7ᵀᴴ MEETING OF THE HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE
Busan, Republic of Korea, 10-13 November 2015

Paper for Consideration by HSSC

IMO activities affecting HSSC (including e-navigation)

Submitted by:	IHB
Executive Summary:	This paper summarizes discussions and decisions taken by the IMO since HSSC-6 that may be relevant to the work of HSSC.
Related Documents:	HSSC6-07.1A - *IMO activities affecting HSSC (including e-navigation)* IHO CL 78/2014 dated 1ˢᵗ December - *Report on the 94ᵗʰ Session of the IMO Maritime Safety Committee* IHO CL 20/2015 dated 6 March - *IHO Contribution to the implementation of E-Navigation - Proposed Submission to the 95ᵗʰ Session of the IMO Maritime Safety Committee* IHO CL 24/2014 dated 16 March - *Report on the 2ⁿᵈ Session of the IMO Sub-Committee on Navigation, Communications and Search and Rescue (NCSR2)* IHO CL 34/2015 dated 27 April - *Preparation for the 95ᵗʰ Session of the IMO Maritime Safety Committee (MSC), 3-12 June 2015, London, United Kingdom* IHO CL 43/2015 dated 18 June - *Report on the 95ᵗʰ Session of the IHO Maritime Safety Committee* IHO CL 61/2015 dated 24 August - *ECDIS - Guidance for Good Practice* Resolution MSC.385(94) adopted on 21 November 2014 - *International Code for Ships Operating in Polar Waters (Polar Code)* - MSC 94/21/Add1 - Annex 6 Circular MSC.1/Circ.1494 dated 21 November 2014 - *Guidelines on Harmonization of testbed reporting* Circular MSC.1/Circ.1503 dated 24 July 2015 - *ECDIS - Guidance for Good Practice*
Related Projects:	HSSC Work Programme Maintenance of IHO Publications and Services related to ENC and ECDIS.

Introduction

1.   The principal IMO activities since HSSC-6 that may affect the work of HSSC arose from the 94ᵗʰ and 95ᵗʰ sessions of the Maritime Safety Committee (MSC 94 - November 2014, MSC 95 - June 2015) and the 2ⁿᵈ session of the IMO Sub Committee on Navigation, Communications and Search and Rescue (NCSR 2 - March 2015). The IHO, as an accredited observer to the IMO, was formally represented by the IHB at these meetings. A number of representatives drawn from hydrographic offices also formed part of several national delegations.

2.   As reported to IHO Member States in the relevant IHO Circular Letters (see related documents) IMO activities relevant to HSSC covered four main subjects:

-   E-navigation;

-   ECDIS matters;

- Maritime cybersecurity;

- Polar Code.

E-navigation

3.   MSC 94 approved the *e-navigation Strategy Implementation Plan* (SIP), as set out in document NCSR 1/28, annex 7, and the *Guidelines on Harmonization of test beds reporting* (MSC.1/Circ.1494). NCSR 2 finalized and endorsed a draft consolidated *Guideline on Software Quality Assurance (SQA) and Human Centred Design (HCD) for e-navigation*. The guideline was approved by MSC 95 to be issued as MSC.1/Circ.1512.

4.   MSC 94 and MSC 95 considered further the plan of work for the harmonized implementation and future development of the e-navigation in accordance with the methods of work of the IMO. MSC 95 agreed to amend the existing High-level Action 5.2.6 to read "*Development and implementation of e-navigation*" for inclusion in the IMO High-level Action Plan for 2016-2017 and agreed the following associated outputs:

- Guidelines on standardized modes of operation – it was agreed to include this as an output in the post-biennial agenda (2018-2019) of the MSC with NCSR assigned as the coordinating body;

- Revised performance standards for Integrated Navigation Systems (INS) – it was agreed to review resolution MSC.252(83) relating to the harmonization of bridge design and display information. The MSC agreed to include this output in the 2016-2017 biennial agenda of the NCSR and in the provisional agenda for NCSR 3 with a target completion year of 2017;

- Guidelines and criteria for ship reporting systems – it was agreed to review resolution MSC.43(64), as amended, relating to standardization and harmonized electronic ship reporting and automated collection of on-board data for reporting. The MSC agreed to include this output in the 2016-2017 biennial agenda of the NCSR and provisional agenda for NCSR 3 with a target completion year 2017;

- General requirements for ship-borne radio equipment forming part of the GMDSS and for electronic navigational aids – it was agreed to revise Resolution A.694(17) relating to Built In Integrity Testing (BIIT) for navigation equipment. The MSC agreed to include this output in the post-biennial agenda (2018-2019) of the MSC with NCSR assigned as the coordinating body; and

- Guidelines for the harmonized display of navigation information received via communications equipment – it was agreed to include this output in the 2016-2017 biennial agenda for the NCSR and the provisional agenda for NCSR 3 with a target completion year of 2017.

5.   The MSC did not accept a proposed output on "Consideration of reports on development and implementation of Maritime Service Portfolios (MSPs) (and other e-navigation reports) from Member States and international organizations" in its current form. The Committee recognized the importance of e-navigation and that the IMO should take a leading role and therefore invited member governments and interested parties to prepare a full justification for this output. Norway volunteered to coordinate this work and to submit a revised proposal for consideration at MSC 96.

6.   It is proposed that the HSSC tasks the NIPWG to coordinate the contribution of the IHO to the development of guidelines for the harmonized display of navigation information and to the preparation of the output related to the development and implementation of MSPs, notably in liaison with the WWNWS-SC.

7.   It is proposed that the HSSC tasks the ENCWG and S-100WG to monitor any possible impact of the work on the agreed e-navigation outputs on ECDIS related standards and S-100 related standards respectively.

8.   Paragraphs 6 and 7 above address the request of the DQWG (action DQWG10-12b) that the HSSC considers "how the e-Navigation SIP items will be addressed and tasked to the various bodies within IHO".

ECDIS Matters

9.   MSC 94 considered the proposal of Ukraine (document MSC 94/18/2) to integrate ECDIS and VHF DSC. Taking into account that the compelling need of the proposal had not been established, the Committee agreed not to include the proposed output in its 2016-2017 biennial agenda.

10.   As indicated at HSSC-6, the IHB submitted to NCSR 2, on behalf of the IHO, a document reporting on the monitoring of ECDIS issues and chart coverage (NCSR 2/22/2).   The IHB also highlighted that some port authorities were requiring the carriage of paper charts in addition to the adequate set of ENCs, carried in accordance with the requirement set out in SOLAS Regulation V/19.2.14. The Sub-Committee noted with concern that situation.

11.   MSC 95 approved the MSC Circular on *ECDIS - Guidance for good practice* (MSC.1/Circ.1503). As reported to HSSC-6 and explained in IHO CL 61/2015, the Circular replaces, without modifying the related provisions, five IMO circulars which, as a consequence, have been cancelled. It is proposed that the HSSC invites the S-66 Project Team to reflect this situation in the draft new edition of S-66.   The Annex to the Circular includes in particular the indication that "ECDIS that is not updated to the latest version of the IHO Standards may not meet the chart carriage requirements as set out in SOLAS Regulation V/19.2.1.4." This indication is particularly relevant in relation to the recent publication of new editions of IHO Publication S-52 – *Specifications for Chart Content and Display Aspects of ECDIS*, and S-52 Annex A - *IHO Presentation Library for ECDIS*.

12.   As reported to HSSC-6, the IMO has considered that an unambiguous requirement to update ECDIS software would require amending SOLAS Chapter V, subject to appropriate proposals from member governments. The IHB has invited the IHO-EU Network Working Group to investigate the feasibility of introducing such a requirement in the European Directive on Marine Equipment to which many of the type-approval organizations are subject.

13.   The number of ships' reports on ENC/ECDIS Data Presentation and Performance Check received has increased significantly in 2015 as shown in Table 1. This is probably due to the promotion of the checks by various organizations in conjunction with the wider use of ECDIS.

Table 1

Outcome of ENC/ECDIS Data Presentation and Performance Checks for Ships

Period	1 Aug 2011 15 Apr 2013	15 Apr 2013 15 Apr 2014	15 Apr 2014 1 Dec 2014	1 Dec 2014 15 Sep 2015
Number of reports	1042	76	74	814
% of reports indicating no problem	22%	43%	55%	66%
% of reports indicating no anomaly in the display of "new objects"	60%	91%	95%	94%

14.   The results indicate a continuing improvement in the updating of ECDIS software. No new issue has been identified.

15.   It is proposed that the HSSC tasks the ENCWG to consider the impact of the implementation of the new editions of S-52, S-52 Presentation Library and S-64 on the check dataset and associated instructions.

Maritime cybersecurity

16.   MSC 95 considered the issues of maritime cybersecurity and agreed to await the outcome of the industry guidance on maritime cybersecurity on board ships which is planned to be submitted to MSC 96.

17.   Member governments and international organizations were urged to collaborate on proposals for guidance on maritime cybersecurity. It was noted that all stakeholders of the supply chain would have to incorporate a maritime cybersecurity regime. In due course, this may impact the provision of hydrographic services in relation to the operation of ECDIS and e-navigation within integrated systems, the development of services based on S-100 and the modernization of the GMDSS.

18.   It is proposed that the HSSC tasks the DPSWG to monitor the development of the industry guidance and to advice on possible future actions.

Polar Code

19.   MSC 94 approved and adopted the text of the mandatory *International Code for Ships Operating in Polar Waters* (the Polar Code - Resolution MSC.385(94)) and a new chapter XIV to SOLAS on "*Safety measures for ships operating in polar waters*". The Polar Code and Chapter XIV of SOLAS will have an adoption date of 1 July 2016 and will come into force on 1 January 2017 for new ships constructed after that date. Ships constructed before 1 January 2017 will be required to meet the relevant requirements of the Polar Code by the first intermediate or renewal survey, whichever occurs first, after 1 January 2018. Resolution MSC.385(94) includes in Part I-B - *Additional guidance regarding the provisions of the Introduction and Part I-A* the provisions reported to HSSC-6 (see HSSC6-07.1A – paragraph 28).

20.   It is proposed that the Committee task the DQWG, NIPWG and NCWG to consider improvements to current IHO specifications or other actions which could facilitate the implementation of these provisions.

Action required of HSSC

21.   The HSSC is invited to:

    a.   **Note** this report,

    b.   **Consider** the following recommendations:

- Paragraph 6: task the NIPWG to coordinate the contribution of the IHO to the development of guidelines for the harmonized display of navigation information and to the preparation of the output related to the development and implementation of MSPs, notably in liaison with the WWNWS-SC;

- Paragraph 7: task the ENCWG and S-100WG to monitor any possible impact of the work on the agreed e-navigation outputs on ECDIS related standards and S-100 related standards respectively;

- Paragraph 11: invite the S-66 Project Team to reflect in the draft new edition of S-66 the publication of Circular MSC.1/1503 on *ECDIS - Guidance to good practice* and the cancellation of the relevant previous IMO circulars;

- Paragraph 15: task the ENCWG to consider the impact of the implementation of the new editions of S-52, S-52 Presentation Library and S-64 on the ECDIS ship check dataset and associated instructions;

- Paragraph 18: task the DPSWG to monitor the development of the industry guidance on maritime cybersecurity and to advice on possible future actions;

- Paragraph 20: task the DQWG, NIPWG and NCWG to consider improvements to current IHO specifications or other actions which could facilitate the implementation of the provisions of the Polar Code related to charting issues.

    c.   **Take any other actions** considered necessary.