



**5TH MEETING OF THE HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE
(HSSC-5)**

Seagull On The Bund Hotel, Shanghai, China, 5-8 November 2013

FINAL MINUTES

Notes:

- 1) *The numbering of sections is the same as in the agenda (Annex E), although the order of taking the items was not exactly followed.*
- 2) *A list of acronyms used in this report is provided at Annex A.*
- 3) *A list of actions agreed at HSSC-5 is provided at Annex F.*
- 4) *All documents referred to in these minutes are available from the HSSC page of the IHO website (http://www.iho.int/mtg_docs/com_wg/HSSC/HSSC5/HSSC5Docs.htm).*

1. OPENING AND ADMINISTRATIVE ARRANGEMENTS

Docs: HSSC5-01A rev2 [List of Documents](#) (IHB)
HSSC5-01B rev4 [List of Participants](#) (IHB)
HSSC5-01C [HSSC - List of Contacts](#) (IHB)
HSSC5-01D rev1 [Terms of Reference for HSSC and related Working Groups](#) (IHB)

The Chair, Dr Mathias Jonas (Germany), opened the meeting and welcomed the participants to the meeting (list at Annex D). He complimented the hosts for the excellent choice of the venue, expressed his gratitude to China MSA for hosting the meeting and their kind hospitality.

Mr Chen Xiao Juang, Deputy Director General of Shanghai MSA, welcomed the participants to Shanghai, China, on behalf of China MSA and noted the importance of hydrography for the efficient shipping and the protection of the environment. He emphasised that these objectives can only be obtained through cooperation. His opening statement is at Annex B.

IHO President Robert Ward thanked the host and the meeting delegates, many of whom had travelled long distances. He noted that the technical programme is one of the busiest and most important programmes of the IHO. He mentioned that one of the most crucial issues that the Committee will need to address is the development of the S-100 standard and its dependent product specifications. He reminded the committee of the profile of S-100 outside the IHO. He noted that the role of the Committee is to find good pragmatic solutions and approve the way forward rather than attempting to solve technical issues which are under the responsibility of the working groups.

The Chair reiterated that there was a very busy agenda, and thanked the chairs of the various working groups for the great amount of work that has gone into preparing the papers presented at the meeting. He indicated that he would assume that the papers had been read by the participants before the meeting and invited the presenters to summarise the papers and concentrate on the actions requested from HSSC. He was looking forward to frank and open discussion and invited the participants to have a pragmatic approach.

IHB introduced the list of documents (HSSC5-01A - list at Annex C). Sweden noted that several response documents had only been posted on the web site shortly before the meeting and stressed the need to ensure that the more important documents are submitted on time. Sweden suggested improving the management of the documentation by adding a posting date on the document download page on the IHO website for future meetings.

Outcome:

- The Committee noted the documents introduced.
- **Action HSSC5/01:** IHB to insert posting date of documents on the download page of the IHO web site, for future HSSC meetings.

2. APPROVAL OF AGENDA AND TIMETABLE

Doc: HSSC5-02A rev5 [Agenda and Timetable \(IHB\)](#)

The agenda (annex E) was agreed with minor changes in the sequence of a few items.

Outcome:

- The Committee agreed the agenda.
- The Committee decided that item 5.10 (SCWG report) would be taken on Thursday morning at 9.45 via teleconference and that item 6.1 (ABLOS report) would be taken on Wednesday afternoon before or after the coffee break.

3. MATTERS ARISING FROM MINUTES OF 4th HSSC MEETING

Docs: HSSC5-03A [Minutes of HSSC4 \(IHB\)](#)
 HSSC5-03B rev1 [Status of Actions List from HSSC4 \(IHB\)](#)
 HSSC5-INF2 rev3 [Status of Temporary and Preliminary ENC Updates \(IHB\)](#)

3.A Minutes of the 4th HSSC Meeting (HSSC5-03A)

IHB reported that the minutes had already been agreed via IHO circular letter and were included in the list of documents for information only.

3.B List of Actions from the 4th HSSC Meeting and Status (HSSC5-03B)

IHB reported the status of actions from HSSC4, as detailed in HSSC5-03B rev1.

Action No	Description	Status
HSSC4/01	Actions from HSSC-3	Done (CL 34/2013 and HSSC5-INF2).
HSSC4/02	Length of coastline	Done. See IHR May 2013.
HSSC4/03	Performance Indicators	Done.
HSSC4/04	Performance Indicators	Done.
HSSC4/05	Performance Indicators	Done (HSSC5-04.1A).
HSSC4/06	Technology Updates	Done (HSSC5-02A).
HSSC4/07	TSMAD Work Plan	Done (HSSC5-05.1B)/
HSSC4/08	Use of Object Catalogue	Done (CL 102/2012). Approved by MS (CL 20/2013).
HSSC4/09	S-99	Done (CL 102/2012). Approved by MS (CL 20/2013).
HSSC4/10	Ocean Forecasts	In progress (HSSC5-07.9A).
HSSC4/11	Identifiers for S-100 based PS	Done - see paper (HSSC5-05.1E).
HSSC4/12	Magnetic Variations	Done (CL 102/2012).

Action No	Description	Status
HSSC4/13	Surface Currents	Done (CL 102/2012). Membership and officers agreed. SCWG web page created.
HSSC4/14	S-101 Test Plan Funding	Pending. Draft statement in TSMAD25-4.5.3 rev1. See also HSSC5-05.1A.
HSSC4/15	S-101 Test Plan Funding	Pending.
HSSC4/16	AIS AtoN and ENCs	Done (EB54 - TSMAD and PB10 - DIPWG).
HSSC4/17	DPSWG	Done (CL 102/2012). No new nomination.
HSSC4/18	S-63 Edition 1.0	Done (IHB Letter dated 14 Dec 2012). Out of some 215 OEMs, only 6 could not be reached. All other OEMs and all Data Servers received the letter. Issue monitored by DPSWG (HSSC5-05.2A).
HSSC4/19	DIPWG Work Plan	Done. See DIPWG work plan.
HSSC4/20	Portrayal Modelling	Done.
HSSC4/21	Portrayal & PL Issues	Done. No need for Portrayal Bulletin.
HSSC4/22	DIPWG Work (focus group meeting)	Done.
HSSC4/23	Statement of requirements. Contracting out Portrayal & PL enhancements	Done. SOW dated 7 May 2013.
HSSC4/24	Contracting out Portrayal & PL enhancements	Done. Contract awarded to CARIS.
HSSC4/25	S-100 & S-101 Master Plan	Done (HSSC5-05.1C).
HSSC4/26	SNPWG Master Plan	Done (HSSC5-05.4A).
HSSC4/27	Nautical Publications related PS	Done (HSSC5-05.4A).
HSSC4/28	CSPCWG TOR	Done. See CSPCWG TOR (HSSC5-01D).
HSSC4/29	Change to the Use of Object Catalogue	Done (UOC 4.0.0, para. 2.2.3.1, last bullet).
HSSC4/30	Training on the quality aspects of the practical use of ENCs	On-going. See CL 51/2013.
HSSC4/31	Training on the quality aspects of the practical use of ENCs	Done (HSSC5-INF4).
HSSC4/32	“Introduction to MSDI” Training Course	Done (HSSC5-05.7A, Annex B).
HSSC4/33	TWLWG coordination with other organizations	Pending. Item on the agenda of TWLWG5.
HSSC4/34	HDWG Membership	Done (CL 102/2012). Membership and officers agreed. See also HSSC5-05.9A.
HSSC4/35	Definitions of Altitude, Elevation and Height	On-going. See HSSC5-05.9A
HSSC4/36	Stakeholders’ Forum	Done.
HSSC4/37	Stakeholders’ Forums	Done (HSSC5-INF5).
HSSC4/38	HSSC work plan	Done (HSSC WP 2013-2014 - V1).
HSSC4/39	Implementation of S-100 based products and services	Done (HSSC5-05.1D).

Action No	Description	Status
HSSC4/40	e-Navigation	Done (HSSC5-02A, item 7.1)
HSSC4/41	Date & location of 2013 meeting. HSSC-5 to be hosted by China MSA in Shanghai	Done.

Outcome:

The Committee agreed that the pending three actions would be dealt with as follows:

- Action HSSC4/10 would be discussed under item 7.9;
- Action HSSC4/14 would be discussed under item 5.1;
- Action HSSC4/33 would be discussed under item 5.8.

3.C Status of Temporary and Preliminary ENC Updates (HSSC5-INF2)

Doc: *HSSC5-INF2 rev3* [Status of Temporary and Preliminary ENC Updates \(IHB\)](#)

IHB recalled the survey conducted in 2011 to assess the production and publication of T&P ENC updates (IHO CL52/2011). HSSC-3 had requested the IHB to re-conduct the survey in 2013 and this was confirmed by HSSC-4. As a result a new survey was initiated by IHO CL34/2013.

IHB invited the meeting to consider the consolidated results of the 2011 and 2013 surveys as detailed in Annex A of document HSSC5-INF2. IHB noted that the responses of MS included some suggestions for improvement of the guidelines for encoding T&P ENC updates contained in the UOC which need to be taken into consideration (see Appendix to Annex A of HSSC5-INF2).

The Chair noted that most ships navigate in parallel on ECDIS and paper charts, which requires that HOs ensure consistency between paper charts and ENCs. The IHO President noted dissatisfaction among the stakeholders community about inconsistencies from one State ENCs to another State ENCs. He emphasised that this reflected badly on the IHO. The Chair invited the Committee to refer this issue to the WEND WG and the Regional Hydrographic Commissions, via the IRCC.

Outcome:

- The Committee noted the report on the status of T&P ENC updates.
- The Committee agreed that the current status of promulgation of T&P ENC updates leaves further room for improvement and invited MS who do not plan to align their ENC and paper chart T&P update regimes to reconsider their position and report on any need for assistance to the IHB.
- The Committee noted the comments for improving the Guidelines for encoding T&P ENC Updates in the next edition of the UOC (Clause 2.6.2 of S-57 Appendix B.1 Annex A).
- **Action HSSC5/02:** IHB to invite MS who do not plan to align their ENC and paper chart T&P update regimes to reconsider their position and report to the IHB on any need for assistance.
- **Action HSSC5/03:** TSMAD to take into consideration the comments reported in paper HSSC5-INF2 (Appendix to Annex A), for inclusion in the next edition of the Use of the Object Catalogue (S-57, Appendix B.1, Annex A).
- **Action HSSC5/04:** IHB to inform IRCC of the concern that the differences between paper charts updates and ENC updates, as well as inconsistencies between ENCs from different producers, reflect badly on the IHO and to request IRCC to encourage the resolution of these issues by Regional Hydrographic Commissions via the WEND-WG.

4. HSSC ADMINISTRATION

4.1 Implementation of Programme Performance Indicators

Doc: HSSC5-04.1A [Programme Performance Indicators for HSSC \(IHB\)](#)

IHB provided some background to the requirement to collate Performance Indicators (PIs) and invited the meeting to consider the status of the HSSC WPIs, provided in Annex A of HSSC5-04.1A (see [IHB presentation](#)).

USA suggested to consider measuring the use of IHO standards (including product specifications) and investigating the use of ENC content outside the regulatory environment. USA noted that the ENC PI did not account for ENC distributed outside of the RENCs.

CIRM offered the assistance of industry. The Chair asked the Chair of TSMAD to what extent the activity on the S-100 Registry could be monitored as an indicator of its usefulness. TSMAD Chair responded that the number of entries in the Registry did not really measure its usefulness and recommended waiting until the Registry had reached its full maturity.

Singapore noted that PI reporting on deliverables conforming to timelines would be more meaningful. TSMAD Chair reminded the meeting that the work of HSSC working groups is based on voluntary contributions, which makes it difficult to enforce deadlines. IHB reminded the Committee that the approval of the HSSC Work Programme implies a commitment to contribute accordingly.

Outcome:

- The Committee noted the report on the implementation of performance indicators.
- The Committee requested WG chairs to ensure that the level of detail in their respective work plans is homogeneous and that they clearly identify the work items which are expected to be completed in the subsequent year.
- Furthermore the Committee agreed to invite the WEND WG - via IRCC - to assess the representativeness of the ENC usage indicator, which is based only on the inputs from Primar and IC-ENC, and to propose alternatives if appropriate.
- **Action HSSC5/05:** WG chairs to ensure that the level of detail in their respective work plans is homogeneous and that the work plans identify clearly the work items which are expected to be completed in the subsequent one or two years.
- **Action HSSC5/06:** IHB to invite WEND WG, via IRCC, to assess how representative is the ENC usage indicator based solely on the inputs from Primar and IC-ENC, and to propose alternatives if appropriate.
- **Action HSSC5/07:** Contributions for the 2013 period to be provided by HSSC WG Chairs (Performance Indicators no 2 and 3) and WEND WG Chair (Performance Indicator no 5) by 31 January 2014.

4.2 Review of the Structure of HSSC Working Groups

Doc: HSSC5-04.2A [Review of the Structure of HSSC Working Groups \(IHB\)](#)
HSSC5-04.2B rev1 [Creation of an S-100 Working Group \(USA\)](#)
HSSC5-04.2C rev1 [Optimizing HSSC Working Groups \(USA\)](#)
HSSC5-04.2D [Review of the structure of HSSC Working Groups - Comments by FR \(France\)](#)
HSSC5-04.2E [Comments by Finland on re-structuring HSSC Working Groups \(Finland\)](#)

The Chair noted that this is one of the most important items on the agenda. He stressed that the objective was to ensure that the Committee is prepared for the challenges of the future. He noted that this item had been the focus of discussion at an earlier HSSC meeting and acknowledged that six papers have been submitted to the Committee. He indicated that a consolidated draft had been prepared by the Chair Group, taking into account the initial papers from the IHB and from the USA and the comments submitted by Finland, France and the Chair of CSPCWG. The Chair invited members to consider the proposals in the consolidated draft and suggested to have a general discussion aiming at agreeing on the principles. If necessary a breakout group could be formed and come back to the plenary with options for further discussion on Thursday.

USA expressed its concern that MS which are not present will not get the opportunity to consider the Chair Group proposal. The Chair noted that the papers had been available on the IHO web site for a considerable time before the meeting, providing ample opportunity to all to submit comments.

The Chair outlined the papers that had been submitted and presented the Chair Groups views (see [Chair Group presentation](#)).

In response to Sweden's question about the availability of the presentation, the IHB confirmed that it had been posted on the IHO website.

China expressed support for the Chair Group proposal noting that the IHO should avoid establishing too many working groups as this will impact on the resources of MS to attend meetings.

Singapore referred to the comments that had been submitted by France and saw a need to consider what additional skills and resources will be required to implement the new structure.

Norway saw a need to take into consideration not only the move from paper to digital products and services, as reflected in the presentation, but also the growing use of hydrographic data for non-navigational purposes.

France reiterated its view that the inventory of MS commitments was essential and should be addressed in the proposal, before the new structure can be developed.

Finland expressed its support in principle of the consolidated proposal subject to studying in more details. Finland shared the concerns of others about the issue of resources, noting that the situation was difficult at the national level.

Canada supported the formation of the S-100 WG and the joining of the TWLWG and SCWG but questioned why S-58 - *Recommended ENC Validation Checks* had been included with the ENC standards and not with the S-100 WG.

USA commended the goals described in the presentation and welcomed the establishment of the S-100 WG. USA proposed to constitute an ad hoc group to review the issues and report back to HSSC and suggested that the ad hoc group should be composed of Member States (MS) representatives.

Poland recommended that the new terms of reference (TOR) should cover the interaction with other organizations, notably the organizations involved in the development of e-navigation. The TOR should specify the link with other international organizations and industry partners.

Australia considered that the proposal did address the concerns expressed by USA and others. Its view was that the Chair Group was the best informed structure for further developments. USA clarified that their intention was not to exclude the chairs of the WG from the ad hoc group but to broaden the input to MS representatives.

The Chair confirmed that the Chair Group had addressed the concern to reduce the work load while taking into account the development of new domains such as S-100. He noted that the issue of resources mentioned by France could only be considered once the structure and the work plan of the working groups were agreed in principles.

Netherland agreed that the focus of discussion should be first to agree on a good structure and then look at the resources.

Following further discussion within the Chair Group and consideration by the members off session, the discussion was re-opened after the review of the reports of the WGs. The Chair introduced an animated presentation of the proposed new structure to explain in more details how the number of working groups would be reduced and why the new structure would allow for more efficient work and better allocation of resources. He outlined the new construct of time-limited projects. He presented the timeline for developing the new structure which would be implemented after HSSC-6. He proposed to set up a correspondence group comprising the chairs of the WGs and open to MS. A meeting should be convened before HSSC-6 to finalize the proposal, including TOR and Rules of Procedure (ROP), which would be presented to HSSC-6 for approval.

Sweden stressed that the process needs to be as open and as transparent as possible. The Chair confirmed that the restructuring exercise would be led by the HSSC Chair and the IHB, but MS will be welcome to follow the work and provide comments and inputs.

IALA offered to share its experience of using an on-line platform for this type of work, referring to the difficulty of managing large groups such as the IALA e-NAV Committee.

USA suggested that provisions should be made to facilitate on-line remote access at meetings. The IHO President stated that the IHB is attempting to improve the facilities at the IHB and would appreciate feedback from other organizations having implemented such facilities.

Outcome:

- The Committee approved in principle the new structure of WGs and project teams proposed by the Chair Group.
- The Committee approved the establishment of a correspondence group (CG) composed of the Chairs of HSSC, TSMAD, DIPWG, CSPCWG, SNPWG, TWLWG, SCWG and an IHB representative to develop draft terms of reference and rules of procedure, and consider the composition of the new bodies as well as the appropriate timely transition arrangements.
- The Committee agreed that the CG be open to representatives of Member States.
- The Committee requested Member States and stakeholders to define their contribution in terms of resources to the new bodies.
- **Action HSSC5/08:** HSSC Chair and Secretary to establish a correspondence group composed of the Chairs of HSSC, TSMAD, DIPWG, CSPCWG, SNPWG, TWLWG, SCWG and an IHB representative, to develop draft terms of reference and rules of procedure for the proposed new HSSC bodies, and consider their composition as well as the appropriate timely transition arrangements.
- **Action HSSC5/09:** HSSC Chair to invite MS to participate in the HSSC Correspondence Group on HSSC WG restructuring.
- **Action HSSC5/10:** IHB to request Member States and stakeholders to define their contribution in terms of resources to the proposed new HSSC bodies.

- **Action HSSC5/11:** USA to propose possible solutions for remote meeting facilities at the IHB and at other meeting venues.

4.3 Maintenance of S-57 and S-52

Docs: HSSC5-04.3A [Procedures for the maintenance of S-57 and S-52 \(IHB\)](#)
HSSC5-04.3B [Comments by Finland to the Maintenance procedures of S-57 and S-52 \(Finland\)](#)
HSSC5-04.3C [Optimizing HSSC Working Groups \(DIPWG Chair\)](#)
HSSC5-04.3D [Procedures for the maintenance of S-57 and S-52 \(HSSC Secretary\)](#)

IHB presented the paper HSSC5-04.3A (see [IHB presentation](#)) and noted that the procedure for maintaining S-57 had been initially approved at HSSC-3. A review of the procedure had been discussed at the TSMAD25 meeting and further discussed at a “HSSC Road Map Workshop” which took place at the IHB in March 2013. Referring to the comments from Finland and from the DIPWG Chair, the IHB invited the Committee to decide on two options:

- Set up a drafting group to finalise the draft amendments for approval later in the meeting
- Send back the proposal to TSMAD and DIPWG for further review as proposed by Finland and approval by correspondence – or approval at HSSC-6

Finland presented its comments (HSSC5-04.3B) and requested that HSSC:

- clarify the proposed principal issues for maintenance procedures
- task TSMAD and DIPWG to review the procedures more thoroughly
- task TSMAD to formalise the S-57 maintenance sub-WG

The Committee decided that a drafting group (Chairs of TSMAD, and DIPWG, Finland and the IHB) should develop a final proposal for consideration later in the meeting.

The Secretary reported back on the outcome of the drafting group (HSSC5-04.3D). The Committee approved the consolidated amendments to the TOR of TSMAD and DIPWG proposed by the drafting group.

Outcome:

- The Committee noted the report of the drafting group (HSSC5-04.3D).
- The Committee endorsed the procedures described in Annexes 1 and 2 of the report.
- The Committee adopted the amendments to the current TOR of TSMAD and DIPWG proposed in the report.
- **Action HSSC5/12:** IHB to amend the terms of reference of TSMAD and DIPWG as proposed in the report of the drafting group (HSSC5-04.3D).

5. REPORTS BY HSSC WORKING GROUPS

5.1 Transfer Standard Maintenance and Application Development (TSMAD)

5.1A TSMAD Report

Docs: HSSC5-05.1A [Report and Recommendations of TSMAD \(TSMAD Chair\)](#)
[Draft Ed. 4.0.0 of S-57 Appendix B.1 Annex A "Use of the Object Catalogue"](#)
[Draft Supplement 3 to S-57 e3.1](#)
[Draft e5.0.0 of S-58 "ENC Validation Checks"](#)
[Draft e3.0.0 of S-64 "IHO Test Data Sets for ECDIS"](#)

The TSMAD Chair presented the report and recommendations of his WG (see [TSMAD presentation](#)) and noted that 2013 had been a very busy year for TSMAD members. Work on developing a test strategy for S-101 had been undertaken. Considerable effort had been devoted by the Data Classification and Encoding Guide (DCEG) to ensure that the document will be finalized at the next TSMAD meeting (TSMAD27). The TSMAD Chair invited the Committee to acknowledge the huge amount of work by many TSMAD contributors. He reported that the new edition of S-64 is almost complete, but is dependent on the completion of the revision of S-52 and noted the need to coordinate the development of the new editions of S-52, S-64 and IEC 61174.

The TSMAD Chair reported that S-100 continues to gain interest and that the TSMAD WG intends to start working on Edition 2.0 mainly to include GML as an encoding type. This addition is required by some of the product specifications under development.

The TSMAD Chair introduced the draft S-57 Supplement 3 which strengthens the mandatory role of S-58 for ENC validation, and includes some minor edits.

The TSMAD Chair introduced the draft edition of S-58 - *Recommended ENC Validation Checks* and noted that there have not been any changes to the content of the document. He explained that the tests have just been rearranged according to new categories; most importantly there is now a category of checks which ENCs must pass before they are released. The TSMAD Chair noted that there were a few minor issues that have been identified in the draft and proposed that these could be rectified during the meeting and reported back to the Committee (see section 5.1H below).

The TSMAD Chair noted that S-101 product specification templates are being developed for vector and coverage data types. He confirmed that a statement of requirements for the development of S-101 test plan had been drafted (action HSSC4/14) but noted that the implementation had been postponed (see section 5.1B below).

The TSMAD Chair briefed the Committee on establishing liaison with the International Association of Oil & Gas Producers (OGP) to ensure the greatest possible level of synergy between the industry standards developed by that organization and S-100 (see also section 7.7 below).

During the discussion which followed the presentation by the TSMAD Chair, CIRM noted the needs to consider what impact of “flagging” ENC in accordance with the new edition of S-64 will have for ECDIS manufacturers and the mariner, noting that “certified” ENCs could probably not be used without amending S-57. CIRM reminded the meeting that S-52 must be completed in order to complete S-64, which in turn needs to be completed in order to complete the new version of IEC 61174.

In response to an enquiry from Denmark, the TSMAD Chair confirmed that test datasets covering the polar areas had been included in the new edition of S-64.

In response to an enquiry from Sweden, the TSMAD Chair indicated that the changes included in S-57 Supplement 3 will not require MS to change existing ENC cells. It is only recommended to apply the changes to new cells or new editions.

The Chair proposed that HSSC endorsement of the new editions of S-52 and S-64 be obtained by correspondence before seeking the approval of Member States.

Outcome:

- The Committee noted the report of TSMAD, endorsed the continued activity of the working group, and approved its work plan, subject to its adjustment to the HSSC consolidated work program.

- The Committee approved the draft edition 4.0.0 of S-57 Appendix B1 Annex A - *Use of the Object Catalogue for ENC* (UOC) and invited the IHB to circulate the document to Member States for approval.
- The Committee endorsed the draft S-57 Supplement No 3 and invited the IHB to circulate the document to Member States for approval.
- The Committee agreed that the draft edition 3.0.0 of S-64 - *IHO Test Data Sets for ECDIS* be finalized at TSMAD 27 and then circulated to HSSC members for endorsement and subsequently to Member States for approval.
- The Committee agreed the need to advertise the draft new editions of S-58 and S-64 to the large community of OEMs.
- **Action HSSC5/13:** TSMAD to finalize the draft edition 3.0.0 of S-64 at TSMAD-27 (December 2013).
- **Action HSSC5/14:** TSMAD Chair to provide IHB with a clean copy of the draft edition 3.0.0 of S-64 for posting on the IHO website as a familiarization version.
- **Action HSSC5/15:** IHB to seek HSSC approval of the draft edition 3.0.0 of S-64 by correspondence through HSSC circular letter before end of October 2014 (in line with the publication of the new edition of IEC 61174).
- **Action HSSC5/16:** IHB to seek Member States approval of the draft edition 3.0.0 of S-64 by IHO circular letter.
- **Action HSSC5/17:** IHB to seek Member States approval of the draft edition 4.0.0 of the Use of the Object Catalogue (UOC - S-57, Appendix B.1, Annex A) by IHO circular letter.
- **Action HSSC5/18:** IHB to seek Member States approval of S-57 Supplement no 3 by IHO circular letter.

5.1B S-101 Value Added Roadmap

Doc: HSSC5-05.1B [S-101 Value Added Roadmap](#) (TSMAD Chair)

The TSMAD Chair presented the report noting that it had been produced in response to action HSSC4/07 (TSMAD Chair to include in the TSMAD work plan an additional work item to produce a roadmap [using mind map], taking into account the S-101 impact study and showing key tasks that have to be completed in order to implement S-100, and indicating interaction between the tasks and the implications for stakeholders). He drew attention to the section in the document which identifies the impact that S-101 will have on the various stakeholders. One of the items from the impact study highlighted issues related to scale dependent and scale independent features, and as a consequence this option has been suspended for the time being.

Denmark acknowledged the significant amount of work that went into the document and proposed that it should focus not only on the S-101 ENCs but cover other related product specification such as ice charts. Denmark also questioned whether there was a need to develop an implementation plan for the production of S-101 ENCs and other S-100 based products such as Inland ENCs.

CIRM suggested that the roadmap should consider updating mechanisms and take into account the IMO work on system updating.

USA thanked the TSMAD Chair for the comprehensive roadmap report and noted that NOAA will continue to support funding for the next version of the ENC S-57 to S-101 converter application.

The TSMAD Chair stated that the draft S-101 product specification is very close to completion, but further work is needed to finalize the feature catalogue builder and portrayal catalogue builder.

CIRM and IEC proposed that the timelines be revised to reflect delays in completing the draft S-101 product specification.

Canada noted that the options for converting S-57 data to S-101 data (figure 2) seem to preclude data producers doing the conversion. The TSMAD Chair noted that the diagram is intended to show how a distribution service might work and is not meant to be comprehensive or mandatory. It was decided to indicate under section 2.2.1 that the diagram describes the process applicable under the WEND model.

Outcome:

- The Committee noted the report and endorsed the draft S-101 Roadmap subject to a revision of the timelines. The document is to be placed on the IHO website as a living (updated) document.
- The Committee agreed that the S-101 roadmap document be reviewed periodically.
- **Action HSSC5/19:** TSMAD, in liaison with DIPWG, to provide the IHB with a statement of requirements for developing a feature catalogue builder.
- **Action HSSC5/20:** IHB to prepare and award a contract for the development of a feature catalogue builder, subject to the availability of appropriate resources.
- **Action HSSC5/21:** TSMAD Chair to incorporate in the draft S-101 Value Added Roadmap the comments expressed during HSSC5.
- **Action HSSC5/22:** IHB to post the amended S-101 Value Added Roadmap on the IHO web site.
- **Action HSSC5/23:** TSMAD Chair to include an additional item in the TSMAD work plan to review the S-101 Value Added Roadmap annually.

5.1C Master Plan for the development and implementation of S-100

Doc: HSSC5-05.1C [Master Plan for the development and implementation of S-100](#) (HSSC Chair, TSMAD Chair, DIPWG Chair, IHB)

The TSMAD Chair presented the report noting that it had been produced in response to action HSSC4/25 (TSMAD and DIPWG Chairs to produce a “master plan” document for the development of S-100 and S-101, in accordance with the life cycle diagram included in resolution 2/2007). He indicated that the document also includes implications for the DQWG, DPSWG, and stakeholders. He requested that HSSC considers the draft Master Plan, including its structure, and decide on the best way forward to finalize it.

Canada proposed to consider additional issues such as the migration strategy and barriers and risks to the implementation of the Master Plan.

The Chair proposed that the Master Plan should be a living document - maintained annually by the IHB - and invited members to provide the Secretary with any additions that they consider necessary.

Outcome:

- The Committee noted the report and endorsed the structure of the S-100 Master Plan.
- The Committee invited further comments and additions to the S-100 Master Plan.
- The Committee agreed that the S-100 Master Plan be reviewed periodically.
- **Action HSSC5/24:** IHB to post the S-100 Master Plan on the IHO web site.
- **Action HSSC5/25:** IHB to invite additional input from Member States and other IHO Stakeholders, to further develop the S-100 Master Plan.
- **Action HSSC5/26:** TSMAD Chair to include an additional item in the TSMAD work plan to review the S-100 Master Plan annually.

5.1D Regulatory process associated with the implementation of S-100 based products and services

Doc: HSSC5-05.1D [Regulatory process associated with the implementation of S-100 based products and services \(IHB\)](#)

The IHB presented the report (see [IHB presentation](#)), noting that it had been produced in response to action HSSC 4/39 (IHB, in liaison with HSSC Chair, to develop an outline paper on the regulatory process associated with the implementation of S-100 based products and services under the current SOLAS regime).

Outcome:

- The Committee noted the report and endorsed the recommendation to advise IMO to consider the revision of the relevant Performance Standards and other instruments, if required, as a component of the draft e-navigation strategy implementation plan to be finalized in 2014, for consideration by NCSR 1.
- The Committee noted that although the introduction of S-100 based nautical publications should not require new IMO instruments or any amendment to existing instruments, these requirements should nevertheless be considered and addressed as a component of the draft e-navigation strategy implementation plan.
- **Action HSSC5/27:** IHB to advise the IMO Correspondence Group on e-Navigation to consider the revision of the relevant performance standards and other instruments, if required, as a component of the draft e-navigation strategy implementation plan to be finalized in 2014, for consideration by NCSR 1.

5.1E Proposal to formalize the identifiers for S-100 based product specifications

Doc: HSSC5-05.1E [Proposal to formalize the identifiers for S-100 based product specifications \(TSMAD Chair\)](#)

The TSMAD Chair presented the report (see [TSMAD presentation](#)), noting that it had been produced in response to action HSSC4/11 (TSMAD to develop a nomenclature for S-100 based product specifications as part of the GI registry management). He reported that the chair group meeting prior to the main meeting had agreed an enhancement which he then presented to the meeting. Blocks of numbers up to S-399 would be assigned to the main partner organizations and then all other numbers beyond 400 would be assigned on a first-come first-served basis.

USA noted that organizations outside the IHO would like an S number and supported the revised proposal.

CIRM noted that the proposal was acceptable.

After further refinement by the chair group outside of the meeting, the Committee agreed on the nomenclature in Annex G.

UK proposed that there should be a standard process for assigning and managing formal identifiers. The TSMAD Chair noted that the relevant procedure was described in S-99 but that it might need some minor amendments.

Outcome:

- The Committee noted the report and approved the revised identifier proposal presented by the chair group (see Annex G).

- **Action HSSC5/28:** TSMAD to prepare a detailed registry based procedure for the allocation of product specification identifiers.

- **Action HSSC5/29:** IHB to inform partner organizations on the allocation of product specification identifiers, as in Annex G.

5.1F Report of the S-101 Impact Study

Doc: HSSC5-05.1F [Report of the S-101 Impact Study - FR views on the way ahead](#) (France)

France presented the report (see [FR presentation](#)), noting that the development and implementation of S-101 is much more challenging than it was for S-57. France considered that S-101 will not introduce a big technological breakthrough from the end-users' perception and the cost benefits are not clear. France proposed that a complete economic analysis should be considered and noted that such an analysis is beyond the capability and scope of TSMAD.

The TSMAD Chair noted that the study had highlighted a number of issues that need to be taken into account. He proposed that feedback should also be obtained from stakeholders, taking into account the complexity of the S-10x stack of products and the wider scope of e-navigation. The TSMAD Chair suggested that the new impact study proposed by France should be considered after completion of test beds.

The Chair questioned the reference to the frustration of mariners, and noted that the development of S-101 is not a cost cutting exercise. Noting that most of the concerns are addressed in the master plan and in the roadmap, he proposed to channel the input from the paper (HSSC5-05.1F) into these two living documents.

Denmark proposed that the Committee should wait until there are some use case studies / test beds before further work is carried out on impact studies.

CIRM noted that test beds are costly and expressed concern that the IHO would reconsider the development of S-101, referring to the impact this reconsideration would have on other stakeholders. CIRM invited IHO to take into consideration the point of view of all the users of the S-100 GI Registry.

Canada stressed the need to highlight the benefit of using S-101 ENCs in conjunction with the additional layers that will be developed.

The Chair concluded that the concerns of the members of the Committee would be reflected in the review of the roadmap and master plan and that the timelines of S-100 related developments should be synchronised with the implementation of the e-navigation strategy.

Outcome:

- The Committee noted the report and agreed that the conclusions should be integrated into the S-101 Value Added Roadmap and the S-100 Master Plan.
- **Action HSSC5/30:** TSMAD Chair to consider the impact of the recommendations contained in HSSC5-05.1F (S-101 impact study) on the S-101 Value Added Roadmap.
- **Action HSSC5/31:** IHB to consider the impact of the recommendation contained in HSSC5-05.1F (S-101 impact study) on the S-100 Master Plan.

5.1G Test Bed Projects in Support of S-101 Development and Implementation

Doc: HSSC5-05.1G rev1 [Test Bed Projects in Support of S-101 Development and Implementation \(ROK\)](#)

ROK reported that, in response to the S-100 Master Plan and S-101 Roadmap, KHOA had planned three S-101 test bed projects which are intended to contribute to the overall objectives of the developments within the projected timelines (see [ROK presentation](#)). In addition to the initial test bed projects during 2013-2015, KHOA plans to conduct other types of test bed projects that may be required to meet the S-101 “Full Implementation” scheduled for 2018.

The Chair congratulated the ROK for the work and the report.

USA concurred and invited the ROK to collaborate with the USA on the development of an S-57 to S-101 converter.

The TSMAD Chair commended ROK on their test bed development and noted that the work will be included in the S-101 test strategy. This will be taken forward at the next TSMAD meeting.

Canada asked whether the ROK would use the new S-64 test datasets and if the converter would be made available to TSMAD. ROK indicated that their intention is to use the new S-64 dataset and to make the converter available.

The TSMAD Chair advised that tools should be made widely available only once they have been fully tested to ensure their stability.

Australia saw benefits in having more than one converter. The TSMAD Chair noted that it would be better to have two separately developed converters for testing but that the intention is to have an optimised and consolidated version at the end of the process.

Outcome:

- The Committee noted the report and endorsed the need for conducting test bed projects as a crucial step in the development and implementation of S-100 and S-101 standards.
- The Committee supported the KHOA test bed projects and the inclusion of the S-101 test bed program as part of the TSMAD Work Plan.
- The Committee invited TSMAD to ensure that a single consolidated converter is made available at the end of the test bed process.

- **Action HSSC5/32:** TSMAD to include the KHOA S-101 test bed program as part of the TSMAD S-101 test plan strategy.

5.1H Comments on the status of S-57, scope of S-58 and the authority between S-57 and S-58

Docs: HSSC5-05.1Ha [Comments by Finland on the status of S-57, scope of S-58 and the authority between S-57 and S-58 \(Finland\)](#)
HSSC5-05.1Hb [Response to Finland's comments on S-58 \(TSMAD Chair\)](#)

Finland presented its comments (see [FI presentation](#)), requesting clarification on the status of S-57 and its Supplements. Finland noted that, although S-57 is officially “frozen”, several Supplements which introduced substantial improvements to the use of S-57 had been implemented. Finland noted that the original scope of S-58 was to be a guidance document for producers of ENC when developing their validation tools but Supplement 3 now contains validation checks that are to be used to verify that an ENC meets the requirements laid out in this specification. Finland commented that the draft edition 5.0.0 of S-58 wrongfully detects critical errors in ENC conformant to S-57. The issue was referred to a drafting group (TSMAD Chair, Finland) which adjusted the classification of errors in the draft edition of S-58 and reported back to the Committee.

The Chair confirmed that S-57 has authority over S-58 and invited the Committee to endorse the draft edition of S-58 as amended by the drafting group, subject to a final review by TSMAD at its next meeting and to defining an implementation date, noting that ENC producers would need some time to adjust their validation tools to the new edition. The Chair invited the IHB to clarify the applicability of S-57 supplement documents in the list of standards that are applicable to ECDIS on the IHO web site.

Outcome:

- The Committee endorsed the draft edition 5.0.0 of S-58 - *Recommended ENC Validation Checks* including the minor amendments proposed by the drafting group – subject also to the TSMAD 27 review - and invited the IHB to circulate the document to Member States for approval with an implementation date.

- **Action HSSC5/33:** TSMAD to finalize the draft edition 5.0.0 of S-58 at TSMAD27, in accordance with the guidance provided at HSSC5.

- **Action HSSC5/34:** IHB to seek, by IHO circular letter, Member States approval of the draft edition 5.0.0 of S-58, together with a deadline for its implementation.

- **Action HSSC5/35:** IHB to include a note in the list of standards that are applicable to ECDIS on the IHO web site, drawing attention to the applicability of S-57 supplement documents.

5.1I S-100 Maritime Boundary Exchange Product Specification

Doc: HSSC5-05.1I [S-100 Maritime Boundary Exchange Product Specification \(Australia\)](#)

Australia introduced the report on behalf of Geosciences Australia (see [AU presentation](#)) noting that the Product Specification was developed in response to a requirement from the UN Division for Ocean Affairs and the Law of the Sea (DOALOS) that a standard be developed for submitting digital datasets instead of voluminous paper files.

The ABLOS Vice-Chair proposed to change the name to “Maritime Limits and Boundaries Product Specification” which was agreed. In response to an enquiry from Netherlands, Australia indicated

that Geosciences Australia is a government body. The IHB noted that the maintainer of the standard would need to be listed as “Australia”.

Outcome:

- The Committee noted the report and endorsed the Maritime Limits and Boundaries Product Specification as an IHO Product Specification based on S-100.
- The Committee agreed to Geoscience Australia being responsible for the maintenance of the Product Specification.
- **Action HSSC5/36:** Australia to request Geoscience Australia to change the product specification name from “Maritime Boundary Exchange Product Specification” to “Maritime Limits and Boundaries Product Specification” (IHO S-121).

5.1J S-100 Product Specification for Navigational Warnings

Doc: HSSC5-INF6 [IRCC WNWNS and S-100 Product Specification for Navigational Warnings](#)
(France)

France reported that as e-navigation is progressing it has become evident that there will be a need for a digital exchange format for Maritime Safety Information (MSI), compliant with S-100. France proposed that an HSSC WG should be tasked to develop a product specification for navigational warnings.

TSMAD Chair noted that TSMAD would be prepared to provide advice as required under its liaison work item.

USA informed the Committee that they are considering the development of a product specification for sub surface navigation and invited interested parties wanting to collaborate on this to contact them. The intention is to submit a proposal for a new work item to HSSC-6.

Outcome:

- The Committee noted the report, supported the proposal to develop an S-100 product specification for navigational warnings and noted that WNWNS-SC should liaise with TSMAD and later with the new S-100 WG.
- The Committee noted that USA were considering the development of a product specification for sub surface navigation and invited interested parties wanting to collaborate on this to contact USA.
- **Action HSSC5/37:** WNWNS-SC is invited to liaise with TSMAD to develop an S-100 Product Specification for Navigational Warnings (IHO S-124).
- **Action HSSC5/38:** Parties interested in the development of a product specification for sub surface navigation are invited to contact the USA.

5.2 **Data Protection Scheme Working Group (DPSWG)**

Doc: HSSC5-05.2A rev1 [Report and Recommendations of DPSWG](#) (DPSWG Chair)

The DPSWG Chair presented the report and recommendations of the working group (see [DPSWG presentation](#)). He noted that there were currently 238¹ OEMs registered in members of the Data

¹ Post-meeting note: this number includes 10 OEMs which have been revoked. 41 data servers were also registered in the scheme at the date of HSSC-5.

Protection Scheme. He reported that the deadline for the transition to S-63 edition 1.1 (January 2014) should be met. A test data set to identify the software edition will be posted on the IHO website for use by data servers.

The DPSWG Chair reported also that the new annex of S-63, which is being developed to support the new edition of IEC 61174, should make it easier to check if ENC's are up to date.

The DPSWG Chair indicated that a draft new scheme is being worked on to support S-100 products. This will see data integrity mechanisms being separate from data protection and distribution.

CIRM noted that industry has played an active part in the WG and reported that they are satisfied with the progress of the WG. CIRM noted that checking the update status of ENC is addressing some of the mariners' frustrations.

In response to an enquiry from the Chair about the timeline for the new edition, the DPSWG Chair indicated that the new edition will have to be produced to accommodate not only S-101 but also all S-10X product specifications. The new edition will not be compatible with S-57.

The IHO President reminded the Committee that when S-63 Ed 1.0 is withdrawn it is quite likely that there will probably be some users that are not able to import 1.1 data. Data servers will place the blame on the IHO and they will be complaining to the IHB. The lesson is that when proposing changes to standards in force, they need to be carefully considered, planned and advertised.

The IHB reminded the Committee that there had been a change to the IHO root level Scheme Administrator key as of 31 August, and that no incident linked to the changeover had been reported.

Outcome:

- The Committee noted the report of the DPSWG, endorsed the continued activity of the working group and approved the work plan at Annex B of the report.
- **Action HSSC5/39:** IHB, in liaison with the DPSWG Chair, to consider the need for informing mariners about the transition to S-63 Ed 1.1 and take action as appropriate.

5.3 Digital Information Portrayal Working Group (DIPWG)

Docs: HSSC5-05.3A [Report and Recommendations of DIPWG \(DIPWG Chair\)](#)
HSSC5-05.3B rev1 [S-52 Presentation Library Edition 4.0.0 \(DIPWG Chair\)](#)
[Draft edition 6.1.0 of S-52](#)
[Draft edition 4.0.0 of S-52 Annex A](#)
HSSC5-INF3 [New Paper Chart and ECDIS Chart 1 \(USA\)](#)

The DIPWG Chair presented the report and recommendations of the working group (see [DIPWG presentation](#)). He noted that an extensive revision of the Presentation Library had taken place under the leadership of the DIPWG Vice-Chair. Significant progress had been made in finalizing the S-100 Portrayal Model and in developing an S-100 Portrayal Catalogue Builder tool. Although the S-100 Portrayal Model is essentially complete, the narrative portrayal sections of S-100 and S-101 are still being developed.

DIPWG had released one chart presentation bulletin, S-52-CPB-No 10, "Portrayal of virtual AIS aids to navigation".

The Chair acknowledged the production of the new USA chart 1 which combines paper chart and ECDIS symbology, noting the long standing request for this type of document. The CSPCWG Chair noted concern that maintaining the publication as a supplementary document to S-4 would be a

significant additional endeavour. He proposed to discuss the issue at the next CSPCWG meeting, and indicated that adopting the document as a standard at this stage is premature. The Chair noted that the restructuring of the working groups would facilitate the consideration of such an issue.

USA confirmed that USA chart 1 is a national document and invited Member States to use the document as a basis for their own internal requirements and asked them to participate in the document maintenance as a collaborative effort. Denmark indicated that they were using the document for internal purposes and were interested in contributing. UK indicated that they had preferred the option of a separate document for ECDIS symbology (NP5012). The TSMAD Chair noted the possibility to automate the production from the GI Registry.

The Chair noted the significant amount of work and synchronization that had taken place in developing the new editions of S-52 and its Presentation Library. He acknowledged the input from industry and the UKHO. CIRM indicated that they were very pleased with the level of collaboration between Member States and industry.

Noting the requirement to synchronize the work on S-52 and IEC 61174, the Committee agreed to consider the endorsement of S-52 by correspondence.

Outcome:

- The Committee noted the reports of the DIPWG, endorsed the continued activity of the working group and approved its work plan, subject to its adjustment to the HSSC consolidated work program.
- The Committee commended the work undertaken on the USA chart 1.
- The Committee acknowledged the dedicated work of the members of DIPWG, especially those industry partners who worked on developing the S-100 portrayal model and a new edition of the IHO Presentation Library (S-52 Annex A).
- The Committee approved a familiarization copy of the draft edition 6.1.0 of S-52 - *Specifications for Chart Content and Display Aspects of ECDIS* and of the draft edition 4.0.0 of the IHO Presentation Library (S-52 Annex A) to be placed on the IHO web site and then circulated for approval by HSSC letter followed by Members States approval by IHO circular letter.
- **Action HSSC5/40:** DIPWG Chair to provide the IHB with clean copies of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), for posting on the IHO website as a familiarization version.
- **Action HSSC5/41:** IHB to seek HSSC approval of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), by correspondence through HSSC circular letter.
- **Action HSSC5/42:** IHB to seek Member States approval of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), by IHO circular letter before end of October 2014 (in line with the publication of the new edition of IEC 61174).

5.4 Standardization of Nautical Publications WG (SNPWG)

Doc: HSSC5-05.4A [*Report and Recommendations of SNPWG \(SNPWG Chair\)*](#)

The SNPWG Chair presented the report and recommendations of the working group (see [SNPWG presentation](#)).

Sweden and USA commended the SNPWG for improving its work plan. Sweden proposed that the SNPWG considers including timelines in the work plan. USA proposed that the work plan should make provision for handheld tablet devices.

The Chair noted the lack of standards on the information contents. He enquired if the completion of the Marine Protected Area (MPA) Product Specification is dependent on the completion of the GML schema, and if so, when the GML schema will be available. The TSMAD Chair stated that a draft version of the GML schema should be available after the next TSMAD meeting.

CIRM noted that industry is waiting for the Radio Services Product Specification to be completed and intends to make available the tools for creating these products.

In response to an enquiry from Netherlands, France confirmed that the proposal to develop an MSI Product Specification complements the SNPWG work on the Navigational Services Product Specification.

Outcome:

- The Committee noted the report and endorsed the continued activity of the SNPWG and approved the Work Plan at Annex B to the report, subject to its adjustment to the HSSC consolidated work program.

- The Committee agreed the proposed amendments to the current terms of reference of SNPWG, as in HSSC5-05.4A.

- **Action HSSC5/43:** IHB to amend the terms of reference of SNPWG as agreed by the Committee.

5.5 Chart Standardization and Paper Chart Working Group (CSPCWG)

<i>Docs: HSSC5-05.5A</i>	<i>Report and Recommendations of CSPCWG (CSPCWG Chair)</i>
<i>HSSC5-05.5B</i>	<i>CSPCWG – Proposed Change of Name (CSPCWG Chair)</i>
<i>HSSC5-05.5C</i>	<i>Strengthening the requirement to construct paper charts on WGS84 (CSPCWG Chair)</i>
<i>HSSC5-INF7</i>	<i>Future demand for Paper Nautical Charts (Australia)</i>

The CSPCWG Chair presented the report and recommendations of the working group (see [CSPCWG presentation](#)). He noted that the WG had released Edition 4.4.0 of S-4 in September. Outstanding issues to be resolved include the definitions for altitude, elevation, and height in consultation of HDWG; data quality indicators for chart users and standardization of horizontal reference datums.

The Chair noted that the full revision of S-4 is a cornerstone to be celebrated next year and that the future maintenance of S-4 will be looked after under the new structure.

Norway commended the impressive amount of work carried out by the WG and questioned whether paper charts could be produced from ENCs in order to streamline the production processes. This raises the issue of the place for paper in the future and a number of questions are rapidly emerging on how to present information to the mariner. The IHO President suggested that investigating other ways to display cartographic information could be an area for further cooperation with the International Cartographic Association.

The CSPCWG Chair noted that one item of the WG work plan deals with initiating consideration of the future of the paper chart.

The Chair invited the Committee to note the INF paper submitted by Australia (HSSC5-INF7). He stressed the issue of how much resource should be devoted to paper chart production and the impact

of producing paper charts and ENC's in parallel versus deriving paper charts from ENC's. He recommended that the issue be revisited next year. Australia offered to report on paper charts produced from ENC's.

USA reported good progress in developing the regional charting scheme in the MACHC region and volunteered to participate in the development of S-11 Part A.

The CSPCWG had proposed a new name of "Nautical Cartography Working Group" (HSSC5-05.5B refers) however, considering the separate discussion on restructuring the working groups of HSSC, the Chair deferred any decision on renaming the CSPCWG and revising its terms of reference.

The CSPCWG Chair presented the report on strengthening the requirements to construct paper charts on WGS-84 (see [CSPCWG presentation](#)). The Committee confirmed the relevant principles. The IHB noted that the new ISO project on reference systems could lead to the adoption of a new generic acronym for geodetic reference systems compatible with the International Terrestrial Reference Frame.

Outcome:

- The Committee noted the reports of the CSPCWG and endorsed the continued activity of the working group and approved its work plan.
- **Action HSSC5/44:** Australia to provide feedback to HSSC-6 on their experience with producing paper charts from ENC's.

5.6 Data Quality Working Group (DQWG)

*Docs: HSSC5-05.6A [Report and Recommendations of DQWG \(DQWG Chair\)](#)
HSSC5-INF4 [Interface with IMO/HTW \(formerly STW\) on data quality issues \(IHB\)](#)*

The DQWG Chair presented the report and the recommendations of the working group (see [DQWG presentation](#)). He noted the work in progress with the University of Southern Mississippi on determining an optimum method for depicting data quality of charted data. The DQWG Chair mentioned also the establishment of a sub working group (HICUP - Hierarchical Indicator of Composite Uncertainty Propagation) to investigate how individual data quality indicators can be combined to form the single, composite, indicator which could be used to drive a colour wash quality overlay.

The TSMAD Chair commended the work carried out by the group. He noted that the current CATZOC is not well understood and welcomed the opportunity to test new quality indicators including the portrayal of dynamic depth quality information.

The Chair noted and welcomed the progress in liaising with academia. He asked whether there was any discussion about how to categorise an ENC as good or poor. The DQWG Chair noted that the assessment is largely dependent on the type of vessel using the ENC, and it is more a case of whether an ENC is "fit for use."

Canada noted that quality issues need to be included within the training courses for mariners.

Singapore reported that the work of the DQWG demonstrates clearly the need to move to S-100 and the importance of including dynamic tides in ECDIS. Singapore indicated that the "Concept Study on Real time Underkeel Clearance Monitoring for the Malacca and Singapore Straits" under Marine Electronic Highway (MEH) might provide a test bed for new ENC data quality indicators. Singapore suggested including the project as a test case in the work plans of the DQWG (and TWLWG - see

section 5.8 below). CIRM reported that industry is willing to support the consideration of dynamic tide quality issues and the test that could be carried out in connexion with the Malacca and Singapore Straits MEH.

The Chair confirmed that this work item requires to be strengthened. The CSPCWG Chair emphasized the need to conduct trials and assess the impact of having green/amber/red ENC's for the users and for maintenance procedures. The TSMAD Chair noted the impact on how HO's process hydrographic data.

The Chair noted a change of paradigm: positioning is no longer an issue with GNSS and mariners know where they are. What is required now is to improve the awareness of the environment (how much water under the keel, etc.).

The IHB presented the report on the interface with the IMO Sub-Committee on Human Element, Training and Watchkeeping (HTW) (see [IHB presentation](#)), noting that it had been produced in response to action HSSC 4/31 (IHB to investigate how to interface with the IMO Sub-Committee on Standards of Training and Watchkeeping (STW), now the Sub-Committee on Human Element, Training and Watchkeeping (HTW), for improving training on the quality aspects of the practical use of ENC's).

The DQWG Chair supported the recommendations of the report. Canada suggested that the recommendations be reflected as work items in the work plan of the DQWG, which was agreed.

Outcome:

- The Committee noted the reports and endorsed the continued activity of the DQWG and approved its work plan with additional guidance.

- **Action HSSC5/45:** DQWG Chair to include in the DQWG work plan the recommendations contained in HSSC5-INF4 (interface with IMO/HTW).

- **Action HSSC5/46:** DQWG Chair to include a new work item in the DQWG work plan to expand data quality into dynamic tides / water levels.

- **Action HSSC5/47:** DQWG Chair to include a new work item in the DQWG work plan to consider using the Malacca and Singapore Straits Marine Electronic Highways (MEH) project, as a test case.

5.7 Marine Spatial Data Infrastructure Working Group (MSDIWG)

Docs: *HSSC5-05.7A rev2* [Report and Recommendations of MSDIWG \(MSDIWG Chair\)](#)
HSSC5-05.7B [IHO Participation in the United Nations Committee of Experts on Global Geospatial Information Management \(UN-GGIM\) \(IHB\)](#)

The MSDIWG Chair presented the report and the recommendations of the working group (see [MSDIWG presentation](#)). He noted that a new work plan (presented in the report) had been established in order to cope with new challenges.

UK noted that the issues to be addressed by the MSDIWG look more educational than technical and questioned whether the working group should sit under HSSC rather than IRCC.

Chile expressed concerns about the proposed amendments to the TOR as they appear to expand the scope of the working group and questioned the role of the working group in relation with national activities.

Canada shared the concerns of Chile and questioned also whether the working group should have a coordination role or a technical role.

The Chair noted that there appears to be many national and regional activities and therefore did not see how the working group could provide any direction to all these initiatives. However, he would welcome that the working group identifies the lessons to be learned from these initiatives. The MSDIWG Vice-Chair confirmed that the working group has no intention to coordinate national projects, but rather aims to learning from the similarities and best case practices with a view to applying them to future MSDI work.

The TSMAD Chair offered the assistance of TSMAD to implement the S-100 content model, but recommended that there might be a need to investigate if there are any divergences with other content models such as the INSPIRE model.

Australia questioned also whether MSDI should be placed under HSSC as most of the work items seem to deal with capacity building or regional coordination issues.

A drafting group (Chair, Secretary, MSDIWG Chair and Vice-Chair) revised the proposed TOR and work plan and reported back to the Committee which reviewed the outcomes (see Annexes H and I).

The IHB presented the report on IHO participation in the United Nations initiative on Global Geospatial Information Management (UN-GGIM) (see [IHB presentation](#)). The Committee endorsed the recommendation that the IHB continues to contribute to the UN-GGIM initiative on behalf of the IHO and invited the MSDIWG to consider the impact of the initiative on its work plan.

Outcome:

- The Committee noted the report of the MSDIWG and approved the revised TOR (as amended at the meeting – see Annex H), and the revised work plan (as amended at the meeting – see Annex I).
- The Committee noted the report on UN-GGIM and endorsed its recommendations.
- **Action HSSC5/48:** IHB to amend the terms of reference of MSDIWG as agreed by the Committee.
- **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.

5.8 Tidal and Water Level Working Group (TWLWG)

Doc: HSSC5-05.8A [Report and Recommendations of TWLWG](#) (TWLWG Chair)

UK presented the report and the recommendations of the working group, on behalf of the TWLWG Chair (see [TWLWG presentation](#)). The working group is considering how to apply tidal models to develop navigational surfaces. Issues that may need further discussion include appropriate metadata for data quality, grid resolution, source bathymetry, tidal regime, portrayal, and management of alarms in the ECDIS.

The TSMAD Chair noted that TSMAD has done some research in the area of generating dynamic water levels and navigational surfaces in ECDIS and indicated that this work appears to fit in with S-102. Noting the progress made with facilitating the developing of other product specifications, he offered the assistance of TSMAD to develop a tidal product specification.

IALA indicated its interest in contributing to this work item.

Noting that most of the milestones of the proposed work plan were set in 2013, the Committee invited the working group to revise its work plan.

Outcome:

- The Committee noted the report of the TWLWG and approved the continuation of its work under its current terms of reference.
- The Committee did not endorse the work plan at Annex G of the report and invited the working group to revise it (see paragraph 10).
- The Committee approved the draft IHO Resolution 3/1919 as amended.
- The Committee approved the minor amendment to IHO Resolution 2/1977.
- The Committee approved the draft revised text for IHO Resolution 27/1919, as amended.
- The Committee approved the minor amendment to IHO Resolution 1/1977, as amended.
- **Action HSSC5/50:** IHB to seek Member States approval of the revisions of IHO Resolutions 3/1919, 27/1919, 1/1977 and 2/1977 as amended, by IHO circular letter.
- **Action HSSC5/51:** TSMAD to assist the TWLWG in the development of a tidal product specification for navigational surface and tidal data transfer that could be used for generating dynamic water levels and navigational surfaces in ECDIS.
- **Action HSSC5/52:** TWLWG to take note of and liaise with the Malacca and Singapore Straits Marine Electronic Highways (MEH) project, regarding the under keel clearance monitoring system.

5.9 Hydrographic Dictionary Working Group (HDWG)

Doc: HSSC5-05.9A rev2 [*Report and Recommendations of the HDWG \(HDWG Chair\)*](#)

The IHB presented the report and recommendations of the working group on behalf of the Chair of the HDWG (see [HDWG presentation](#)). The impact on HDWG work of the implementation of S-100 was noted. The shortage of multilingual expert-contributors with core marine GIS knowledge was also noted. No consensus had been reached yet on the revision of the definitions of altitude, elevation and height. A face-to-face meeting during 2014 would facilitate progress of outstanding work items.

Turkey supported the proposal of the working group to not include the terms “Coastal Area, Coastal Waters and Coastal Zone” in the Hydrographic Dictionary. Greece expressed the opposite view that the terms should be included in the Hydrographic Dictionary. The Chair noted that the Committee had no reason to overrule the decision of the working group.

Outcome:

- The Committee noted the report of the HDWG, approved the continuation of the HDWG work under its current terms of reference, and endorsed the work plan at Annex B of the report.
- The Committee approved the proposed new and revised definitions at Annex C of the report.
- The Committee confirmed the need for a face to face meeting and invited the WG to act accordingly.
- **Action HSSC5/53:** IHB to seek Member States approval of the new definitions contained in Annex C of the HDWG report, by IHO circular letter.

5.10 Surface Current Working Group (SCWG)

Doc: HSSC5-05.10A rev1 [Report and Recommendations of the SCWG](#) (SCWG Chair)

The SCWG Chair presented the report and the recommendation of the working group via tele-conference (see [SCWG presentation](#)).

Netherlands questioned the proposed inclusion of a reference to ENCs and ECDIS in the objectives of the working group as this would narrow the scope of the work.

Outcome:

- The Committee noted the report of the SCWG and endorsed the continuation of its work.
- The Committee approved the proposed amendments to the terms of reference and rules of procedure contained at Annex B of the report (excepting changes to 1. Objectives) and endorsed the draft work plan at Annex A of the report.
- **Action HSSC5/54:** IHB to amend the terms of reference of SCWG as agreed by the Committee.

6. INTER-ORGANIZATIONAL BODIES

6.1 Advisory Board on the Law of the Sea (ABLOS)

Doc: HSSC5-06.1A rev1 [Status Report on ABLOS activities](#) (ABLOS Chair)

The ABLOS Vice-Chair presented the report and the recommendations of the advisory board (see [ABLOS presentation](#)). He invited the Committee to approve some amendments to the terms of reference and to endorse the draft edition 5.0.0 of the TALOS Manual (C-51). He noted that as a result of the EIHC taking place next year, the next ABLOS conference is planned in 2015.

Outcome:

- The Committee noted the report of ABLOS and endorsed the revised TOR at Annex C and the continuation of the ABLOS work.
- The Committee endorsed the draft edition 5.0.0 of the TALOS Manual C-51 and invited the IHB to circulate the publication to Member States for approval.
- The Committee endorsed the draft work program at Annex B of the report.
- **Action HSSC5/55:** IHB to seek Member States approval of the draft edition 5.0.0 of the TALOS Manual (C-51), by IHO circular letter.
- **Action HSSC5/56:** IHB to invite the Chair of ABLOS to seek the approval of the revised terms of reference of ABLOS by IAG.
- **Action HSSC5/57:** IHB to amend the terms of reference of ABLOS when approved by IAG.

7. DECISIONS OF OTHER BODIES AFFECTING HSSC

7.1 E-navigation development

7.1A E-navigation development affecting HSSC

Doc: HSSC5-07.1A [E-navigation development affecting HSSC \(IHB\)](#)

The IHB presented the report on e-navigation development affecting HSSC (see [IHB presentation](#)).

Canada supported strengthening the liaison between HSSC and the IMO Correspondence Group on e-navigation. However, the Committee agreed to continue relying on the current processes considering that the timeline of the Correspondence Group would not accommodate an intermediate IHO coordination layer.

USA proposed that some of the text in the e-navigation plan should be incorporated in the motivation for the restructuring of the HSSC working groups.

The IHO President noted the lack of connexion between the IHO and the national processes at IMO and invited Member States to ensure that their national delegates at IMO are fully aware of IHO issues.

The Committee agreed to act as the focal point for the IALA e-NAV Committee. IALA welcomed the improvement of the coordination with the IHO.

Outcome:

- The Committee noted the report on e-navigation development affecting HSSC.
- The Committee agreed that IHB will continue to represent the views of the organization in the IMO Correspondence Group on e-navigation.

7.1B Restructuring of the IHO GI Registry

Doc: HSSC5-07.1B [E-navigation developments – Restructuring of the IHO GI Registry \(Germany\)](#)

Germany presented the report on considering a Marine Information Registry which would extend the current Registry structure (see [DE presentation](#)). The Chair noted that, at this stage, it is just a concept study of the extension of the Registry to the whole maritime domain.

The TSMAD Chair noted that the concept does not appear to fit into the ISO 19135 registry structure, and stressed the need to maintain the concept of domains and domain owners.

IALA cautioned that changing the Registry would have a big impact for IALA and IMO which have adopted the IHO Registry.

The IHO President indicated that although this is an academic exercise it was worth noting that the IHO would not have the resources to implement such a registry.

Outcome:

- The Committee noted the report and decided not to take any action.

7.2 IMO activities affecting HSSC

Docs: HSSC5-07.2A [IMO activities affecting HSSC \(IHB\)](#)
HSSC5-07.2B [Revision of IHO Publication S-66: Facts about Electronic Charts and Carriage Requirements \(IHB\)](#)

The IHB presented the reports on IMO activities affecting HSSC (see [IHB presentation](#)) and on the revision of IHO Publication S-66 – *Facts about Electronic Charts and Carriage Requirements* (see [IHB presentation](#)).

Referring to the issue of virtual Aids to Navigation (AtoNs), the IHB enquired if any Member State had the intention to deploy them. Denmark indicated that they were considering the option.

The Committee agreed that the revision of S-66 should be included in the HSSC work plan for 2014-2015 and invited Member States to propose to the IHB, directly or through Primar and IC-ENC, experts who could contribute to the task on a voluntary or contractual basis. France indicated that they are willing to participate in the revision of S-66.

Outcome:

- The Committee noted the reports on IMO activities affecting HSSC.
- The Committee agreed that the preparation of a new edition of S-66 should be included in the 2014-2015 HSSC work plan and tasked the IHB to invite Member States to propose experts who could contribute to the task on a voluntary or contractual basis.
- **Action HSSC5/58:** IHB to invite Member States to propose directly or through Primar / IC-ENC, experts to contribute to the revision of S-66.
- **Action HSSC5-59:** IHB to include the preparation of a new edition of S-66 in the 2014-2015 HSSC work plan.

7.3 IEC activities affecting HSSC

Doc: HSSC5-07.3A [IEC Activities affecting HSSC \(IEC\)](#)

IEC presented the report on IEC activities affecting HSSC and considered three main items (see [IEC presentation](#)):

a) *IEC 61174*

The Committee had addressed the synchronization of the preparation of the new editions of IEC 61174, S-52 and S-64 under agenda item 5.1A (see section 5.1A above). The IHB noted that the implementation of the new editions of ECDIS standards should not only be synchronized between IHO, IEC and CIRM but also with IMO. It was agreed to prepare a joint submission to NCSR 1 on this issue.

b) *IEC 61162 interface standards and S-100*

The Committee invited IEC to liaise with TSMAD on this issue until the new S-100 Working Group is established.

c) *Software quality assessment*

Referring to the suggestion that HSSC considers Service Lifecycle Management (SLM) when developing new standards, the Chair noted that this is a very important issue but was of the opinion that this would be difficult to implement in the work plans. RTCA mentioned that work had already been done on this issue and reported to HSSC. The TSMAD Chair suggested that this should be

considered for inclusion in the S-100 Master Plan and in the e-navigation implementation plan. The IHB supported this suggestion and sought clarification on who would coordinate the initiative.

It was agreed that CIRM will coordinate the initiative, to which the IHB will contribute on behalf of HSSC for charts and chart functionalities.

Outcome:

- The Committee noted the IEC report and welcomed the close cooperation between IHO and IEC/TC80.
- The Committee invited IEC to liaise with TSMAD on S-100 issues until the new S-100 working group is established.
- **Action HSSC5/60:** IHB to prepare with IEC and CIRM a joint submission to NCSR 1 on the implementation of the new editions of ECDIS standards and invite MS to seek the support of their national maritime administration.
- **Action HSSC5/61:** IHB to contribute to a joint CIRM-IEC-IHO submission to NCSR 1 on Service Lifecycle Management (SLM) and invite MS to seek the support of their national maritime administration.
- **Action HSSC5/62:** TSMAD to consider the impact of introducing Service Lifecycle Management (SLM) in the S-101 Roadmap and S-100 Master Plan.

7.4 IEHG activities affecting HSSC

Doc: HSSC5-07.4A [Status Report on Inland ENC Development and Standardization \(IEHG\)](#)

A representative of the China Water Borne Transport Research Institute presented the report on behalf of the Chair of IEHG (see [IEHG presentation](#)). He indicated that the IEHG intends to use the S-100 Feature Catalogue Builder and begin work on the alignment of Inland ENCs with the draft IHO S-101 in 2014.

The TSMAD Chair indicated that TSMAD would be keen to test IENC within the S-101 Roadmap.

CIRM commended the IEHG forum arrangements as an efficient way to handle the revision of standards.

Outcome:

- The Committee noted the IEHG report and welcomed the contribution of IEHG to the development of S-100 based products.

7.5 CIRM activities affecting HSSC

Doc: HSSC5-07.5A [CIRM Activities affecting HSSC \(CIRM\)](#)

CIRM reported on its involvement in the development of the standards needed to enable safe and efficient navigation (see [CIRM presentation](#)). CIRM stressed the importance of good relations with other organizations, like ICS, BIMCO, IMPA, IALA and IHO, and noted that its new working structure should contribute to increasing collaboration.

The IHB noted the very good working relations with the CIRM.

Netherlands suggested that the important topics under item 7 should be considered earlier in the agenda at future meetings.

Outcome:

- The Committee noted the CIRM report and welcomed the close cooperation between IHO and CIRM.

7.6 IALA activities affecting HSSC

Doc: HSSC5-07.6A [IALA Activities affecting HSSC \(IALA\)](#)

IALA reported on its activities in relation with S-100 development (see [IALA presentation](#)). IALA indicated that a submission on including data streaming in S-100 would be presented to TSMAD.

Outcome:

- The Committee noted the IALA report and welcomed the close cooperation between IHO and IALA as well as the development of S-100 based Product Specifications by IALA.

7.7 OGP activities affecting HSSC

The IHB referred to the oral presentation of the TSMAD Chair under agenda item 5.1A. The IHB informed the Committee that the OGC had acknowledged the IHO response to the request for information on oil spill response which had been reported to Member States in IHO CL 52/2013.

Outcome:

- The Committee noted the information provided in the presentation of the TSMAD Chair and welcomed the liaison established between TSMAD and the OGP Geomatics Committee.

7.8 IRCC activities affecting HSSC

The IHB referred to the minutes of IRCC-5 posted on the IHO website and indicated that there were no items of direct relevance to HSSC. The IHB mentioned the consideration by IRCC of satellite derived bathymetry and crowd-sourcing developments, noting that this could have an impact on S-44 in the future.

Outcome:

- The Committee noted the information provided by the IHB.

7.9 JCOMM activities affecting HSSC

Doc: HSSC5-07.9A [Development of the S-100 based Ice Information Product \(Germany\)](#)

Germany presented the report (see [DE presentation](#)). In response to an enquiry from the TSMAD Chair on the availability of appropriate display systems, Germany indicated that the service provider will offer a free viewer.

The IHB reported on action HSSC4/10 (IHB to approach the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) to elaborate a joint strategy to develop S-100 based multi-disciplinary products in the context of the implementation of the e-navigation strategy). The IHB informed the Committee that an S-100 overview had been presented at the 4th meeting of the Expert Team on Maritime Safety Services (ETMSS 4 – Tokyo 27 Feb – 2 March 2013) and that a

step-by-step approach focused on specific product specifications was the most appropriate for the time being. The IHB recommended postponing the action until the next plenary meeting of JCOMM.

Outcome:

- The Committee agreed to postpone action HSSC4/10 until the 5th Session of JCOMM.

- **Action HSSC5/63:** IHB to prepare a submission to the 5th Session of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) on elaborating a joint strategy to develop S-100 based multi-disciplinary products in the context of the implementation of the e-navigation strategy.

7.10 ISO activities affecting HSSC

Doc: HSSC5-07.10A [ISO Standards Development Proposals of Relevance to HSSC \(IHB\)](#)

The IHB presented the report.

Outcome:

- The Committee noted the report on ISO activities affecting HSSC.

7.11 FIG activities affecting HSSC

The Committee welcomed the participation of a representative of FIG. The [FIG presentation](#) highlighted the activities of FIG Commission 4 – Hydrography.

The Chair recommended strengthening the cooperation with FIG.

Outcome:

- The Committee noted the report on FIG activities and welcomed closer cooperation with FIG/Commission 4.

8. REVIEW OF NEW DEVELOPMENTS AND OTHER INFORMATION PAPERS

Docs: HSSC5-INF1 rev1 [Status Report on IHO Publications on Standards and Specifications \(IHB\)](#)

HSSC5-INF7 [Future demand for Paper Nautical Charts \(Australia\)](#)

HSSC5-INF8 [Withdrawal of Raster Navigational Chart service \(Australia\)](#)

HSSC5-INF9 rev1 [National Report of the United States \(NOAA\) on Technical Matters \(USA\)](#)

HSSC5-INF10 [Environment Marine Information Overlays \(E-MIO\) for East Asia ENC_s \(EAHC\)](#)

The information papers were presented by the IHB, Australia, USA and the Republic of Korea, acting on behalf of the East Asia Hydrographic Commission (EAHC).

Outcome:

- The Committee noted the information papers submitted by the IHB, Australia, USA and Republic of Korea, on behalf of the EAHC.

- The Committee agreed to include an item in the work plan of each working group on:

- + reviewing the information in the “English – Next Edition” column of Appendix to Annex A of HSSC5-INF1 and considering whether any adjustment is needed regarding the next edition dates.
- + considering possible requirements and contributions for translation in French and/or Spanish.

9. LIAISON WITH EXTERNAL STAKEHOLDERS

Doc: HSSC5-INF5 [Format for future Stakeholders' Forum events](#) (IHB)

The IHB presented the report in response to action HSSC4/37 (IHB to reconsider the format for future Stakeholders' Forum events, to improve interest and interaction with stakeholders).

The Committee agreed that due to the proximity of the 5th Extraordinary International Hydrographic Conference (EIHC-5), it was not viable to consider combining a stakeholders' event with HSSC-6 in 2014.

Members were invited to provide their views on IHO or HO's participation in the events listed in Table 1 of HSSC5-INF5 when reviewing the draft minutes of the meeting.

Outcome:

- The Committee noted the report on liaison with stakeholders and agreed that there was no need to consider a stakeholders' meeting in conjunction with HSSC-6.

10. REVIEW AND ENDORSEMENT OF HSSC WORK PLAN AND LIST OF ACTIONS

Doc: HSSC5-10A rev1 [Draft HSSC Work Plan](#) (IHB)

The Committee reviewed the draft list of actions prepared by the IHB.

Outcome:

- The Committee reviewed the draft list of actions and agreed to finalize and approve the HSSC work plan and the list of actions by correspondence.

11. REVIEW OF HSSC INPUT TO EIHC-5

The Committee considered the items of interest for EIHC-5.

Outcome:

- The Committee agreed to report to EIHC-5 on the following items:
 - + Relations with IMO (including the e-navigation strategy implementation plan);
 - + S-100 issues;
 - + Re-structuring of HSSC.

12. DATE & LOCATION OF THE NEXT MEETINGS

The Committee accepted the offer of Chile to host the next meeting (HSSC-6) in Valparaiso from 10 to 14 November 2014.

The Chair invited offers to host the HSSC-7 and HSSC-8 meetings to be held in early November 2015 and 2016 respectively. A fall-back venue would be the IHB, Monaco.

Outcome:

- The Committee welcomed the offer of Chile to host the next meeting (HSSC-6) in Valparaiso – Chile, from 10 to 14 November 2014.
- The Committee invited Member States to propose venues for HSSC-7 and HSSC-8 noting that the fall-back venue would be the IHB, Monaco.
- **Action HSSC5/64:** Member States are invited to propose venues for the HSSC-7 and HSSC-8 meetings to be held in early November 2015 and 2016 respectively.

13. CLOSURE OF THE MEETING

The IHO President underlined the quality of the meeting and acknowledged the submission of comments papers as valuable inputs for the discussions. He considered that the IHO Technical Programme had reached a tipping point.

At the invitation of the IHO President, the Committee congratulated Rear Admiral Zaaim Hasan (Malaysia), Mr Alexis Hadjiantoniou (Greece) and Captain Shepard Smith (USA) for their recent promotions.

At the invitation of the IHO President, the Committee acknowledged the contributions of Captain Henryk Nitner (Poland), Mr Juha Korhonen (Finland) and Mr Michel Huet (IHB) who were attending their last HSSC meeting before retirement.

Post meeting note: This was also the case for Mr Peter Jones (UK), whose contribution was acknowledged by correspondence following the meeting.

At the invitation of the Chair, the Committee warmly thanked China for the excellent arrangements for the meeting. The Chair also thanked all participants and observers for their valuable contribution to the meeting. He acknowledged the very constructive atmosphere of the meeting and wished the participants a safe return journey.

The meeting closed at 12:35 on 8 November 2013.

GLOSSARY OF ACRONYMS, TERMS AND ABBREVIATIONS

ABLOS	Advisory Board on the Law of the Sea
AIS	Automatic Identification System
AtoN	Aid to Navigation
BIMCO	Baltic and International Maritime Council
C-17	IHO Publication: <i>Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices</i>
CATZOC	Category of Zones of Confidence attribute (IHO/S-57)
CG	Correspondence Group
CIRM	Comité International Radio-Maritime
CL	Circular Letter
CPB	Chart Portrayal Bulletin
CSPCWG	Chart Standardization and Paper Chart Working Group
DCEG	Data Classification and Encoding Guide
DE	Germany
DIPWG	Digital Information Portrayal Working Group
DOALOS	Division for Ocean Affairs and the Law of the Sea (UN)
DPSWG	Data Protection Scheme Working Group
DQWG	Data Quality Working Group
E-MIO	Environment Marine Information Overlay
EAHC	East Asia Hydrographic Commission
ECDIS	Electronic Chart Display and Information System
EIHC	Extraordinary International Hydrographic Conference
e-NAV	e-navigation
ENC	Electronic Navigational Chart
ETMSS	Expert Team on Maritime Safety Services
FI	Finland
FIG	Fédération Internationale des Géomètres
FR	France
GGIM	Global Geospatial Information Management (UN)
GI	Geospatial Information
GML	Geography Markup Language
HDWG	Hydrographic Dictionary Working Group
HICUP	Hierarchical Indicator of Composite Uncertainty Propagation)
HO	Hydrographic Office
HSSC	Hydrographic Services and Standards Committee
HTW	Sub-Committee on Human Element, Training and Watchkeeping (IMO)
IAG	International Association of Geodesy
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IC-ENC	International Centre for ENCs
ICS	International Chamber of Shipping
IEC	International Electrotechnical Commission
IEHG	Inland ENC Harmonization Group
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
IHR	International Hydrographic Review
IMO	International Maritime Organization
IMPA	International Maritime Pilots' Association
INF	Information

INSPIRE	Infrastructure for Spatial Information in the European Community
IOC	Intergovernmental Oceanographic Commission
IRCC	Inter-Regional Coordination Committee
ISO	International Organization for Standardization
JCOMM	Joint Technical Commission for Oceanography and Marine Meteorology (WMO-IOC)
KHOA	Korea Hydrographic and Oceanographic Administration
MEH	Marine Electronic Highway
MPA	Marine Protected Area
MS	Member State
MSA	Maritime Safety Administration
MSDI	Marine Spatial Data Infrastructure
MSDIWG	Marine Spatial Data Infrastructure Working Group
MSI	Marine Safety Information
NCSR	Sub-Committee on Navigation, Communications and Search and Rescue (IMO)
NGIO	Non-Governmental International Organization
NOAA	National Oceanic and Atmospheric Administration
NP	Nautical Publication
NW	Navigational Warning
OGC	Open Geospatial Consortium
OGP	International Association of Oil & Gas Producers
OEM	Original Equipment Manufacturer
PresLib / PL	IHO Presentation Library for ECDIS
PI	Performance Indicator
PS	Product Specification
RENC	Regional ENC Coordinating Centre
RHC	Regional Hydrographic Commission
ROK	Republic of Korea
ROP	Rules of Procedure
RTCA	Initially known as “Radio Technical Commission for Aeronautics”
S-4	Chart Specifications of the IHO and Regulations for International (INT) Charts
S-11	Guidance for the Preparation and Maintenance of International Chart Schemes and Catalogue of International (INT) Charts
S-32	Hydrographic Dictionary
S-52	Specifications for Chart Content and Display Aspects of ECDIS
S-57	IHO Transfer Standard for Digital Hydrographic Data
S-58	Recommended ENC Validation Checks
S-63	IHO Data Protection Scheme
S-64	IHO Test Data Sets for ECDIS
S-66	Facts about Electronic Charts and Carriage Requirements
S-99	IHO Geospatial Information Registry – Structure, Organization and Management
S-100	Universal Hydrographic Data Model
S-xxx	Product Specification based on S-100 (<i>see Annex G</i>)
SC	Sub-Committee

SCWG	Surface Current Working Group
SDI	Spatial Data Infrastructure
SHOM	Service Hydrographique et Océanographique de la Marine (France)
SNPWG	Standardization of Nautical Publications Working Group
SOW	Statement of Work
STW	Sub-Committee on Standards of Training and Watchkeeping (IMO)
TALOS	Technical Aspects of the UN Convention on the Law of the Sea
TC80	Technical Committee on Maritime navigation and radiocommunication equipment and systems (IEC)
T&P	Temporary and Preliminary
TOR	Terms of Reference
TSMAD	Transfer Standard Maintenance and Applications Development Working Group
TWLWG	Tidal and Water Level Working Group
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
UN	United Nations
UOC	Use of the Object Catalogue for ENC (S-57 Appendix B1, Annex A)
USA	United States of America
WEND	Worldwide ENC Database
WG	Working Group
WGS	World Geodetic System
WMO	World Meteorological Organization
WP	Work Plan / Work Programme
WPI	Working level Performance Indicator
WWNWS	World-Wide Navigational Warning Service

**OPENING STATEMENT OF MR CHEN XIAO JUANG,
DEPUTY DIRECTOR GENERAL
SHANGHAI MARITIME SAFETY ADMINISTRATION**

Good morning
Distinguished guests
Ladies and Gentlemen:

The 5th Meeting of the Hydrographic Services and Standards Committee (HSSC) is opened today. Entrusted by Captain Chen Aiping, the director-general of China MSA, I extend my sincere congratulations to the meeting and warm welcome to all delegates on behalf of China MSA.

Chinese MSA attaches much importance to this meeting and chose Shanghai as the venue, which is a shipping centre with great international influence. Also we appreciate the support and trust from International Hydrographic Bureau and member states of the committee very much.

The Maritime Safety Administration of PRC is the maritime authority in China, responsible for safety supervision, organization of traffic at sea, prevention of pollution by ships, survey of vessels and installations at sea, and administration of navigation aids. Furthermore, China MSA has been attending IHO and EAHC (East Asia Hydrographic Commission) representing China. And it has been coordinating other concerning organizations at home to participate IHO and regional hydrographic survey affairs and thus to fulfil our international obligations.

Hydrographic survey is fundamental for ocean exploitation and shipping development. It is also an important part of the maritime administration. Hydrographic survey provides essential support and guarantee to marine transportation, port construction, and safety administration.

21st century is an era of the sea. It is our duty to protect marine environment and promote marine economy. Today we gathered here seeking common ground despite of the disparities. We are all making efforts to realize safe secure and efficient shipping on clean oceans. This is praiseworthy. The prosperity of hydrographic survey and the goal of our career can only be realized through our joint efforts.

I hope the meeting will be a complete success!
Ladies and gentlemen, thanks for your attention.

LIST OF DOCUMENTS

Document No	Document Title
HSSC5-01A rev2	List of Documents
HSSC5-01B rev4	List of Participants
HSSC5-01C	HSSC - List of Contacts
HSSC5-01D	Terms of Reference for HSSC and related Working Groups
HSSC5-02A rev5	Agenda and Timetable
HSSC5-03A	Minutes of the 4th HSSC Meeting
HSSC5-03B rev1	List of Actions from the 4th HSSC Meeting and Status
HSSC5-04.1A	Programme Performance Indicators for HSSC
HSSC5-04.2A	Review of the Structure of HSSC Working Groups
HSSC5-04.2B rev1	Creation of an S-100 Working Group
HSSC5-04.2C rev1	Optimizing HSSC Working Groups
HSSC5-04.2D	Review of the structure of HSSC Working Groups – Comments by FR
HSSC5-04.2E	Comments by Finland on re-structuring HSSC Working Groups
HSSC5-04.2F	CSPCWG Comments on Proposals for the Structure and Optimizing of HSSC Working Groups
HSSC5-04.3A	Procedures for the maintenance of S-57 and S-52
HSSC5-04.3B	Comments by Finland on the Maintenance procedures of S-57 and S-52
HSSC5-04.3C	Comments from DIPWG Chair on Procedures for Maintenance of S-57 and S-52
HSSC5-04.3D	Procedures for the maintenance of S-57 and S-52 – Final Draft
HSSC5-05.1A	Report and Recommendations of TSMAD
	Draft e4.0.0 of S-57 Appendix B.1 Annex A "Use of the Object

	<p style="text-align: center;">Catalogue"</p> <p style="text-align: center;">Clean Copy Copy with changes emphasized</p>
	Draft Supplement 3 to S-57 e3.1
	Draft e5.0.0 of S-58 "ENC Validation Checks" (Rev. 1)
	Draft e3.0.0 of S-64 "IHO Test Data Sets for ECDIS"
HSSC5-05.1B	S-101 Value Added Roadmap
HSSC5-05.1C	Master Plan for the development and implementation of S-100
HSSC5-05.1D	Regulatory process associated with the implementation of S-100 based products and services
HSSC5-05.1E	Proposal to formalize the identifiers for S-100 based product specifications
HSSC5-05.1F	Report of the S-101 Impact Study – FR views on the way ahead
HSSC5-05.1G rev1	Test Bed Projects in Support of S-101 Development and Implementation
HSSC5-05.1Ha	Comments by Finland on the status of S-57, scope of S-58 and the authority between S-57 and S-58
HSSC5-05.1Hb	Response to Finland's comments on S-58
HSSC5-05.1I	S-100 Maritime Boundary Exchange Product Specification
HSSC5-05.2A rev1	Report and Recommendations of DPSWG
HSSC5-05.3A	Report and Recommendations of DIPWG
HSSC5-05.3B rev1	S-52 Presentation Library Edition 4.0.0
	Draft edition 6.1.0 of S-52 "Specifications for Chart Content and Display Aspects of ECDIS" and Draft edition 4.0.0 of S-52 Annex A "IHO ECDIS Presentation Library"
HSSC5-05.4A	Report and Recommendations of SNPWG
HSSC5-05.5A	Report and Recommendations of CSPCWG
HSSC5-05.5B	CSPCWG – Proposed Change of Name
HSSC5-05.5C	Strengthening the requirement to construct paper charts on WGS84

HSSC5-05.6A	Report and Recommendations of DQWG
HSSC5-05.7A rev2	Report and Recommendations of MSDIWG
HSSC5-05.7B	IHO Participation in the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM)
HSSC5-05.8A	Report and Recommendations of TWLWG
HSSC5-05.9A rev2	Report and Recommendations of HDWG
HSSC5-05.10A rev1	Report and Recommendations of SCWG
HSSC5-06.1A rev1	Status Report on ABLOS activities
	Draft edition 5.0.0 of C-51 "Manual on Technical Aspects of the UN Convention on the Law of the Sea (TALOS)"
HSSC5-07.1A	E-navigation development affecting HSSC
HSSC5-07.1B	E-navigation developments - Restructuring of the IHO GI Registry
HSSC5-07.2A	IMO activities affecting HSSC
HSSC5-07.2B	Revision of IHO Publication S-66: Facts about Electronic Charts and Carriage Requirements
HSSC5-07.3A	IEC Activities affecting HSSC
HSSC5-07.4A	Status Report on Inland ENC Development and Standardization
HSSC5-07.5A	CIRM Activities affecting HSSC
HSSC5-07.6A	IALA Activities affecting HSSC
HSSC5-07.9A	Development of the S-100 based Ice Information Product
HSSC5-07.10A	ISO Standards Development Proposals of Relevance to HSSC
HSSC5-10A rev1	Draft HSSC Work Plan
	Information Papers
HSSC5-INF1 rev1	Status Report on IHO Publications on Standards, Specifications and Guidelines

HSSC5-INF2 rev3	Status of Temporary and Preliminary ENC Updates
HSSC5-INF3	New Paper Chart and ECDIS Chart 1
HSSC5-INF4	Interface with IMO/HTW (formerly STW) on data quality issues
HSSC5-INF5	Format for future Stakeholders' Forum events
HSSC5-INF6	IRCC WWNWS and S-100 Product Specification for Navigational Warnings (NW)
HSSC5-INF7	Future demand for Paper Nautical Charts
HSSC5-INF8	Withdrawal of Raster Navigational Chart service
HSSC5-INF9 rev1	National Report of the United States (NOAA) on Technical Matters
HSSC5-INF10	Environment Marine Information Overlays (E-MIO) for East Asia ENCs

LIST OF PARTICIPANTS

Note: In the table below, the head of delegation is the first listed for each MS or observer.

Member States	Name	Email
Australia	Mike PRINCE (HSSC Vice-Chair)	international.relations@hydro.gov.au mike.prince@defence.gov.au
Brazil	Carlos Augusto MEDEIROS DE ALBUQUERQUE Paulo PEREIRA OLIVEIRA MATOS	medeiros.albuquerque@dhn.mar.mil.br paulo.matos@chm.mar.mil.br
Canada	Kian FADAIE	Kian.Fadaie@dfo-mpo.gc.ca
Chile	Patricio CARRASCO	director@shoa.cl shoa@shoa.cl
China	LI Shixin XU Binsheng LIU Jiahua LI Chunju ZHAI Guojun GUO Hongwei YANG Baoceng	xubinsheng@msa.gov.cn xubinsheng@msa.gov.cn liujiahua@shmsa.gov.cn kuokwn@marine.gov.mo
Denmark	Jens Peter HARTMAN (MSDIWG Chair)	jepha@kms.dk
Finland	Juha KORHONEN	juha.korhonen@fta.fi
France	Laurent LOUVART	louwart@shom.fr
Germany	Mathias JONAS (HSSC Chair) Jens SCHRÖDER-FÜRSTENBERG (SNPWG Chair)	mathias.jonas@bsh.de Jens.Schroeder-Fuerstenberg@bsh.de
Greece	Alexis HADJANTONIOU	dcd_hnhs@navy.mil.gr
Indonesia	Dyan Primana SOBARUDDIN	infohid@dishidros.go.id
Japan	Tatsuo KOMORI	ico@jodc.go.jp
Korea (DPRof)	O Myong Chol HO Chon Il KIM Gyong Hwan	busong@star-co.net.kp
Korea (Rep of)	CHOI Shin-Ho CHOI Sung-Ho BAEK Yong OH Se-Woong	choimonty@korea.kr choise7413@korea.kr ybaek@korea.kr osw1@kiost.ac
Malaysia	Hasan ZAAIM Mohamad Yaakob MOHD SHUKRI	zaaim_hasan@yahoo.com shuk84karto@gmail.com
Netherlands	Jan SCHAAP Ellen VOS	j.schaap.01@mindef.nl em.vos@mindef.nl
Norway	Evert FLIER Njaal Tengs ABRAHAMSEN Robert SANDVIK (DPSWG Vice-Chair)	evert.flier@kartverket.no njal.tengs.abrahamsen@kartverket.no robert.sandvik@ecc.no
Peru	Roberto PEREZ	rperez@dhn.mil.pe
Poland	Henryk NITNER Stanislaw PIETRZAK	h.nitner@mw.mil.pl nihen2@wp.pl s.pietrzak@mw.mil.pl
Singapore	Soe Ling, Parry OEI Weng Choy LEE	parry_s_1_oei@mpa.gov.sg weng_choy_LEE@mpa.gov.sg
Spain	José Manuel MILLÁN GAMBOA	ihmesp@fn.mde.es

Member States		Name	Email
Sweden		Ralf LINDGREN	Ralf.Lindgren@Sjofartsverket.se
Turkey		Erhan GEZGIN Burak İNAN	director@shodb.gov.tr b.inan@shodb.gov.tr
UK		Peter JONES (CSPCWG Chair) Jonathan PRITCHARD (DPSWG Chair) Barrie GREENSLADE (TSMAD Chair) Chris HOWLETT (DQWG Chair) John BROWN (ABLOS Vice-Chair) Edward HOSKEN	peter.jones@ukho.gov.uk jonathan.pritchard@ukho.gov.uk barrie.greenslade@ukho.gov.uk chris.howlett@ukho.gov.uk john.brown@ukho.gov.uk edward.hosken@ukho.gov.uk
USA	NOAA	John NYBERG Shepard SMITH Colby HARMON (DIPWG Chair)	John.Nyberg@noaa.gov Shep.Smith@noaa.gov Colby.Harmon@noaa.gov
	NGA	John E. LOWELL	John.E.Lowell@nga.mil
IHB		Name	Email
		Robert WARD Gilles BESSERO (HSSC Secretary) Michel HUET (HSSC Ass. Secretary) Anthony PHARAOH	pres@iho.int dtech@iho.int adcs@iho.int adtd@iho.int
Observers		Name	Email
CIRM		Michael BERGMANN Hannu PEIPONEN	michael.bergmann@jeppesen.com hannu.peiponen@furuno.fi
FIG		Axel ANNAERT	Axel.annaert@hzs.be
IALA		Michael BERGMANN	michael.bergmann@jeppesen.com
IEC		Hannu PEIPONEN	hannu.peiponen@furuno.fi
IEHG		LI Liu (Day 4)	liuli@wti.ac.cn
PRIMAR		Robert SANDVIK	robert.sandvik@primar.org
RTCA		Michael BERGMANN Johan STAM (Day 1)	michael.bergmann@jeppesen.com jstam@skilltrade.nl

AGENDA AND TIMETABLE

Monday 4 Nov	HSSC CHAIR GROUP
1400 - ~1730	HSSC Chair Group Meeting (Chair and Vice-Chair of HSSC, Chairs of HSSC Working Groups (WGs), Secretary of HSSC)
0900	<p>1. Opening and Administrative Arrangements</p> <p>Welcome address by Capt LI Shixin, Deputy Director General of China Maritime Safety Administration (MSA)</p> <p><i>Docs: HSSC5-01A List of Documents (IHB)</i> <i>HSSC5-01B List of Participants (IHB)</i> <i>HSSC5-01C HSSC – List of Contacts (IHB)</i> <i>HSSC5-01D TOR for HSSC and related Working Groups (IHB)</i></p>
0915	<p>2. Approval of Agenda</p> <p><i>Doc: HSSC5-02A Agenda and Timetable (IHB)</i></p>
0930	<p>3. Matters arising from Minutes of 4th HSSC Meeting</p> <p><i>Docs: HSSC5-03A Minutes of HSSC4 (IHB)</i> <i>HSSC5-03B Status of Actions List from HSSC4 (IHB)</i> <i>HSSC5-INF2 Status of Temporary and Preliminary ENC Updates (IHB)</i></p>
1030	Group Photo followed by Coffee Break
1100	<p>4. HSSC Administration</p> <p>4.1 Implementation of Programme Performance Indicators <i>Doc: HSSC5-04.1A Programme Performance Indicators for HSSC (IHB)</i></p> <p>4.2 Restructuration of HSSC Working Groups <i>Docs: HSSC5-04.2A Review of the Structure of HSSC Working Groups (IHB)</i> <i>HSSC5-04.2B Creation of an S-100 Working Group (USA)</i> <i>HSSC5-04.2C Optimizing HSSC Working Groups (USA)</i> <i>HSSC5-04.2D Review of the structure of HSSC Working Groups – Comments by FR</i> <i>HSSC5-04.2E Comments by Finland on re-structuring HSSC Working Groups</i> <i>HSSC5-04.2F CSPCWG Comments on Proposals for the Structure and Optimizing of HSSC Working Groups</i></p> <p>4.3 Maintenance of S-57 and S-52 <i>Docs: HSSC5-04.3A Procedure for the maintenance of S-57 and S-52 (IHB)</i></p>

	<p><i>HSSC5-04.3B Comments by Finland on the Maintenance procedures of S-57 and S-52</i></p> <p><i>HSSC5-04.3C Comments from DIPWG Chair on Procedures for Maintenance of S-57 and S-52</i></p>
	5. Reports by HSSC Working Groups
1145	<p>5.1 Transfer Standard Maintenance and Application Development (TSMAD)</p> <p><i>Doc: HSSC5-05.1A Report and Recommendations of TSMAD (TSMAD Chair)</i></p>
1230	Lunch
1400	<p>5.1 Transfer Standard Maintenance and Application Development (TSMAD) (continued)</p> <p><i>Docs: HSSC5-05.1B S-101 Value Added Roadmap (TSMAD Chair)</i></p> <p><i>HSSC5-05.1C Master Plan for the development and implementation of S-100 (HSSC Chair, TSMAD Chair, DIPWG Chair, IHB)</i></p>
1530	Coffee Break
1600	<p>5.1 Transfer Standard Maintenance and Application Development (TSMAD) (continued)</p> <p><i>Doc: HSSC5-05.1D Regulatory Process associated with the Implementation of S-100 Based Products and Services (IHB)</i></p> <p><i>HSSC5-05.1E Proposal to formalize the identifiers for S-100 based product specifications (TSMAD Chair)</i></p> <p><i>HSSC5-05.1F Report of the S-101 Impact Study – FR views on the way ahead (France)</i></p> <p><i>HSSC5-05.1G Test Bed Projects in Support of S-101 Development and Implementation (Rep. of Korea)</i></p> <p><i>HSSC5-05.1Ha Comments by Finland on the status of S-57, scope of S-58 and the authority between S-57 and S-58 (Finland)</i></p> <p><i>HSSC5-05.1Hb Response to Finland's comments on S-58 (TSMAD Chair)</i></p> <p><i>HSSC5-05.1I S-100 Maritime Boundary Exchange Product Specification (Australia)</i></p> <p><i>HSSC5-INF6 IRCC WWNWS and S-100 Product Specification for Navigational Warnings (France)</i></p> <p><i>HSSC5-07.3A IEC Activities affecting HSSC (IEC)</i></p>
1630	break into drafting groups (if required)
1730	END OF DAY ONE
Wednesday 6 Nov	HSSC5 (continues)

	5. Reports by HSSC Working Groups (continued)
0900	5.2 Data Protection Scheme (DPSWG) <i>Doc: HSSC5-05.2A Report and Recommendations of DPSWG (DPSWG Chair)</i>
1030	Coffee Break
1100	5.3 Digital Information Portrayal (DIPWG) <i>Docs: HSSC5-05.3A Report and Recommendations of DIPWG (DIPWG Chair)</i> <i>HSSC5-05.3B S-52 Presentation Library Edition 4.0 (DIPWG Chair)</i> <i>HSSC5-INF3 New Paper Chart and ECDIS Chart 1 (USA)</i>
1230	Lunch
1400	5. Reports by HSSC Working Groups (continued)
	5.4 Standardization of Nautical Publications (SNPWG) <i>Doc: HSSC5-05.4A Report and Recommendations of SNPWG (SNPWG Chair)</i>
1445	5.5 Chart Specifications and Paper Charts (CSPCWG) <i>Docs: HSSC5-05.5A Report and Recommendations of CSPCWG (CSPCWG Chair)</i> <i>HSSC5-05.5B CSPCWG – Proposed Change of Name (CSPCWG Chair)</i> <i>HSSC5-05.5C Strengthening the requirement to construct charts on WGS84 (CSPCWG Chair)</i>
1530	Coffee Break
1600	break into drafting groups (if required)
1730	END OF DAY TWO
1830-2100	Evening Event China MSA will offer a welcome dinner at the Astor House Hotel and night cruise of Huangpu River after the dinner.
Thursday 7 Nov	HSSC5 (continues)
0900	consider work of drafting group(s) (if required)
	5. Reports by HSSC Working Groups (continued)
0945	5.6 Data Quality (DQWG) <i>Docs: HSSC5-05.6A Report and Recommendations of DQWG (DQWG Chair)</i> <i>HSSC5-INF4 Interface with IMO/HTW (formerly STW) on data quality issues (IHB)</i>
1030	Coffee Break

1100	5.7 Marine Spatial Data Infrastructure (MSDIWG) <i>Docs: HSSC5-05.7A Report and Recommendations of MSDIWG (MSDIWG Chair)</i> <i>HSSC5-05.7B IHO Participation in the UN Committee of Experts on Global Geospatial Information Management (IHB)</i>
1145	5.8 Tidal and Water Level (TWLWG) <i>Doc: HSSC5-05.8A Report and Recommendations of TWLWG (TWLWG Chair)</i>
1210	5.9 Hydrographic Dictionary (HDWG) <i>Doc: HSSC5-05.9A Report and Recommendations of HDWG (HDWG Chair)</i>
1230	Lunch
1400	5.10 Surface Current (SCWG) <i>Doc: HSSC5-05.10A Report and Recommendations of SCWG (SCWG Chair)</i>
1420	6. Inter-Organizational Bodies 6.1 IHO-IAG Advisory Board on the Law Of the Sea (ABLOS) <i>Doc: HSSC5-06.1A Status Report on ABLOS activities (ABLOS Chair)</i>
1440	7. Decisions of other bodies affecting HSSC 7.1 E-navigation developments <i>Docs: HSSC5-07.1A Report on e-navigation development affecting HSSC (IHB)</i> <i>HSSC5-07.1B E-navigation developments - Restructuring of the IHO GI Registry (Germany)</i>
1515	7.2 IMO <i>Docs: HSSC5-07.2A Report on IMO activities affecting HSSC (IHB)</i> <i>HSSC5-07.2B Revision of IHO Publication S-66: Facts about Electronic Charts and Carriage Requirements</i>
1530	Coffee Break
1600	END OF DAY THREE
1600 - ~1830	Chair Group Meeting <i>Preparation of List of Actions</i>
Friday 8 Nov	HSSC5 (continues)
0900	7.3 IEC <i>Doc: HSSC5-07.3A IEC Activities affecting HSSC (IEC)</i>
0910	7.4 Inland ENC Harmonization Group (IEHG) <i>Doc: HSSC5-07.4A Status Report on Inland ENC Development and</i>

	<i>Standardization (IEHG)</i>	
0920	7.5	CIRM <i>Doc: HSSC5-07.5A CIRM Activities affecting HSSC (CIRM)</i>
0930	7.6	IALA <i>Doc: HSSC5-07.6A IALA Activities affecting HSSC (IALA)</i>
0940	7.7	OGP
0950	7.8	IRCC <i>Doc: HSSC5-INF6 IRCC WWNWS and S-100 Product Specification for Navigational Warnings (France)</i>
1000	7.9	JCOMM <i>Doc: HSSC5-07.9A Development of the S-100 based Ice Information Product (Germany)</i>
1010	7.10	ISO <i>Doc: HSSC5-07.10A ISO Standards Development Proposals of Relevance to HSSC (IHB)</i>
1020	7.11	FIG
1030	Coffee Break	
1100	8.	Review of new developments and other information papers <i>Docs: HSSC5-INF1 Status Report on IHO Publications on Standards and Specifications (IHB)</i> <i>HSSC5-INF7 Future demand for Paper Nautical Charts (Australia)</i> <i>HSSC5-INF8 Withdrawal of Raster Navigational Chart service (Australia)</i> <i>HSSC5-INF9 National Report of the United States (NOAA) on Technical Matters</i> <i>HSSC5-INF10 Environment Marine Information Overlays (E-MIO) for East Asia ENCs</i>
1115	9.	Liaison with External Stakeholders <i>Doc: HSSC5-INF5 Format for future Stakeholders' Forum events (IHB)</i>
1130	10.	Review and Endorsement of HSSC Work Plan and List of Actions <i>Doc: HSSC5-10A Draft HSSC Work Plan (IHB)</i>
1200	11.	Review of HSSC input to EIHC-5

1215	<p>12. Date & Location of the next meetings</p> <p>HSSC-6: Tentative date: 10-14 November 2014. Offer from Chile for hosting HSSC-6 was expressed at HSSC-4.</p> <p>HSSC-7: Tentative date: early November 2015. MS are invited to propose venues. Fall-back venue: IHB, Monaco.</p> <p>HSSC-8: Tentative date: early November 2016. MS are invited to propose venues. Fall-back venue: IHB, Monaco.</p>
1225	<p>13. Closure of the Meeting</p>
1230	<p>END OF MEETING</p>
1300-1630	<p>Technical visit to China MSA Museum</p>

LIST OF ACTIONS FROM HSSC5

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE EVENT
1	List of Documents	HSSC5/01	IHB to insert posting date of documents on the download page of the IHO web site, for future HSSC meetings.	HSSC-6
3	T&P ENC Updates	HSSC5/02	IHB to invite MS who do not plan to align their ENC and paper chart T&P update regimes to reconsider their position and report to the IHB on any need for assistance.	15 Jan 2014
3	Use of the Object Catalogue - Guidance on T&P ENC Updates	HSSC5/03	TSMAD to take into consideration the comments reported in paper HSSC5-INF2 (Appendix to Annex A), for inclusion in the next edition of the Use of the Object Catalogue (S-57, Appendix B.1, Annex A).	TSMAD-28
3	T&P ENC Updates	HSSC5/04	IHB to inform IRCC of the concern that the differences between paper charts updates and ENC updates, as well as inconsistencies between ENCs from different producers, reflect badly on the IHO and to request IRCC to encourage the resolution of these issues by Regional Hydrographic Commissions via the WEND-WG.	IRCC-6
4.1	WG Work Plans	HSSC5/05	WG chairs to ensure that the level of detail in their respective work plans is homogeneous and that the work plans identify clearly the work items which are expected to be completed in the subsequent one or two years.	13 Dec 2013
4.1	Performance Indicators	HSSC5/06	IHB to invite WEND WG, via IRCC, to assess how representative is the ENC usage indicator based solely on the inputs from Primar and IC-ENC, and to propose alternatives if appropriate.	IRCC-6
4.1	Performance Indicators	HSSC5/07	Contributions for the 2013 period to be provided by HSSC WG Chairs (Performance Indicators no 2 and 3) and WEND WG Chair (Performance Indicator no 5) by 31 January 2014.	31 Jan 2014

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE EVENT
4.2	Restructuring HSSC WGs	HSSC5/08	HSSC Chair and Secretary to establish a correspondence group composed of the Chairs of HSSC, TSMAD, DIPWG, CSPCWG, SNPWG, TWLWG, SCWG and an IHB representative, to develop draft terms of reference and rules of procedure for the proposed new HSSC bodies, and consider their composition as well as the appropriate timely transition arrangements.	15 Jan 2014
4.2	Restructuring HSSC WGs	HSSC5/09	HSSC Chair to invite MS to participate in the HSSC Correspondence Group on HSSC WG restructuring.	15 Jan 2014
4.2	Restructuring HSSC WGs	HSSC5/10	IHB to request Member States and stakeholders to define their contribution in terms of resources to the proposed new HSSC bodies.	15 Jan 2014
4.2	Remote meeting facilities	HSSC5/11	USA to propose possible solutions for remote meeting facilities at the IHB and at other meeting venues.	HSSC-6
4.3	TOR of TSMAD and DIPWG	HSSC5/12	IHB to amend the terms of reference of TSMAD and DIPWG as proposed in the report of the drafting group (HSSC5-04.3D).	15 Jan 2014
5.1	New edition of S-64	HSSC5/13	TSMAD to finalize the draft edition 3.0.0 of S-64 at TSMAD-27 (December 2013).	TSMAD-27
5.1	New edition of S-64	HSSC5/14	TSMAD Chair to provide IHB with a clean copy of the draft edition 3.0.0 of S-64 for posting on the IHO website as a familiarization version.	31 Jan 2014
5.1	New edition of S-64	HSSC5/15	IHB to seek HSSC approval of the draft edition 3.0.0 of S-64 by correspondence through HSSC circular letter before end of October 2014 (in line with the publication of the new edition of IEC 61174).	31 Jan 2014
5.1	New edition of S-64	HSSC5/16	IHB to seek Member States approval of the draft edition 3.0.0 of S-64 by IHO circular letter.	15 Jul 2014
5.1	New edition of the Use of the Object Catalogue	HSSC5/17	IHB to seek Member States approval of the draft edition 4.0.0 of the Use of the Object Catalogue (UOC - S-57, Appendix B.1, Annex A) by IHO circular letter.	31 Jan 2014
5.1	S-57 Supplement no 3	HSSC5/18	IHB to seek Member States approval of S-57 Supplement no 3 by IHO circular letter.	31 Jan 2014
5.1	Feature catalogue builder	HSSC5/19	TSMAD, in liaison with DIPWG , to provide the IHB with a statement of requirements for developing a feature catalogue builder.	Overcome by events.

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE EVENT
5.1	Feature catalogue builder	HSSC5/20	IHB to prepare and award a contract for the development of a feature catalogue builder, subject to the availability of appropriate resources.	NA
5.1	S-101 Value Added Roadmap	HSSC5/21	TSMAD Chair to incorporate in the draft S-101 Value Added Roadmap the comments expressed during HSSC5.	31 Jan 2014
5.1	S-101 Value Added Roadmap	HSSC5/22	IHB to post the amended S-101 Value Added Roadmap on the IHO web site.	15 Feb 2014
5.1	S-101 Value Added Roadmap	HSSC5/23	TSMAD Chair to include an additional item in the TSMAD work plan to review the S-101 Value Added Roadmap annually.	13 Dec 2013
5.1	S-100 Master Plan	HSSC5/24	IHB to post the S-100 Master Plan on the IHO web site.	15 Jan 2014
5.1	S-100 Master Plan	HSSC5/25	IHB to invite additional input from Member States and other IHO Stakeholders, to further develop the S-100 Master Plan.	15 Jan 2014
5.1	S-100 Master Plan	HSSC5/26	TSMAD Chair to include an additional item in the TSMAD work plan to review the S-100 Master Plan annually.	13 Dec 2013
5.1	S-100 regulatory process	HSSC5/27	IHB to advise the IMO Correspondence Group on e-Navigation to consider the revision of the relevant performance standards and other instruments, if required, as a component of the draft e-navigation strategy implementation plan to be finalized in 2014, for consideration by NCSR 1.	NCSR 1
5.1	Product specification identifiers	HSSC5/28	TSMAD to prepare a detailed registry based procedure for the allocation of product specification identifiers.	TSMAD-28
5.1	Product specification identifiers	HSSC5/29	IHB to inform partner organizations on the allocation of product specification identifiers, as in Annex G.	15 Jan 2014
5.1	S-101 Impact Study	HSSC5/30	TSMAD Chair to consider the impact of the recommendations contained in HSSC5-05.1F (S-101 impact study) on the S-101 Value Added Roadmap.	HSSC-6
5.1	S-101 Impact Study	HSSC5/31	IHB to consider the impact of the recommendation contained in HSSC5-05.1F (S-101 impact study) on the S-100 Master Plan.	HSSC-6
5.1	S-101 test bed projects	HSSC5/32	TSMAD to include the KHOA S-101 test bed program as part of the TSMAD S-101 test plan strategy.	TSMAD-27
5.1	New edition of S-58	HSSC5/33	TSMAD to finalize the draft edition 5.0.0 of S-58 at TSMAD27, in accordance with the guidance provided at HSSC5.	TSMAD-27

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE EVENT
5.1	New edition of S-58	HSSC5/34	IHB to seek, by IHO circular letter, Member States approval of the draft edition 5.0.0 of S-58, together with a deadline for its implementation.	31 Jan 2014
5.1	Applicability of S-57 supplement documents	HSSC5/35	IHB to include a note in the list of standards that are applicable to ECDIS on the IHO web site, drawing attention to the applicability of S-57 supplement documents.	15 Jan 2014
5.1	PS for maritime limits & boundaries	HSSC5/36	Australia to request Geoscience Australia to change the product specification name from “Maritime Boundary Exchange Product Specification” to “Maritime Limits and Boundaries Product Specification” (IHO S-121).	TSMAD-28
5.1	PS for navigational warnings	HSSC5/37	WWNWS-SC is invited to liaise with TSMAD to develop an S-100 Product Specification for Navigational Warnings (IHO S-124).	IRCC-6
5.1	PS for sub surface navigation	HSSC5/38	Parties interested in the development of a product specification for sub surface navigation are invited to contact the USA.	28 Feb 2014
5.2	Transition to S-63 edition 3.1.1	HSSC5/39	IHB, in liaison with the DPSWG Chair, to consider the need for informing mariners about the transition to S-63 Ed 1.1 and take action as appropriate.	31 Dec 2013
5.3	New editions of S-52 and the PresLib	HSSC5/40	DIPWG Chair to provide the IHB with clean copies of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), for posting on the IHO website as a familiarization version.	Done
5.3	New editions of S-52 and the PresLib	HSSC5/41	IHB to seek HSSC approval of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), by correspondence through HSSC circular letter.	1 Apr 2014
5.3	New editions of S-52 and the PresLib	HSSC5/42	IHB to seek Member States approval of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), by IHO circular letter before end of October 2014 (in line with the publication of the new edition of IEC 61174).	15 July 2014
5.4	TOR of SNPWG	HSSC5/43	IHB to amend the terms of reference of SNPWG as agreed by the Committee.	15 Jan 2014
5.5	Paper charts derived from ENC's	HSSC5/44	Australia to provide feedback to HSSC-6 on their experience with producing paper charts from ENC's.	HSSC-6
5.6	IMO model courses on navigational issues	HSSC5/45	DQWG Chair to include in the DQWG work plan the recommendations contained in HSSC5-INF4 (interface with IMO/HTW).	13 Dec 2013

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE EVENT
5.6	Dynamic tides / water levels	HSSC5/46	DQWG Chair to include a new work item in the DQWG work plan to expand data quality into dynamic tides / water levels.	13 Dec 2013
5.6	Malacca and Singapore Straits MEH as a test case	HSSC5/47	DQWG Chair to include a new work item in the DQWG work plan to consider using the Malacca and Singapore Straits Marine Electronic Highways (MEH) project, as a test case.	13 Dec 2013
5.7	TOR of MSDIWG	HSSC5/48	IHB to amend the terms of reference of MSDIWG as agreed by the Committee.	15 Jan 2014
5.7	UN-GGIM initiative	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.	MSDIWG-5
5.8	IHO Resolutions related to tides	HSSC5/50	IHB to seek Member States approval of the revisions of IHO Resolutions 3/1919, 27/1919, 1/1977 and 2/1977 as amended, by IHO circular letter.	31 Jan 2014
5.8	Tidal Product Specification	HSSC5/51	TSMAD to assist the TWLWG in the development of a tidal product specification for navigational surface and tidal data transfer that could be used for generating dynamic water levels and navigational surfaces in ECDIS.	TWLWG-6
5.8	Under keel clearance	HSSC5/52	TWLWG to take note of and liaise with the Malacca and Singapore Straits Marine Electronic Highways (MEH) project, regarding the under keel clearance monitoring system.	TWLWG-6
5.9	New definitions	HSSC5/53	IHB to seek Member States approval of the new definitions contained in Annex C of the HDWG report, by IHO circular letter.	31 Jan 2014
5.10	TOR of SCWG	HSSC5/54	IHB to amend the terms of reference of SCWG as agreed by the Committee.	15 Jan 2014
6.1	New edition of C-51	HSSC5/55	IHB to seek Member States approval of the draft edition 5.0.0 of the TALOS Manual (C-51), by IHO circular letter.	Done (IHO CL 69/2013)
6.1	TOR for ABLOS	HSSC5/56	IHB to invite the Chair of ABLOS to seek the approval of the revised terms of reference of ABLOS by IAG.	15 Jan 2014
6.1	TOR for ABLOS	HSSC5/57	IHB to amend the terms of reference of ABLOS when approved by IAG.	When approved by IAG
7.2	Revision of S-66	HSSC5/58	IHB to invite Member States to propose directly or through Primar / IC-ENC, experts to contribute to the revision of S-66.	15 Jan 2014
7.2	Revision of S-66	HSSC5/59	IHB to include the preparation of a new edition of S-66 in the 2014-2015 HSSC work plan.	13 Dec 2013

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE EVENT
7.3	Implementa- tion of ECDIS standards	HSSC5/60	IHB to prepare with IEC and CIRM a joint submission to NCSR 1 on the implementation of the new editions of ECDIS standards and invite MS to seek the support of their national maritime administration.	NCSR 1
7.3	Service Lifecycle Management	HSSC5/61	IHB to contribute to a joint CIRM-IEC-IHO submission to NCSR 1 on Service Lifecycle Management (SLM) and invite MS to seek the support of their national maritime administration.	NCSR 1
7.3	Service Lifecycle Management	HSSC5/62	TSMAD to consider the impact of introducing Service Lifecycle Management (SLM) in the S-101 Roadmap and S-100 Master Plan.	TSMAD-28
7.9	Ocean Forecasts	HSSC5/63	IHB to prepare a submission to the 5 th Session of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) on elaborating a joint strategy to develop S-100 based multi-disciplinary products in the context of the implementation of the e-navigation strategy.	JCOMM-5
12	HSSC-7 Meeting	HSSC5/64	Member States are invited to propose venues for the HSSC-7 and HSSC-8 meetings to be held in early November 2015 and 2016 respectively.	28 Feb 2014

PRELIMINARY LIST OF S-100 BASED PRODUCT SPECIFICATIONS

IHO: S-101 to S-199

IHO S-101 ENC
IHO S-102 Bathymetric Surface
IHO S-103 Sub-surface Navigation
IHO S-111 Surface currents
IHO S-121 Maritime limits and boundaries
IHO S-122 Marine Protected Areas;
IHO S-123 Radio Services
IHO S-124 Navigational warnings
IHO S-125 Navigational services
IHO S-126 Physical Environment
IHO S-127 Traffic Management
IHO S-1xx Marine Services
IHO S-1xx Digital Mariner Routeing Guide
IHO S-1xx Harbour Infrastructure
IHO S-1xx (Social/Political)

IALA: S-201 to S-299

IALA S-201 Aid to Navigation Information
IALA S-20x Inter-VTS Exchange Format
IALA S-20x Application Specific Messages
IALA S-20x (Maritime Safety Information)

IOC: S-301 to S-399

Various: S-401 to ...

IEHG S-401 Inland ENC
JCOMM S-411 Sea ice
JCOMM S-412 Met-ocean forecasts

MARINE SPATIAL DATA INFRASTRUCTURES WORKING GROUP (MSDIWG)

Revised Terms of Reference

Ref: 5th HSSC Meeting (Shanghai, 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.

Post-meeting note: refer to the HSSC Work Plan for the detailed information related to the work items.

MSDIWG WORK PLAN 2014–15

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 Resolution 2/1997, as amended, refers)

No	Work item	Priority H-high M-med L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
A.1	Set up a survey to establish current position in respect of benefits and challenges faced by MS's role in NSDI and/ or MSDI								

No	Work item	Priority H-high M-med L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
A.2	Monitor and report on national, regional and international MSDI activities and report to increase visibility of hydrographic importance								
A.3	Create relevant use cases, from potential users of MSDI								
B.1	Liaise with TSMAD regarding level of S-100 understanding and use in support of SDI activities (e.g. INSPIRE)								
C.1	Identify the need for education and training among the Member States and report to WG Chair								
C.2	Establish a MSDI training syllabus for use across IHO community								
D.1	Maintain MSDI reference documentation on the IHO website								

No	Work item	Priority H-high M-med L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Responsible / contact person(s)	Related Pubs / Standard	Remarks
E.1	Conduct a review of MSDI that includes conceptual descriptions of the four sub-areas of MSDI as per: - Technical issues - Governance - Standards and specifications - Content (data)								
E.2	Monitor technical developments in relation to MSDI								
E.3	Determine hydrographic data set(s) that should be included in MSDI								
F.1	Conduct 2014 meeting of MSDIWG, arranged back to back with 1-day MSDI Open Forum								
F.2	Conduct 2015 meeting of MSDIWG, arranged back to back with 1-day MSDI Open Forum								
G.1	Ensure that MSDI is a standing agenda item for RHCs' meetings (IHO Resolution 2/1997 as amended)								