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MARITIME SAFETY COMMITTEE
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Agenda item 19

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WORK PROGRAMME

**Comments on implementing e-navigation to enhance the safety of navigation and protection of the marine environment**

**Submitted by the International Hydrographic Organization**

| | SUMMARY |
|---|---|
| *Executive summary:* | This document presents comments, from the IHO perspective, on the proposal to approve six outputs on e-navigation in relation to the proposed amended High-level Action 5.2.6, "Development and implementation of e-navigation" |
| *Strategic direction:* | 5.2 |
| *High-level action:* | 5.2.6 |
| *Planned output:* | No related provisions |
| *Action to be taken:* | Paragraph 19 |
| *Related documents:* | Resolution MSC.232(82); MSC-MEPC.1/Circ.4/Rev.3; MSC 90/28, MSC 90/28/Add.1; MSC 94/18/8, MSC 94/18/10; MSC 95/19/8; NAV 59/6/4, NAV 59/INF.6; NCSR 2/11 and NCSR 2/22/2 |

**Background**

1        This document is submitted in accordance with paragraph 6.12.5 of the *Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.4/Rev.3), and comments on document MSC 95/19/8.

2        At its ninety-fourth session, the Maritime Safety Committee (MSC) approved the e-navigation Strategy Implementation Plan (SIP), as set out in document NCSR 1/28, annex 7. The Committee also considered document MSC 94/18/8, proposing the plan of work for the Organization for the harmonized implementation and future development of e-navigation, together with document MSC 94/18/10, and recognizing the importance of e-navigation and that the Organization should take a leading role, invited Member Governments to:

        .1        review each of the tasks listed in the SIP with a view to reducing the number of outputs;

.2      prepare a full justification for each reviewed output in accordance with the information required in annex 3 to resolution A.1062(28);

.3      prepare a comprehensive prioritized plan of work, which should include the time required for the completion of each output; and

.4      submit the information to MSC 95 for consideration with a view for inclusion in the post-biennial agenda of the Committee.

3      Accordingly, document MSC 95/19/8 submitted by Norway and others proposes an amended High-level Action 5.2.6 on "Development and implementation of e-navigation" and six related outputs:

.1      guidelines on standardized modes of operation (S-mode);

.2      an update to the *Revised performance standards for Integrated Navigation Systems (INS)* (resolution MSC.252(83)) relating to the harmonization of bridge design and display of information;

.3      a revision of the *Guidelines and criteria for ship reporting systems* (resolution MSC.43(64), as amended) relating to standardized and harmonized electronic ship reporting and automated collection of onboard data for reporting;

.4      amendments to the general requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids (resolution A.694(17)) relating to Built-In Integrity Testing (BIIT) for navigation equipment;

.5      *Guidelines on the harmonized display of navigation information received from communications equipment*; and

.6      consideration of reports on development and implementation of Maritime Service Portfolios (MSPs) (and other e-navigation reports) by Member States and other international organizations.

4      As a co-sponsor of MSC 94/18/8, the International Hydrographic Organization (IHO) continues to support the proposed amended High-level Action 5.2.6 and its outputs. Subject to their approval by the Committee, the proposed outputs .1, .2, .4, .5 and .6 could potentially impact the work programme of the IHO. This document therefore comments on these five proposed outputs from the perspective of the IHO.

**S-mode**

5      The S-mode concept is partially implemented in the current IMO ECDIS performance standard (resolution MSC.232(82)) and the associated IHO chart display standard (S-52 – *Specifications for Chart Content and Display Aspects of ECDIS*). If this output introduces additional requirements, the impact on the ECDIS standards will have to be considered. This aspect is not clearly addressed in the analysis of the implications of the proposed output and the IHO questions what would be the real impact of a set of guidelines.

**Harmonization of bridge design and display of information**

6        The proposal includes the development of a new module to the performance standards for Integrated Navigation Systems (INS) concerning the display of information received via communications equipment.  The IHO notes that this component needs to be closely coordinated with proposed outputs 5 (Harmonized display of navigation information) and 6 (Maritime Service Portfolios).

**Built-In Integrity Testing (BIIT) for navigation equipment**

7        This proposed output addresses the revision of resolution A.694(17) and the associated industry standard IEC 60945. Both documents are referenced in the ECDIS performance standard (MSC.232(82)). If this output is accepted, the impact on ECDIS standards will have to be considered.

**Harmonized display of navigation information**

8        The development of the Common Maritime Data Structure (CMDS) based on IHO standard S-100 – Universal Hydrographic Data Model and the further development of the relevant proposed Maritime Service Portfolios (output 6) will require to be closely coordinated with the development of guidelines for the harmonized display of navigation information.

9        The development of the CMDS is addressed in task T14 of the e-navigation SIP. Annex 7 of MSC 95/19/8 reports this task as "work ongoing" and refers to the IMO/IHO Harmonization Group on Data Modelling (HGDM) established by MSC 90 (MSC 90/28/Add.1, annex 22). The IHO notes that the HGDM is still dormant and questions whether any significant activities are on-going in terms of development of the CMDS. According to its terms of reference, the HGDM should be chaired by an IMO Member State.

10       Any new requirements affecting the provision of Maritime Safety Information (MSI) arising from the proposed output should be considered in the context of the ongoing review of the Global Maritime Distress and Safety System (GMDSS). Therefore, the IHO recommends that the implementation of the proposed output, if approved, be coordinated closely with that review.

11       As reported in NCSR 2/11, three product specifications based on S-100 and relevant to navigational warning services are being developed.  The IHO is developing S-124 – *Navigational warnings*.  The Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) of the World Meteorological Organization (WMO) and of the Intergovernmental Oceanographic Commission (IOC) is developing S-411 – *Sea ice* and S-412 – *Met-ocean forecasts*.

**Maritime Service Portfolios**

12       The proposed output is limited to the consideration of reports submitted by Member States and international organizations.  This proposal is supposed to address task T17 of the e-navigation SIP which aims at developing a resolution on Maritime Service Portfolios (MSPs).  That objective is not reflected in the proposal.

13       The IHO notes that the development and implementation of MSPs involve several organizations and require their agreement on the output, in accordance with the deliverable of task T17, and coordination of its delivery by the IMO, in accordance with the recognized leading role of the Organization.  It is unclear how the harmonization and scrutiny of MSPs will take place, and what this will mean in practice.

14      As indicated in paragraph 8 above, the further development of the MSPs would seem to be a pre-requisite to the development of guidelines for the harmonized display of navigation information.

**Arrangements for the IHO contribution to the e-navigation Strategy Implementation Plan**

15      The contribution of the IHO to the e-navigation SIP is coordinated by the IHO Hydrographic Services and Standards Committee (HSSC).  The HSSC relies on a number of specialized working groups (WG). A new structure of working groups has been in effect since 1 January 2015.

16      The Nautical Information Provision Working Group (NIPWG) is tasked to develop high level specifications for a combined MSP covering the provision of hydrographic services to mariners, in accordance with the e-navigation SIP.

17      The maintenance of the current IHO standards for ECDIS has been regrouped under the ENC Standards Maintenance Working Group (ENCWG). The S-100 Working Group (S-100WG) leads the development of IHO standards for IHO e-navigation-based services. The development of S-100-based product specifications is now assigned to dedicated project teams or subgroups which draw on the expertise of the relevant organ(s) specialized in the subject-matter and of the S-100WG.

18      The IHO welcomes the participation of expert contributors from other international organizations and from industry.

**Action requested of the Committee**

19      The Committee is invited to consider the views and information provided above in its deliberations on document MSC 95/19/8 and take whatever action is deemed appropriate.

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