MSDI training courses for practitioners and MSDI briefing sessions for senior managers and/ or directors in MS to enable them to provide the necessary vision and direction for HO‟s.

IRCC6 acknowledges the recommendations from the MSDIWG and two actions items established:

Action IRCC6/43 Include a MSDI agenda item at IRCC7

Action IRCC6/44 Facilitate the move of the MSDIWG from HSSC to IRCC

The MSDIWG fully supports the decisions taken by IRCC6.

Problems Encountered

There are increasing demands being placed on a very few members of MSDIWG to attend IHO sponsored events such as Regional Hydrographic Commissions and MSDI meetings (e.g. Baltic Sea RHC MSDIWG), organizing and delivering MSDIWG meetings annually; attending meetings with 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 limited resources provided by HOs is leading to an inability to respond positively to these requests.

Any Other Items of Note

- **INSPIRE**

The European Directive INSPIRE (the Infrastructure for Spatial Information in the European Community) held its annual conference in June 2014 in Aalborg, Denmark. The implementation of the INSPIRE Directive is halfway, at crossroads, so a mid-term evaluation has just been conducted. During the closing plenary session Mr. Alessandro Annoni (EC/JRC) concluded that one of the next steps is to include Marine (Spatial) Data Infrastructure explicitly in the scope of INSPIRE. During the summer a Marine Pilot has been initiated to extend the German example presented by Mr. Johannes Melles (BSH) across the borders with Denmark and the Netherlands.

There was a parallel track dedicated to "Water and INSPIRE: A Sea View" chaired by Mr. Andrej Abramic (EC/JRC), including a contribution on behalf of the MSDIWG on the relation between land and marine information. Other contributions contained:

- relations between hydrographic data and (European) legislation and reporting, including Marine Strategy Framework Directive and Marine Spatial Planning
- requirements from the European Maritime Safety Agency
- different perspectives on the re-use of hydrographic data
- a Danish example on MSDI

To get some interaction with the INSPIRE community a MSDI workshop was organized on board of a tall-ship, resulting in about 30 attendees. Summary of this workshop was published in Hydro International.

- **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.

- **Involvement in RHC**

RHC's are critical to ensuring that its MS are made aware of the strengths and weaknesses that exists in many MS; the opportunities that exist for MS having a wider and enduring role in the future maritime information world but also the threats that exist if cultural and organizational change cannot be effectively delivered and quickly.

Fundamental to enabling the development of an effective MSDI is the definition and implementation of appropriate governance. This requires a clear definition of all stakeholder interests and anticipated outcomes. Successful implementation will require commitment by MS to grasp a better understanding of the four key components of MSDI, and

how these interact to deliver more efficient operational HO's, better placed to meet the needs of a wider data user community. To do this, HO's will need to invest time and money in the processes of organisational and personal "change". Clear success criteria and progress milestones will need to be defined before embarking on programmes of work.

- **Education**

The IHO is committed, through its Capacity Building Programme for 2013-2017, delivered by RHC's, 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 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's 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.

- **Towards Data Centricity**

The output of most HOs is focused on products rather than data. Most HOs focus on supplying products to a narrow group of users, driven by the need for compliance with SOLAS or support to national navies. Although a large amount of data is collected, only a small amount is passed on to the recipient of the product. Thus, the extent of knowledge transfer is only a small part of the potential of the original data. However, most hydrographic data sets have the potential of delivering a wider range of information to a wider range of users.

MSDI requires data to be held in a generic way, rather than as a particular product for a specific user group or purpose. The development of the Universal Hydrographic Data Model (S-100) is a strong enabler of enhanced data sharing across multi-disciplinary groups. S-100 is well understood to contribute to e-navigation, but its development is still relatively immature with very little data existing yet. The potential for HOs to contribute to MSDI and e-navigation is becoming more realistic, but requires serious consideration in terms of the consequences to how data is managed.

HOs need to consider their ability to provide data rather than products. At present most HOs work in a relatively restricted domain, mostly due to their government status, tightly defined responsibilities and funding arrangements. This limits their opportunities to reach their full potential as data custodians rather than product producers. Authorities who define the role of HOs need to be challenged to encourage support for increasing the potential of hydrographic data beyond existing use.

Conclusions and Recommended Actions

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 HOs thereby providing a leading role in developing the "blue economy".

The work in the MSDIWG is well underway and a new work plan and a corresponding action plan have 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.

The move of the MSDIWG from HSSC to IRCC is in accordance with the discussions at HSSC5. The move of the MSDIWG from HSSC to IRCC is not expected to have major impact on the work in the MSDIWG in a short perspective. In a longer perspective, the MSDIWG will probably have a more focus on governances, strategic and political items and as a consequence addressing the more technical issues to the appropriate WG under HSSC and issues dealing with regional implementation to appropriate RHC or regional MSDIWG if established. The MSDIWG recommends that RHC should consider setting up MSDI subgroups in order to facilitate MSDI implementation on a national and regional level. See Annex D Terms of Reference for the Baltic Sea Marine Spatial Data Infrastructure (MSDI) Working Group (BSMSDIWG) for full details of the work program.

HSSC6 is requested to endorse the continued activity of MSDIWG and the move of the MSDIWG from HSSC to IRCC.

Action Required of HSSC

The HSSC is invited to:

a) endorse the MSDIWG report;
b) approve the MSDIWG work plan.

Annex A

Marine Spatial Data Infrastructure WG (MSDIWG)

Membership List

(5 September 2014)

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Annex B

MSDIWG WORK PLAN 2014–15 v2.0

MSDIWG Tasks

A	Identify and promote national and regional best practices: - for land-sea integration - for cross-border integration
B	Review the appropriateness of existing standards for the provision of the maritime components of spatial data infrastructures
C	Develop content for an MSDI training course
D	Maintain MSDI reference documentation on the IHO website
E	Maintain and extend 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)

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
A	Identify and promote national and regional best practices:	To consider the impact of the UN- GGIM initiative, taking into account the items identified in paragraph 11 of HSSC5-05.7B	H	Land-sea integration Cross-border integration	Mar 2014	2016	P	GeoSci (Aus), DK, FR, JP, SP, US	GGIM -3. UNITED NATIONS E/C.20/2013 /10/Add.1	http://ggim.un.org/ggim_committee.html

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
A.1		Create relevant use cases, from potential users of MSDI	H	1.1.Provide examples of generic providers of relevant data 1.2 Provide examples about user requirements	Jun 2014	Feb 2015	P	GeoSci (Aus), DK, FR, JP, SP, US		Report to MSDIWG-6
A.2		Set up a survey to establish current position in respect of benefits and challenges faced by MS's role in NSDI and/ or MSDI	M	2.1. Prepare questionnaire to investigate challenges and benefits in relation to MSDI 2.2.Circulate questionnaire to MS 2.3 Analyse results and use to update C-17 and on-line resources (Ref:Task D)	Apr 2014 May 2014 July 2014	May 2015 June 2015 Aug 2015	P	GeoSci (Aus), DK, FR, JP, SP, US		Report to HSSC-6.Nov 2014
A.3		Monitor and report on national, regional and international MSDI activities and report to enable increased visibility of hydrographic importance	H	3.1 Identify relevant initiatives 3.2 Engage with relevant initiatives	Apr 2014	Feb 2018	O	GeoSci (Aus), DK, FR, JP, SP, US		Report to MSDIWG-6
B/B.1	Review the appropriateness of existing standards for the provision of the maritime components of spatial data infrastructures	Liaise with TSMAD regarding level of S-100 understanding and use in support of SDI activities (e.g. INSPIRE)	H	B.1.1 Identify new S-1XX data specifications for datasets in MSDI B.1.2 Determine and log any issues of concern in WG regarding new standards and obtain feedback from TSMAD on them	Feb 2014 Feb 2014	Feb 2018	O	NL, NO, UK Caris,Envitia,	INSPIRE, Draft EC Directive on MSP and ICM	Report to MSDIWG-6

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
C	Develop content for MSDI training course(s)		H		Mar 2014	Jan 2018	O	Esri, USA, OceanWise		Report to MSDIWG-6
C.1	Identify the need for education and training among the Member States and report to WG Chair C.1.1 Develop and deliver training and education events as required C.1.2 Investigate the possibilities to arrange an IHO INSPIRE Workshop with EC-JRC	Determine which HOs in Europe (via Poll) are interested to have training involving EC-JRC (INSPIRE) & DG MARE (MSP Directive) • Harness the relationship between IHO and JRC • Gain greater working understanding/knowledge of EC INSPIRE and Marine Data Governance	H	Prepare a short paper and questionnaire for IHB to send out to the EC MS. Assuming positive response, produce a programme 1.5 day workshop arranged by IHB	Mar 2014 Mar 2014	Feb 2015 July 2014	O O			
C.2	Establish a MSDI training syllabus for use across IHO community aimed at: Senior Managers (i.e. Directors, Hydrographers, HR Managers); Practitioners (i.e. Hydrographic Surveyors, Cartographers, Oceanographers, IT specialists)	C.2.1 Develop topic areas (vice syllabus) for various levels: C.2.2 Prepare proposal for IHB on Website On-line training resource capability C.2.3 Provide input to IHB for the design and development of the Website for virtual training	H M M	• Senior Managers (1 day) • Middle Managers (2 day) • Tech Staff (5 day) To include provision of training opportunities, short training sessions, links with on-line resources, case studies, technical reports) Link to Task D.1.3	Mar 2014 May 2014 Oct 2014	Oct 2014 Aug 2014 Feb 2015	O O P	Esri, USA, OceanWise Esri, USA, OceanWise Esri, USA, OceanWise	IHO Pub: C-17	

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
D/D.1	Maintain MSDI reference documentation on the IHO website	D.1.1 Prepare a proposal to MSDIWG on re-structuring the MSDIWG page on the IHO website.	H	Deliver to MSDIWG6	June 2014	Feb 2015	P	Esri,IHB,DK		
		D.1.2 Request relevant MSDI information from IHO Member States.	H	CL sending questionnaire	Oct 2013	Feb 2015	P			
		D.1.3 Collect education information relating to MSDI, in coordination with sub-group C.	M	On Completion of task C.2.	Oct 2014	Feb 2015	P			

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
E	Maintain and extend Publication IHO MSDI C-17 (IHO Task 2.9.2 refers)		H		Mar 2014	Oct 2015	P	GeoSci (Aus), USA, FR, NL, RO	CBSC MSDI Syllabus, INSPIRE, OGC, ISO, IHO, RHC reports, MSDIWG MS inputs	
E.1	Conduct a review of MSDI that includes conceptual descriptions of the four sub-areas of MSDI as	E.1.1 Technical issues E.1.2 Governance E.1.3 Standards and specifications E.1.4 Content (data)	H	Review C-17 for updating/ restructuring/additions/modernizing • Alignment with OGC • Provide changes as a result of the MS survey in Task A • Update information • Provide case studies – see Task A • Best practice guidelines defined – see Task A • Define publishing mechanism for sharing data Ref Task A: Assist with questionnaire development for MS survey based on the review of C-17 Ref Task A: Update C-17 Annex A, SDI References (consider using survey to assist in update)	Mar 2014	Feb 2015	P			Discuss and review survey results at MSDIWG6 to determine next steps

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
E.2	Monitor technical developments in relation to MSDI	E.2.1.Review GGIM and OGC Oil Spill Results for relevance to C-17 E.2.2 Chair to request WG Members to notify twice yearly about developments that have occurred or are coming that may affect MSDI and/or C-17	H	Define the scope of the work related to interoperability Monitor developments Provide status report to MSDIWG including recommendations on how to proceed Standing WG Agenda item	Jun 2014	Feb 2018	P	GeoSci (Aust), USA, FR, NL, RO	TSMAD	
E.3	Determine hydrographic data set(s) that should be included in MSDI	E.3.1 Prepare MS survey questionnaire based on WG responses (Top 10 list), requesting MS to prioritize and add any new ones E.3.2 Publish priority list of top data layers on IHO Website	H	Prioritize data layers by usefulness to non-navigational sectors Identify priority order of importance (High, medium, low) Identify “core” reference datasets for MSDI Establish top 10 list Define publishing mechanism for sharing data	Mar 2014	Feb 2015	P	Geo-Sci (Aus), USA, FR, NL, RO		

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
F	Conduct annual meetings of MSDIWG, arranged back to back with 1-day MSDI Open Forum (IHO Task 2.9.1 refers)				Sept 2013	Feb 2018	O	UK, Esri, OceanWise, IHB		
F.1	Organise Open Forum and MSDIWG6	F.1.1.Identify HO to host WG6 and Open Forum	H	Confirm venue, dates and agenda, logistics	Mar 2014	June 2014	O			UKHO to host
		F.1.2 Form task team to develop content for Open Forum 2015	H	Plan programme and topic areas, Invite speakers and stakeholders	July 2014	Sept 2014	O			
		F.1.3 Arrange MSDIWG Agenda, Workshop programme and task group topics	H	Review Action Plan and report Develop agenda and circulate	Sept 2014 Nov 2014	Oct 2014 Nov 2014	O O	Chair, Vice-Chair and Secretary		

Ref	Task	Activities	Priority H-high M-med L-low	Actions	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
G	Ensure that MSDI is a standing agenda item for RHCs' meetings (IHO Res 2/1997 as amended)		H		Feb 2014	Feb 2018	O	UKHO, Esri OceanWise		HSSC, IRCC, CBSC
G.1	Provide position paper to IRCC 2014 on MSDI and its importance to IHO	G.1.1.First draft for circulation	H	Circulated to HSSC Chair for comment by end March	Mar 2014	March 2014	C			
		G.1.2 Include comments and prepare final version	H	Submit to IRCC secretary	Apr 2014	Apr 2014	C			
		G.1.3 Present to IRCC 2014 on the value and benefit to be derived by HO from MSDI	H	Aim is to reinforce the need for all RHC's to place MSDI as a standing agenda item	May 2014	May 2014	C		Hydro Int Feb 2014 article by M. Bergmann	
		G.1.4 Provide a discussion paper on the role of HO's in the provision of e-navigation services	H	Reinforcement of importance of MSDI as an enabler to e-Navigation	Mar 2014	Apr 2014	O			
G.2	Coordinate and collate all MSDI inputs and actions from RHC's to MSDIWG	G.2.1. MSDIWG to appoint a coordinator to collate MSDI status reports from RHC's	H	Coordinator appointed	June 2014	May 2018	P			
		G.2.2.Coordinator to ensure status reports feed into MSDIWG review of current practise	H	All reports delivered and collated as inputs to MSDIWG Action Plan	April 2014	2018	P			

Annex C

MARINE SPATIAL DATA INFRASTRUCTURES WORKING GROUP (MSDIWG)

Terms of Reference

Ref:
1) 1st HSSC Meeting (Singapore, October 2009)
2) 5th HSSC Meeting (Shanghai, China, November 2013)

1. Objective
Support the activities of the IHO related to Spatial Data Infrastructures (SDI) and/or Marine Spatial Data Infrastructures (MSDI).

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.

b) Promote the use of IHO standards and member state marine data in SDI activities.

c) 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.

d) Propose any Technical and/or Administrative Resolutions that may be required to reflect IHO involvement in the support of SDI.

e) Identify actions and procedures that the IHO might take to contribute to the development of SDI and / or MSDI in support of Member States (MS).

f) Determine any actions that the IHO and individual MS might take to forge links with other bodies (e.g. OGC, ISO TC211, IOC) to ensure MS 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:

1) Datum issues.
2) S-100 interoperability with SDI.
3) S-100 interoperability with oceanographic, marine biological, geological and geophysical data structures.
h) Identify any IHO capacity building requirements.

i) Develop a syllabus for MSDI familiarization.

j) 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.

k) Submit a report annually to HSSC.

4. Composition and Chairmanship

l) WG shall comprise representatives of Member States, Expert Contributors and Accredited NGIO Observers, all of whom have expressed their willingness to participate.

m) Member States, Expert Contributors and Accredited NGIO Observers may indicate their willingness to participate at any time. A membership list shall be maintained and confirmed annually.

n) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

o) The Chair and Vice-Chair shall be a representative of a Member State. 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.

p) 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.

q) If a secretary is required it should normally be drawn from a member of the WG.

r) 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.

s) Expert Contributors shall seek approval of membership from the Chair. 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.

t) All members shall inform the Chair in advance of their intention to attend any meetings of the WG. In the event that a large number of Expert Contributor members seek to attend a meeting, the Chair may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

Annex D

Terms of Reference for
the Baltic Sea Marine Spatial Data Infrastructure (MSDI) Working Group (BSMSDIWG)

(Approved by the BSHC 15th Conference 21 - 23 September 2010)
(As amended by the BSHC 17th Conference 18 - 21 September 2012)

With referencing to

- IHO Resolution 5 - 2009 on MSDI policy, adopted by the 4th Extraordinary International Hydrographic Conference in June 2009
- 1st HSSC Meeting (Singapore, October 2009)
- Marine Spatial Data Infrastructure Working Group (MSDIWG)
- Guidance for Hydrographic Offices IHO Publication C-17 - Edition 1.0
- EU INSPIRE Directive and respective national contributions of the MS

The BSHC at its 15th Conference recognised the need to initiate a study of MSDI in the Baltic Sea in order to identify areas where maritime SDI implementation is underway and where problems can be foreseen and how the Baltic member states see the future development of MSDI in the region.
Therefore the BSHC 15th Conference established the BSMSDIWG with the task to study MSDI in the Baltic 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, 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.
- Monitoring MSDI and marine- related initiatives, as well as more general geospatial developments with relevance for the Baltic Sea.
- To present an annual report to the BSHC. 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 MSDI actions.

Rules of procedures:

- All BSHC Members and Associate Members are encouraged to participate to the BSMSDIWG and to contribute to the work of the BSMSDIWG.
- The BSMSDIWG should be chaired by one of the Member States elected at the BSHC Conference.
- The BSMSDIWG should work as far as possible in accordance with existing guidelines and recommendations issued by the IHO, IMO and EU.
- The BSMSDIWG should consult Task Groups, Committees and Working Groups or other relevant bodies, as deemed necessary.
- The BSMSDIWG should inform the NSHC and the NHC to coordinate within the North Sea region as far as possible.
- The work of the BSMSDIWG will be carried out primarily by correspondence (via e-mails). The members are encouraged to reply without unnecessary delay.
- The BSMSDIWG should provide a Report to the BSHC 16th Conference.
- The BSMSDIWG Chair can on request coordinate BSHC MS views on MSDI topics and present them at the IHO MSDIWG