

2nd MEETING OF THE IHO COUNCIL

London, United Kingdom, 9-11 October 2018



REPORT¹ OF THE 10th MEETING OF THE IHO HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE

¹ Note : Action C1/06 states : « Considering the timelines between HSSC-10 and IRCC-10 meetings in 2018 and the countdown for submission of reports and proposals to C-2, the Council invited HSSC and IRCC Chairs to prepare their 2018 meeting minutes with the view that they will be used/submitted directly as reports and proposals to be considered at C-2. »

REPORT OF THE IHO HYDROGRAPHIC STANDARDS AND SERVICES COMMITTEE TO THE SECOND MEETING OF THE IHO COUNCIL

Introduction

1. This document reports on the progress of the on-going implementation of the Work Programme for 2018 that may be of interest to the Council or require actions.

Difficulties and challenges yet to be addressed

2. There is no significant change to the difficulties and challenges reported to A-1 apart from the shortened time window between HSSC-9 and HSSC-10. Most of the actions agreed in November 2017 at HSSC-9 have progressed normally.

Achievements/outputs/conclusions

Amendments of HSSC ToRs and RoPs

3. IHO Secretariat revised HSSC TORs and ROPs. HSSC endorsed the proposed amendments to the HSSC TORs. Main amendments to the current HSSC TORs and ROPs reflect:
 - The presence and the role of the Council;
 - The possibility for the HSSC to decide on the need to go through the Council for recommendations on standards and publications before submitting them to Member States for approval.

Progresses made on revising the Resolution 2/2007

4. HSSC 9/27 proposed the Resolution 2/2007 revision as a two phase procedure:
 - a) The first phase is the creation of an additional Annex that provides “Guidance on conduction of an Impact Study”. The draft Impact Study has been drafted with the contribution of all the WGs and now it has reached a consolidated structure. The Guidance on conduction of an Impact Study has been endorsed by the HSSC and is ready to be included as an Annex to the Resolution 2/2007.
 - b) The second phase is on the IHO Secretariat to develop the endorsement/approval procedure of the relevant standards by HSSC11, taking into account the role of the Council in the approval process.
5. The approach to new Publications and Product Specifications approval process has been facilitated through the identification of a new Review Cycle for WG/PT development phase of Product Specifications and a proposal that would divide the Appendix 1 in Resolution 2/2007 into two parts have been approved at HSSC10; the new Review Cycle has been endorsed with immediate effect by HSSC.

Review Cycle:

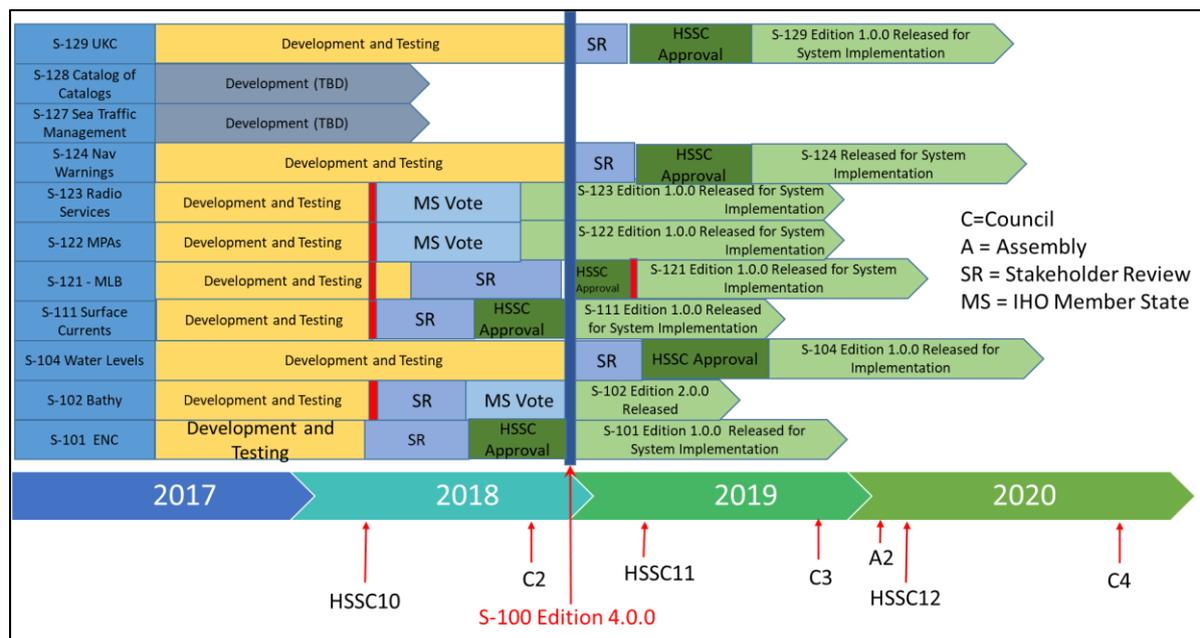
- a) Working Group would approve submission to HSSC if the specification was developed by a subordinate Project Team – if the project team was established directly under HSSC then the PT would submit directly to HSSC.
- b) Between edition 1.0.0 and edition 2.0.0 the working group has the authority to issue out 1.n.n – for clarifications and corrections that may have arisen during the implementation phase. The changes should be traceable either via a formal comment procedure or through an official proposal mechanism.
- c) When the WG/PT feels that the specification is ready to go to a 2.0.0 edition, it needs to follow the full process of IHO Resolution 2/2007 and conduct an impact assessment and obtain stakeholder feedback.
- d) S-100/S-99 already has an established structure for version control and the product specifications should continue to use it. When the version number changes then the issue date will also change and becomes part of the metadata record.

Appendix 1 “IHO Technical Standards that should be subject to the terms of Resolution”:

The proposal that would divide the Appendix 1 into two parts is aimed to identify which Standards and Publications (including Guidance) must follow the full process of IHO Resolution 2/2007 and which ones can be developed and maintained without following the full process.

Actions taken on the priorities of IHO 2018 Work Plan 2

6. Moving HSSC from November to May has shortened many HSSC WGs planned activities and has left them not enough time to accomplish all the tasks received during HSSC9. Anyway, all WGs performed a great effort to accomplish priority on IHO 2018 WP 2. HSSC and IHO Secretariat emphasized the needs to boost these activities in order to give effectiveness to all the projects established. On this perspective, for instance, a new simplified S-100 Master Plan to be reviewed annually and a notional S-100 Timeline for Product Specifications have been prepared by S100WG and endorsed by HSSC.



7. HSSC will issue a HSSC CL seeking endorsement by correspondence of Ed. 4.0.0 of S-100 and Ed. 2.0.0 of S-102 by HSSC Members. HSSC Members should reply/provide comments if any by the end of August. A CL to IHO Member States seeking their approval on these Standards is planned by October 2018.
8. HSSC endorsed the S-100 Product Specification Guidebook and agreed to include it within the S-100 work plan. HSSC assigned S-97 to the product specification guidebook.
9. HSSC endorsed S-122 Edition 1.0.0 and S-123 Edition 1.0.0; IHO Secretariat will issue a CL to seek MSs approval by August 2018.
10. HSSC agreed to the publication timeline of the following S100 based Prod Spec under the conditions proposed by the IHO Secretariat for the new Review Cycle for WG/PT Development Phase of Prod Specs that were also endorsed with immediate effect:
- S-101 Edition 1.0.0;
 - S-111 Edition 1.0.0;
 - S-121 Edition 1.0.0;
11. Develop an S-100 interoperability Specification

The development of an S-100 interoperability Specification is in progress. HSSC assigned number S-98, approved the title “S-98 Specification for Data Product Interoperability in S-100 Navigation Systems” and tasked S-100WG to consider how to incorporate generic interoperability into future editions of S-

100. The deadline for the presentation of S-98 has been established by HSSC11. S100WG has elaborated a first draft of S-98.

12. Develop all the components needed to make S-101 a reality

S-101 Edition 1.0.0 is planned to be published in December 2018 and a new edition every two years has been planned. The first edition will be used for test and evaluation trials by developers. In 2022, the third edition should be the operational edition. HSSC agreed to the publication timeline of S-101 Edition 1.0.0 under the conditions proposed by the IHO Secretariat for the new Review Cycle for WG/PT Development Phase of Prod Specs that was endorsed with immediate effect.

The following table describes more in detail the components and the timeline about S101 Prod Spec development:

Components	Edition 1.0.0 (2018)	Edition 2.0.0 (2020)	Edition 3.0.0 (2022)
Main Documentation	✓	✓	✓
Feature Catalogue	✓	✓	✓
Portrayal Catalogue	Partial	✓	✓
Validation	Partial	✓	✓
Data Classification and Encoding Guide	✓	✓	✓
Encoding Format	✓	✓	✓
Encryption		✓	✓
Alerts and Indications		✓	✓
Full Test Data Sets for Type approval		Partial	✓
Notes	Portrayal will be limited to S-52 rules translated to LUA	Edition 2.0.0 refines all the additional rules	Operational Edition

13. Develop S-121 Product Spec for Maritime Limits and Boundaries

S-121 communicates official representations of maritime limits and boundaries to the international community. The S-121 Project Team, under S-100WG umbrella, finalized the draft of S-121 Product Spec and indicated that it was extremely pleased with the progress in the development of the standard. HSSC agreed to the publication timeline of S-121 Edition 1.0.0 under the conditions proposed by the IHO Secretariat for the new Review Cycle for WG/PT Development Phase of Prod Specs that were also endorsed with immediate effect. S-121 Edition 1.0.0 is planned to be published in March 2019 (After S100WG4).

14. Consider data quality aspects in an appropriate and harmonized way for all S-100 based product spec

HSSC considers data quality aspects paramount. For this reason, DQWG has been reinvigorated through the approval of new TORs which consider and ensure that data quality aspects are addressed in an appropriate and harmonized way for all S-100 based Product Specifications. DQWG has to:

- a) develop and maintain a data quality checklist for product specification developers;
- b) periodically review S-100 based product specifications;
- c) monitor periodically developments of ISO and other international standards regarding quality information, and advise the S-100WG accordingly;
- d) provide guidance on data quality aspects to Hydrographic Offices;

A data quality checklist for product specification developers has been developed and will be maintained. The checklist will be included in the S-100 Product Specification Guidebook (S-97). HSSC agreed that the level of authority of the Data Quality Checklist for Product Specifications is a recommendation, which can be adapted as necessary by WGs, under the condition that it will not create any potential interoperability issue. The development of a Minimum Standard for Data Validation will be completed in 2020. A guidance on data quality aspects to Hydrographic Offices, in particular to ensure harmonized implementation, will be provided in 2019.

15. Prepare Ed. 6.0.0 of S-44

The preparation of Ed. 6.0.0 of S-44 represents the main task of HSPT. In order to have the widest and most complete contribution on this delicate matter, a questionnaire has been circulated to the members of the International Hydrographic Community from mid-August to the end of November 2017. The questionnaire covered a wide range of topics related to hydrographic survey standards and was designed by HSPT and administrated by IFHS. Answers to the questionnaire identified the need of guidelines for survey verification and relative systems capabilities, and for other activities (backscatter, water column data), including also the use of crowdsourced bathymetric data in the future. HSPT is tasked to continue its work following the course of actions submitted at HSSC-9, with the view of submitting a draft 6th Edition of S-44 for endorsement in 2019.

16. Consolidation and clarification of standards in relation to ECDIS/ENC

HSSC endorsed Ed. 6.1.0 of S-58 and a CL to IHO Member States seeking their approval has been issued. The date of entry into force of the Ed. 6.1.0 of S-58 (+12 months after the approval) will be promulgated by an IHO CL.

ENCWG is working to identify the individual components in S-57 (file size, etc.) that prevent ENC Producers from providing high density contour lines (Target Date HSSC11).

HSSC tasked the ENCWG to liaise with the CIRM and IEC for further investigations and risk assessment before considering the need for updating S-63 for improved security, in particular the need to ensure authentication of all files which are included into the data set.

17. Develop initial guidance on definition and harmonization of Maritime Service Portfolios

With the intention to reduce the risk of misinterpretation, the first HGDM meeting proposed to rename Maritime Service Portfolios into Marine Services. A set of marine services will form a Maritime Service Portfolio. Following Marine Services have been identified as relevant for the IHO:

- No. 5 - Maritime Safety Information Service (MSI),
- No. 11 - Nautical Chart Service,
- No. 12 - Nautical Publications Service and
- No. 15 - Real-time hydrographic and environmental information Service

This proposal has been adopted by NCSR5. HSSC tasked NIPWG to coordinate the provision of the Marine Services definition under IHO remit. These definitions should be based on the HGDM template.

HSSC invited IHO Member States to consider their attendance to the forthcoming HGDM meeting.

Top-3 work items of the proposed work plans for 2019-20

18. The list of the top-3 work items of HSSC WG/PTs proposed work plans for 2019-2020 (the highest strategic priorities) is presented in Annex D to the attention of C-2 for consideration and possible monitoring.

Annual list of prioritized work items of the proposed work plans for 2019-2020, the development of which needs to be supported by the Special Project fund

19. HSSC confirmed the need of dedicated funds for 2019-2020 Special Projects and requested WGs to provide a prioritized list of work items for the proposed work plans for 2019-2020 that need to be supported by the Special Project fund **in 2019**.

Priority	Work item	Budget* (in €)	Performance Period (in months)
1	Incremental updates of S-100 GML datasets	20K	3-6
2	Experimental production tool and viewer on the web	40K	6-9
3	Prototyping system for vector S-100-based data	42K	6-9

*Travel expenses, if any, additional

20. The following is a brief description of the work items of the proposed work plans for 2019-2020 that need to be supported by the Special Project fund:

Incremental updates of S-100 GML datasets:

Background:

S-100 Edition 3.0.0 includes a data format based on GML (ISO 19136). Since GML does not define a special format for incremental updates, neither does S-100 Edition 3.0.0. The default assumption is therefore that an update will consist of replacing entire datasets. The "whole-dataset" approach may be unsuitable for several planned data products due to potential high data volumes. Incremental updates of GML datasets were discussed at the S-100WG TSM5 in September 2017 and are tentatively described in S-122 and S-123.

Statement of Work:

It is necessary to refine, test and evaluate the possible approaches to incremental updates for GML datasets, and select the most suitable methods taking various considerations into account, such as the characteristics and usage scenarios of specific data products as well as data volume and data production issues. Testing would probably have to involve selected national HOs, and should be done in the context of a realistic, broader-purpose testbed, such as practical exercises with a radiocommunication equipment and is expected to be a significant task due to the need for a realistic volume of test data.

Experimental production tool and viewer on the web

Background:

Member states should be enabled to investigate how their Product Specification ideas could be used and if the deliverables are in-line with the expectations.

This will allow the HOs to make some production trials using (testing) of the developed data models. The use of UML models and the generation of all Product Specification components will not be necessary.

Statement of Work:

The contractor should develop an experimental production tool and viewer for S-100 based product specification development on the web.

Prototyping system for vector S-100-based data

Background:

A generally-available tool would facilitate better understanding, more creation of data samples, and wider testing of product specifications. It is proposed to generalize a previously prototyped Web-based data editor for S-201 into a toolkit which can be used to rapidly set up a data editor and data exchange site for new S-100-based vector product specifications.

Statement of Work:

The contractor shall develop a general-purpose toolkit that can be used for rapid setup of web application(s) for dataset and exchange set creation for S-100 vector product specifications. The toolkit shall be designed so that functionality for a new product specification (or new version) can be added with minimal customization (e.g., setting up a separate database, new URL, etc.).

Strategic discussion on future provision of Products based on S-100

21. Considering that various Prod Spec development matures, HSSC endorsed the initiation of discussions on the future provision of Products based on S-100. It is a position of the Committee that such discussion should be brought to the Council's attention in order to stimulate actions aimed to consolidate a common position that covers all IHO interests (HSSC, IRCC and stakeholders). For this reason, HSSC/IRCC/IHO Secretary General have prepared a joint paper on this subject that will be submitted to the Council separately (Doc. C2-4.3 refers).

Actions required of the Council

22. The Council is invited to:
- a) Note the report;
 - b) Endorse the revision process of IHO Resolution 2/2007:
 - New Review Cycle for WG/PT Development Phase of Prod Specs (**Annex A1**)
 - Guidance on conduction of an Impact Study (**Annex A2**);
 - c) Endorse the amendments to the HSSC TORs (**Annex B**, red-line and clean versions);
 - d) Approve the current HSSC key priorities of the IHO Work Programme (as decided at C-1) with the amendments suggested for 2019-2020 (**Annex C**, red-line);
 - e) Approve the request for the use (from 2019) of the IHO Fund for Special Projects for the work items listed in **Paragraph 19** of this report;
 - f) Note the list of the top-3 work items of *HSSC WG/PTs* proposed work plans for 2019-2020 (**Annex D**);
 - g) Take any other action as it may consider appropriate.