

# **8<sup>th</sup> MEETING OF THE IHO COUNCIL**

**Monaco, 15 – 17 October 2024**



## **REPORT OF THE IHO HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE, HSSC**

# REPORT<sup>1</sup> OF THE IHO HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE TO THE 8<sup>TH</sup> MEETING OF THE IHO COUNCIL

## **References:**

- A. *List of Decisions and Actions from C-7 affecting HSSC*
- B. [List of Decisions from A-3 affecting HSSC](#)
- C. *List of Decisions and Actions of HSSC-16*

## **Annexes:**

- A. *Draft revised version of the Roadmap for the S-100 Implementation Roadmap, Annex 2*
- B. *Draft revised version of The Dual Fuel Concept for S-100 ECDIS. S-100 Implementation Roadmap Annex 4.*
- C. *Draft Terms of Reference of the MASS WG.*
- D. *HSSC List of Funding Priorities with Financial Estimates*

## **Introduction**

1. The 16<sup>th</sup> Hydrographic Services and Standards Committee (HSSC) meeting took place from 27 to 31 May 2024 in Tokyo, Japan as a face-to-face meeting, as announced by the IHO CL 04/2024. 31 Member States were represented, 6 NGOs, one of the RENCs (PRIMAR) and a few other invited expert contributors. In total 90 participants, which indicates an increased interest in the IHO services and standards development.

The meeting was guided by HSSC main principles dealing with the promotion and the coordination of the development of standards, specifications and guidelines for official products and services in order to meet hydrographic information requirements for navigation and other usage.

As consequence of inputs from Council-7 (see Reference A) and from IHO Assembly-3 (see Reference B), the 16<sup>th</sup> meeting of HSSC was characterized by two main levels of discussion:

- An operational/strategic level:
  - a) The establishment of an IHO Infrastructure Centre including improvement of the IHO Security Scheme process (A3/14, C7/10 and C/12)
  - b) The implementation of the Roadmap for the S-100 Implementation Decade (2020-2030) following the timeline in S-100 Roadmap, Annex 2 related to Work Programme 2 (C7/13, C7/26 and C7/28)
  - c) More structured testing of S-100, including Sea Trial areas, to secure that IHO meets end user's expectations.
  - d) Initial inputs to the revised IHO Strategic Plan, 2027 – 2032 (C7/38)
- A technical level:
  - a) Progresses in the development of the S-1xx Product Specifications
  - b) Progress of the work plans, items outside S-100, of subordinate bodies

The list of Decisions and Actions from HSSC16 is provided in Reference C.

## **Technical Programme Coordination**

2. This document reports on the progress of the ongoing implementation of the IHO Work Programme 2024 and the three-year Work Programme for 2023 – 2026 that takes into

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<sup>1</sup> Report to C-8 and also Summary Report of HSSC-16. See Action C7/19 that states “*Considering the timelines between HSSC-16 and IRCC-16 meetings in 2024 and the countdown for submission of reports and proposals to C-8, the Council invited HSSC and IRCC Chairs to prepare their 2024 meeting minutes with the view that it will be used/submitted directly as reports and proposals to be considered at C-8*”.

account HSSC Work Plan inputs provided by WGs/PTs Chairs during the 16<sup>th</sup> HSSC meeting.

### Difficulties and challenges yet to be addressed

3. The implementation of S-100 is accelerating and IHO is in the spotlight. Though, other international organisations such as IMO, WMO, IALA, IEC, CIRM, and IEHG is also working more intensely with S-100 development. The IMO e-Nav strategy is dependent on S-100 and as such S-100 is a fundamental element of digitalisation of the shipping industry. S-100 implementation was raised at the IMO Maritime Safety Committee (MSC) in May 2024 as a consequence of the IMO Resolution on ECDIS Performance Standards, which now includes S-100. Coordination with this wide range of international organisations is a challenge and there is a clear risk that decisions are taken outside IHO, which can affect IHO and HOs. IHO and its MS need to participate even more actively in the coordination with other international organisations and especially IMO (Annex 1 of the Roadmap for the S-100 Implementation Decade may need to be considered and subsequent actions carried out)<sup>2</sup>.
4. S-100 is a complex ecosystem and the technical infrastructure is currently hosted by the IHO Secretariat, such as the S-100 Geospatial Information Registry and the Security Scheme. Apart from maintaining the technical infrastructure the S-100 ecosystem also requires administrative and operative resources. IALA, WMO, IEC and others need support from IHO, but today resources within the IHO Secretariat are limited. A sustainable structure is needed to maintain the technical, operational and administrative infrastructure around S-100. This means that IHO capacity for the long-term support of S-100 needs additional resources, as suggested in this report. This includes as well organizational, financial and operational challenges for IHO.
5. In order to meet the commitments made to other organizations on S-100 it is critical to encourage IHO Member States and wider stakeholders to actively support the further development of S-100 product specifications to ensure IHO's timely delivery of operational product specification editions in accordance with the current timeline. In addition, focus must also now be on data production to achieve an appropriate coverage of S-100 products.

### Achievements/outputs/conclusions

#### Implementation of the IHO Strategic Plan (SP) and inputs to the revise SP 2027 - 2032

6. The IHO Strategic Plan was agreed upon by the IHO Assembly 2. Subsequently the following Council 4 meeting decided to implement the Strategic Performance Indicators (SPIs). SPIs allocated to HSSC has been reported in January 2024 and updated figures are shown in the dashboard below, figure 1.

Goal 1 : Evolving the hydrographic support for safety and efficiency of maritime navigation				Goal 2 : Increasing the use of hydrographic data for the benefit of society
1.1 DELIVER STANDARDS FOR HYDROGRAPHIC DATA AND SPECIFICATIONS OF HYDROGRAPHIC PRODUCTS		1.2 DEVELOP STANDARDS & SPECIFICATIONS		2.2 PROMOTE NEW TOOLS AND METHODS
1.1.1 Member States produce & deliver products based on S-100		1.1.2 Number of hydrographic data products and services based on S-100	1.2.1 Percentage of Hydrographic data product and services based on S-100	2.2.2 Number of new applications of the new version of Standards for Hydrographic Survey (S-44)
Target	2026 : 60% of MS distribute at least 1 product*	2026 : 10** S1xx Product Specifications are operational (Edition 2.0.0)	2026 : 100% of PS** includes cyber security and data quality assessment	Number of downloads of S-44 Edition 6.0.0 and following ones
Value (31/12/2023)	0% of MS distribute official products Several MS distribute S-102 & S-111 compliant with current editions of PS	0/10	0% No PS in Edition 2.0.0	1312
* Based on that 62 of 94 IHO MS produce S-57 ENC's (March 2021) ** S-101, S-102, S-104, S-111, S-122, S-124, S-127, S-128, S-129, S-131				

Figure 1; Dashboard on Strategic Performance Indicators allocated to HSSC. Updated 31<sup>st</sup> December 2023.

<sup>2</sup> Which is outside the scope of HSSC as such.

7. To provide inputs to the revised IHO SP 2027 – 2032, in accordance with Decision A3/08e and C7/37, the HSSC Chair Group conducted a brainstorm session in front of HSSC-16. The HSSC Chair group identified a list of areas in need of refinement. Based on this input paper, HSSC-16 decided to post this list for each MS to submit three priority votes on items of importance for the strategic direction of the IHO. The results were shared at the end of the meeting. The IHO relationship with the IMO E-Navigation Strategy was considered as highly important. Discussions are already ongoing between the IHO and IMO Secretariat to work more closely together and a plan is to hold an industry S-100 stakeholder session in conjunction with a 2025 IMO meeting in London. The result of the IHO Strategic Plan voting is shown in figure 2 below.

**The Council is requested to invite the Strategic Plan Review Working Group (SPRWG) of the IHO Council – establishment of which to be discussed at C8 – to consider the HSSC inputs to the IHO Strategic Plan 2027 – 2032 with the priority areas shown in figure 2 in this report**

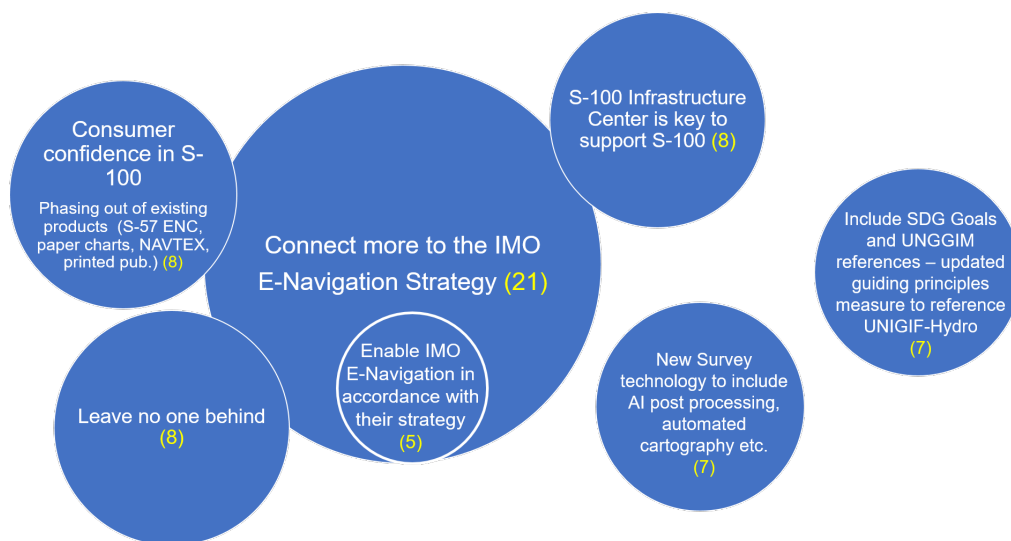


Figure 2; HSSC proposed areas of refinement to the IHO Strategic Plan 2027 – 2032. To strengthen the connection to the IMO E-Navigation Strategy was considered to be the top priority. Three other areas related to S-100 was identified; customer's confidence in S-100, the improved IHO S-100 Infrastructure and leave no one behind. Additionally, new technology and reference to the UN Sustainable Development Goals and UN-GGIM was identified as priority areas. The numbers of votes from HSSC MS at HSSC-16 are shown in yellow.

### **The implementation of the Roadmap for the S-100 Implementation Decade (2020 – 2030)**

8. Following an A-3 proposal (PRO 2.2) by the ROK, the A-3 recognized the need to establish a S-100 Infrastructure Centre and approved the foundation of a new Project Team under HSSC to propose to the Council how such an Infrastructure Centre could be established (A3/14, C7/11 and C7/12). This Project Team, S-100 ICE PT, was established at HSSC-15 (2023) and provided their first report to HSSC-16. To secure a sustainable infrastructure for the management of the operational, technical and administrative components supporting S-100 is crucial for the whole implementation of S-100 and as such a strategic decision to take for the IHO.

HSSC-16 agreed on the name of the centre as "IHO Infrastructure Centre" for the following reasons. Actually, the Centre should also be able to include management of other IHO technical systems outside the S-100 ecosystem. It was agreed that the general role would be to support the development, operation and management of IHO governed products and required IHO services with a common base infrastructure. Initial focus will be to ensure that S-100 is operational with high priority given to two critical infrastructure components:

- a) the quality control and secure delivery of S-100 catalogues and S-164 test datasets and;
- b) the operative processes for the S-100 Part 15 security scheme

A basic governance and composition of the IHO Infrastructure Centre is presented in figure 3 below and a proposed implementation timeline was agreed upon by HSSC-16 and is available in figure 4. The PT was tasked by HSSC to start analysing the IHO Resolutions in order to propose amendments covering the IHO Infrastructure Centre to HSSC-17 for endorsement, and eventually Council-9 and Assembly-4 for any decisions to amend the IHO Resolutions. The IHO Secretariat will take lead on this action. Following a generous offer from the Republic of Korea to host the Centre, the Committee was in agreement that the location of the Centre should be in the Republic of Korea, likely in Busan or Incheon. However, the Centre should be an integral part of the IHO Secretariat. To be able to setup the IHO Infrastructure Centre in accordance with the proposed timeline **HSSC invites Council-8 to agree on the principles upon an interim establishment of the Centre 2025, followed by a permanent establishment to be decided by Assembly-4.** An interim establishment includes the establishment of the Centre's management (recruiting a General Manager), the preparation of a transition plan and conduct "on-boarding" of components. HSSC has tasked the S-100 ICE PT, in liaison with HSSC and the IHO Secretariat to supervise the establishment of the IHO Infrastructure Centre.

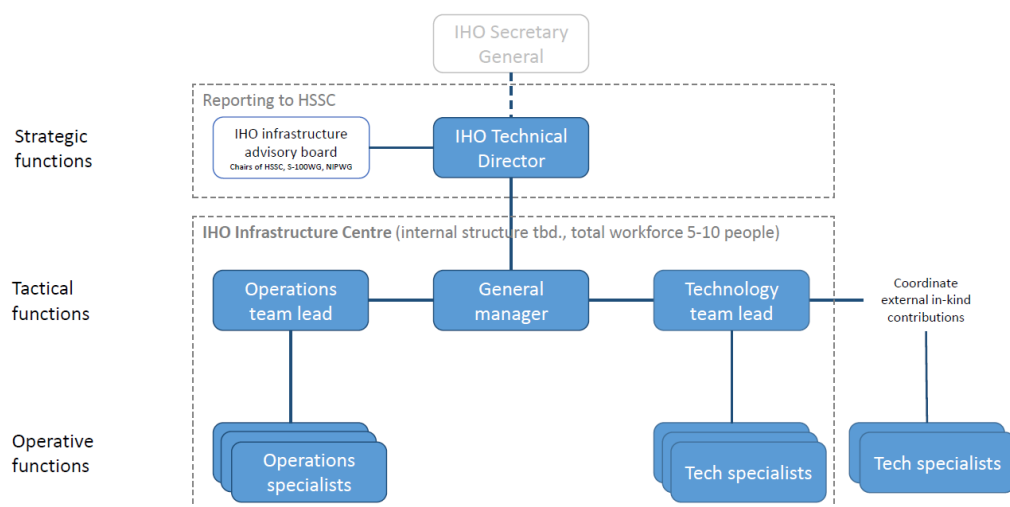


Figure 3; Proposed governance and composition of the IHO Infrastructure Centre. Total workforce is estimated to 5 – 10 persons.

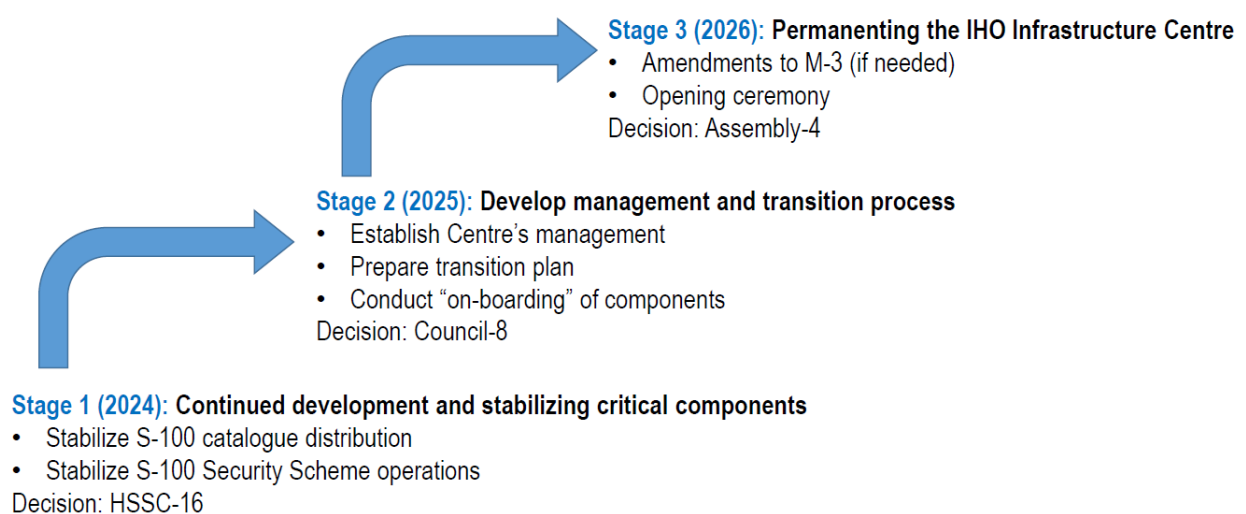


Figure 4; Proposed IHO Infrastructure Centre Implementation Timeline.

- A Security Scheme Project Team was established at HSSC-15 and the PT delivered its first report to HSSC-16. The report focused on updating IHO processes and procedures regarding the S-63/S-100 security scheme process. The Security Scheme Project Team

presented progress on updating the contracting process for OEM and Data Server agreements. The agreements needed a legal review and have already been edited to reduce legal exposure for the IHO but will be further reviewed to improve the terms for both the IHO and signatories of the agreements. A security scheme review process will be put in place for future scheme adjustments. The main process will be agreed upon by HSSC MS. HSSC-16 recognized that the IHO Security Scheme will need to be an integral part of the IHO Infrastructure Centre's responsibility. HSSC agreed with the PT's proposal to collect annual administration fees from the users of the security scheme. For this purpose, an online payment function is needed on the IHO Portal. **HSSC invites the Council to confirm funding of a special project to integrate an online application function supporting the security scheme administration process in the IHO Portal.**

10. Council-7 requested HSSC (C7/10) to identify current or emerging priorities that are critical in the implementation of the S-100 Roadmap as potential candidates for funding by the IHO. The HSSC-16 and the HSSC Chair Group discussed this issue and a first version of a List of Funding Priorities with Financial Estimates has been compiled. However, it should be noted that this is works in progress and a first early version of such a document. See Annex D. Several items have been funded by the two RENCs IC-ENC and PRIMAR and the Republic of Korea. Though there are continuous needs for funding to be able to meet the targets for S-100 implementation.
11. In accordance with Council actions C6/28 and C7/14, HSSC is contributing to the implementation of the S-100 Roadmap. The preparation of the core S-100 product specifications is progressing according to the plan presented at Council 7. This means that the operational edition of S-100, 5.2.0 has been approved by IHO MS (May 2024). Operational editions of the Product Specifications listed below are expected in December 2024 and an IHO CL will be issued in October for MS approval.
  - S-101 ENC
  - S-102 Bathymetry
  - S-104 Water Level
  - S-111 Surface Currents
  - S-124 Navigational Warnings
  - S-128 Catalogue of Nautical Products
  - S-129 UKC Management

To avoid unnecessary delays, it is important that IHO MS respond to this IHO CL in a timely manner.

The development of the critical supporting framework is also progressing, but in agreement with the International Electrotechnical Commission (IEC) HSSC has decided to postpone the timetable for the Interoperability Standard S-98 and the S-100 test dataset S-164 to 2025. Operational editions of S-98 and S-164 should be ready for HSSC endorsement at the next HSSC-17 meeting, early May 2025, following MS approval by IHO CL. An updated S-100 timeline is available in Annex A to this report.

**The Council is invited to approve the revised S-100 timeline.**

12. The Dual Fuel Concept for S-100 ECDIS was approved by the Assembly-3 (A3/13) and is available as Annex 4 to the S-100 Roadmap. Focus is on capturing the concept operation and support for transition to S-100 ECDIS, with particular reference to Dual Fuel mode, being the primary mode of transition from existing S-57 based IMO ECDIS operation. Due to the revised IMO Resolution on ECDIS Performance Standards MSC.530(106) and the latest technical development, there is a need to update the Dual Fuel Concept on S-100 ECDIS. Most changes are editorial only. The S-100WG is maintaining the document. With the support of NIPWG, TWCWG, WENDWG and HSSC Chair the WG has prepared an updated



version (HSSC-16/32). The revised document is available as Annex B to this report. **The Council is invited to approve the updated Dual Fuel Concept for S-100 ECDIS.**

13. In the IMO Resolution MSC.530(106) Performance Standards for ECDIS the term for *Electronic Navigational Data Service* (ENDS) is defined as “...a special-purpose database compiled from nautical chart and nautical publication data, standardized as to content, structure and format, issued for use with ECDIS by or on the authority of a government, authorized hydrographic office or other relevant government institution, and conforming to IHO standards; and, which is designed to meet the requirement of marine navigation and the nautical charts and nautical publications carriage requirements in SOLAS regulations V/19 and V/27. The navigational base layer of ENDS is the electronic navigational chart (ENC).” To illustrate the ENDS definition and the relationship between S-100 products, the IMO Maritime Services, as defined in the IMO E-Navigation Strategy, and SOLAS Regulations, NIPWG has developed the ENDS Tree Diagram, see figure 5. The diagram is intended to be a useful tool to help hydrographic offices communicate the importance of their S-100 implementation and in instances like IMO audits. HSSC-16 adopted the diagram and proposed to include it in the S-100 Roadmap, Annex 2, so **the Council is invited to agree upon the ENDS Diagram to be included in the S-100 Roadmap, Annex 2 and consider concrete actions in 2025 for the reinforcement of interactions with major stakeholders (e.g. IMO, IEC, S-100 ECDIS end-users, OEM, industry, distributors) in accordance with Annex 1.** The draft is available in Annex A to this report.

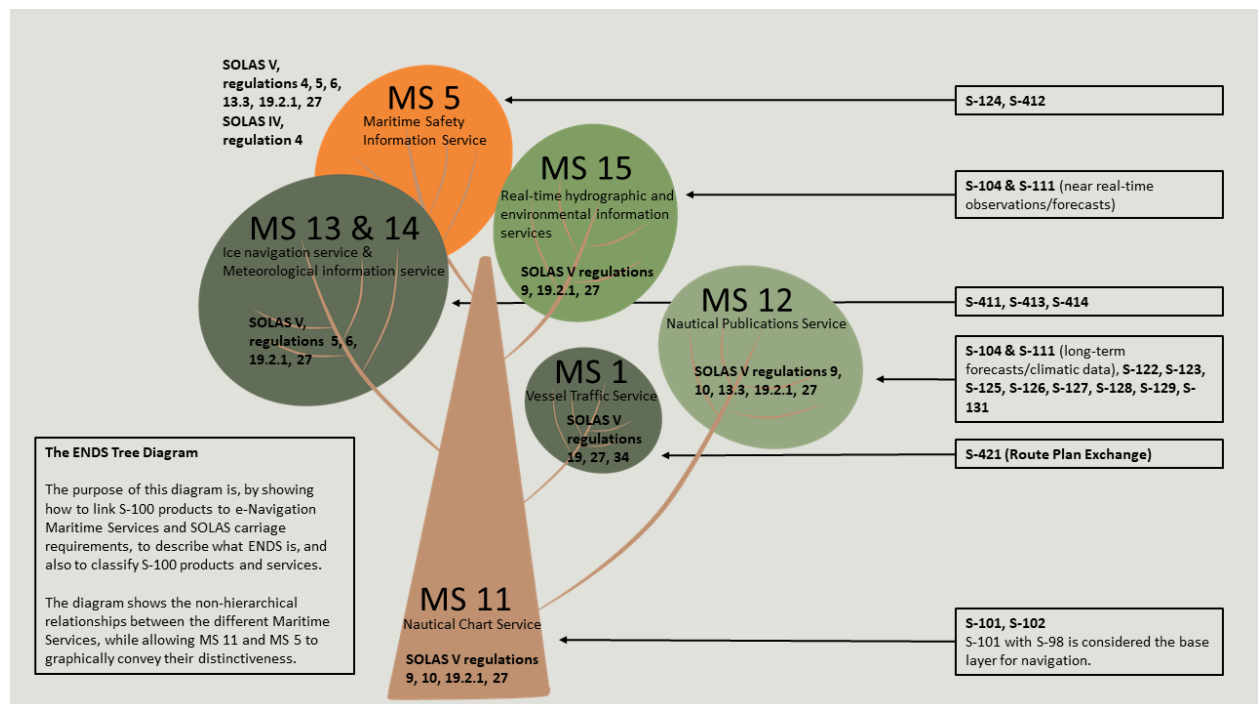


Figure 5; The ENDS Tree diagram illustrating the relationship between S-100 products, the IMO Maritime Services and the SOLAS Regulations. The ultimate goal is that these S-100 products, listed in the ENDS Tree Diagram, will support these Maritime Services and subsequently the mentioned SOLAS regulations.

14. HSSC-16 welcomed the kind offer from Canada and endorsed the proposal made to designate the St Lawrence River as an IHO Canada S-100 Sea Trial Area (2024-2025), along with the possibility to identify additional official sea trial areas around the world. In St Lawrence River all Phase 1 products will be made available, by Canada, for a limited test period per user. **HSSC invites the Council to agree upon St Lawrence River, and possibly additional sea trial areas, as a designated IHO Sea Trail Area for S-100.**
15. The HSSC ISO 9001 Cell has monitored the development of the product specification for ENC, S-101 during the last years. This close monitoring has proven to be a very useful tool to secure development according to the S-100 timeline. Since 2023 the ISO Cell is monitoring the development of the Interoperability standard, S-98, and the Test data standard, S-164. HSSC-16 agreed upon to expand the scope to also monitor the

development of the validation checks S-158 and the product specifications for Water Level, S-104, and Surface Currents, S-111 (HSSC 16/74 and 76). Following an input paper from UK and the proposal from Canada to establish a designated IHO Sea Trial Area for S-100 HSSC-16 agreed that the ISO Cell will work with applicable WGs/PTs to agree on more structured testing of S-100 to secure that we meet end user's expectations. See also figure 6 below.



Figure 6; Needs for building an agile validation strategy.

16. IMO MSC 106 agreed, in November 2022, on the revised IMO ECDIS Performance Standards MSC. 530(106) to include support for S-100. S-100 ECDIS will be legal to use after 1 January 2026 and from 1 January 2029 new systems must comply with the new IMO Resolution. In addition, MSC 108 agreed in May 2024, on the inclusion of an S-100/IEC standard, Route Plan S-421, for route exchange from ship to shore and from shore to ship into the IMO ECDIS Performance Standards. The amendment of the ECDIS Performance Standards also includes a standard for secure communication between ship and shore, IEC SECOM (63173-2). The inclusion of route exchange and the secure communication standard follows the same transition plan as S-100 ECDIS (2026 – 2029). Since S-100 ECDIS must be SECOM compatible it would also be practical to use SECOM for distribution of other applicable S-100 products.
17. Dissemination of S-100 data and the use of SECOM was discussed at HSSC-16 following an input paper from Germany and also in connection to its latest progress in IMO. Basically there are three areas of open questions;
  - 1) Who will distribute S-100 products? RENC/VAR for all S-100 products including “near real-time” products (e.g. S-104, S-111, S-124, S-412) or should some S-100 products be distributed by other data providers?
  - 2) Which technology should be used for distribution of the data? NAVDAT and VDES are mentioned for S-124, IP (Internet) connection will most likely be required for heavier S-100 datasets.
  - 3) How can we ensure that S-100 data is disseminated in a cyber-secure manner? Can SECOM be used for delivery of all S-100 products or do we need different interfaces for different services and products? Can or should the concept of the Maritime Connectivity Platform (MCP) be used?

It should be noted that these open questions need to be resolved in cooperation with other stakeholders and similar questions have been raised at the IMO MSC 108 meeting (MSC 108/12/5 by NZ). MSC tasked the following NCSR11 meeting in June 2024 to discuss the matter and also addressed S-100 issues raised by IHO in MSC 108/12/4. NCSR invites “interested MS to submit an urgent proposal for a relevant new output to address S-100 implementation matters to MSC 109”. IMO MS are also encouraged to share their



experience and results from testing and conducting trials of S-100 products and NCSR invited the HTW Sub-Committee to consider revision of model course 1.27 on Operational use of ECDIS as a consequence of the inclusion of S-100 in the IMO ECDIS Performance Standards. At HSSC-16 the Committee tasked NIPWG (lead)/S-100WG in liaison with WWNWS to consider the open questions raised by Germany on this matter and to recommend a way forward. WENDWG should also be an IHO body involved in these matters.

18. Partly in connection with the issue of data dissemination, the delivery of S-100 using SENC delivery was discussed at HSSC-16. The vast majority of IHO MS agreed that SENC delivery is not needed for S-100 and the Committee concluded that further testing should focus on determining if S-100 Part 15 is feasible for use for data distribution, ensuring that the digital signature is retained from the issuing data producer and verified in the end user system. HSSC tasked the S-100WG to report the testing result already at their next WG meeting in November 2024.
19. There were some items of particular interest beyond IHO S-100 Phase 1 implementation, including a discussion regarding the inclusion of S-401 Inland ENC in a future version of S-98. The HSSC agreed that a further discussion was needed to assist the Inland ENC Harmonization Group (IEHG) with a future solution for reconciling S-401 with S-98 or an inland version of S-98. HSSC also welcomed the participation and status update from WMO (World Meteorology Organization) on the development of the weather-related S-100 products, with first priority on S-412, Weather and Waves Warning which is a crucial part of the Maritime Safety Information (MSI).

#### ***Progresses in the development of the S-1xx Product Specifications***

20. The initial intention of the project teams for S-101, S-102 and S-129, under S-100WG, was that when the operational editions of the respective product specifications were finalized these project teams should have evolved to become part of permanent HSSC WG (S-100WG and ENCWG). However, HSSC-16 decided that these project teams should remain active until these products are fully operational and start to be used on the first S-100 ECDIS, which means at least until 2026.
21. As mentioned above, the development of the S-1xx product specifications is progressing more or less as expected. The updated detailed timeline for all planned S-1xx specifications is found in Annex 2 to the Roadmap for the S-100 Implementation Decade (2020 – 2030). The timeline now also includes two of the product specifications developed by WMO; S-411 Ice Information and S-412 Weather and Wave Hazards. It is expected that the Phase 1 Product Specifications will be approved in operational editions in December 2024. The next phase will be focusing on the product specifications for route planning, Phase 2. Four of these product specifications is expected to be ready for IHO MS approval in operational editions late 2025.

- S-122 Marine Protected Areas
- S-123 Marine Radio Services
- S-127 Marine Traffic Management
- S-131 Marine Harbour Infrastructure

22. HSSC15 (2023) approved the product specification for Polygonal Demarcations of Global Sea Areas, S-130 edition 1.0.0, for initial implementation, testing, evaluation and comprehensive evaluation by IHO MS. In accordance with the C-7 decision (C7/15) the S-130 PT is now testing this edition of S-130 by using test datasets from the Baltic Sea and the Southern Ocean which has shown that there is a need for a new edition of S-130 1.1.0. The plan is to present an operational edition of S-130 to HSSC-17 (2025). Further information on the development of S-130 is available in a separate paper C8-4.5A, submitted the Secretary-General of the IHO and Chair of HSSC.

#### ***Progress of the work plans (items outside S-100) of subordinate bodies***

23. Other work items outside the development of S-100 is progressing well within the HSSC working groups. An updated consolidated HSSC work plan is available at the IHO HSSC website (under Miscellaneous)<sup>3</sup>.
24. The MASS PT (Maritime Autonomous Surface Ships Project Team) has during the year engaged with the IMO Joint MSC/FAL/LEG Working Group on MASS. At HSSC-16 the PT proposed to reorganize the PT to a more permanent IHO Working Group. The Committee endorsed the proposed Terms of Reference for the MASSWG. Noting the strategic character of this new activity, HSSC agreed to submit the decision of the establishment of this possible MASSWG to the Council, including revised TORs. The draft TORs is available as Annex C to this report. **The Council is invited to consider the establishment of a MASS WG and if agreed upon approve the draft TORs.**
25. NIPWG has worked in close cooperation with the International Harbour Masters Association (IHMA) on the development of S-131 Marine Harbour Infrastructure. In this process IHMA has identified a need to provide guidelines to harbours to provide guidance to the implementation of an electronic and automated exchange of nautical data between ports, hydrographic services and back office services. For this purpose, IHMA has developed *“Guidelines for Harmonized Communication and Electronic Exchange of Nautical Data for Port Calls”*, which makes reference to applicable IHO standards. Specific focus is now on automated inputs from ports for ENC’s with a limited scope around the berth. The IHO logo is used in the IHMA Guideline, as supporting organization. **The Council is invited to note the cooperation between IHO and IHMA and the IHMA Guidelines for Harmonized Communication and Electronic Exchange of Nautical Data for Port Calls.**
26. HSSC-16 endorsed edition 2.0.0 of S-66 Facts about Electronic Charts and Carriages Requirements, which has been developed in cooperation between the Data Quality WG and the ENCWG. The content of S-66 and S-67 has been merged to this publication (S-66 2.0.0) and S-67 will be withdrawn. New sections are also included such as Port State Control, IHO ECDIS and ENC cyber security and Training. An IHO CL Letter is to be issued by the IHO Secretariat to seek approval from the IHO MS of edition 2.0.0 of S-66.
27. The ENCWG has been working on new editions of the Use of the Object Catalogue, an S-57 appendix, and the ENC Validation Checks, S-58. These new editions were presented at HSSC-16 and the Committee endorsed ed. 4.4.0 of S-57, Appendix B.1, Annex A – Use of the Object Catalogue and edition 8.0.0 of S-58 – ENC Validation Checks. An IHO CL Letter is to be issued by the IHO Secretariat to seek approval from the IHO MS.
28. The work of the Hydrographic Survey Working Group, HSWG, is progressing well and the WG presented a new edition of S-44, 6.2.0, Standards for Hydrographic Surveys at HSSC-16. This new edition of S-44 was endorsed and an IHO CL Letter is to be issued by the IHO Secretariat to seek approval from the IHO MS.
29. At HSSC-15, 2023, it was decided to reorganize the working group for the Hydrographic Dictionary, S-32, to a Correspondence Group. HSSC-16 approved the proposed new TORs for this Hydrographic Dictionary Correspondence Group (HDCG). The IHO website will be updated accordingly.

### **Miscellaneous**

30. In September, 9 – 13 September, IALA and IHO is arranging a joint workshop in Annapolis, US. The purpose is to gain a common understanding between the two organizations regarding the concepts and use of the S-100 framework to advance the development and delivery of e-Navigation maritime services. Current efforts will be examined with the goal to harmonize between IALA and IHO.

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<sup>3</sup> Work in progress at the date of this report.

31. As part of the CIRM report to HSSC-16 CIRM requested that IHO consider to define a retirement date for S-57. At this stage it was noted and no further actions were taken, but such a request should be taken into consideration for future strategic discussions.

***Next HSSC Meeting, HSSC16***

32. HSSC16 will take place in Stavanger, Norway 5 to 9 May 2024.

***Actions required of the Council***

- a) Note the Report
- b) Invite the Strategic Plan Review Working Group (SPRWG) of the IHO Council – establishment of which to be discussed at C8 – to consider the HSSC inputs to the IHO Strategic Plan 2027 – 2032 with the priority areas shown in figure 2 in this report
- c) Agree on the principles upon an interim establishment of the Centre 2025, followed by a permanent establishment to be decided by Assembly-4
- d) Confirm funding of a special project to integrate an online application function supporting the security scheme administration process in the IHO Portal
- e) Approve the revised S-100 timeline
- f) Approve the updated Dual Fuel Concept for S-100 ECDIS
- g) Agree upon the ENDS Diagram to be included in the S-100 Roadmap, Annex 2 and consider concrete actions in 2025 for the reinforcement of interactions with major stakeholders (e.g. IMO, IEC, S-100 ECDIS end-users, OEM, industry, distributors) in accordance with Annex 1
- h) Agree upon St Lawrence River, and possibly additional sea trial areas, as a designated IHO Sea Trail Area for S-100
- i) Consider the establishment of a MASS WG and if agreed upon approve the draft TORs
- j) Note the cooperation between IHO and IHMA and the IHMA Guidelines for Harmonized Communication and Electronic Exchange of Nautical Data for Port Calls
- k) Approve the HSSC work plan, including the analysis technical aspects and impact of new distribution concepts of S-100-based products
- l) Take any other action as it may consider appropriate