

REPORT OF THE IHO COUNCIL

(Version 2.1, dated 3 April 2023)

Chair: Dr. Geneviève BÉCHARD Canada
Vice-Chair: THAI LOW Ying-Huang Singapore

Membership (*IHO Member States having a seat at the Council 2020 - 2022*):

Argentina, Australia, Brazil, Canada, China, Cyprus, Finland, France, Germany, Greece, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Korea (Rep. of), Malta, Netherlands, Norway, Oman, Peru, Portugal, Russian Federation, Singapore, South Africa, Spain, Sweden, Thailand, United Kingdom, United States of America.

Meetings:

4 th meeting (C-4) video teleconference	19 November 2020
5 th meeting (C-5) hybrid virtual/in person, Monaco	19 – 21 October 2021
6 th meeting (C-6) IHO Secretariat, Monaco	18 – 20 October 2022

Foreword from the Chair

1. It is my honor to report to Assembly 3 (A-3) on the activities of the second triennium of the International Hydrographic Organization (IHO) Council. This report is in accordance with Article VI (g) of the Convention of the IHO which identifies a ‘Report to the Assembly at each ordinary session on the work of the Organization’, as one of the functions of Council.
2. For more than two years the activities of this Council were cast against the backdrop of the Covid-19 pandemic. The 2nd IHO Assembly and the 4th meeting of the IHO Council, which launched this triennium, were virtual and abbreviated. During this period we had to learn to work differently and this will continue to influence how we work for years to come. In one way we became closer as we learned to work virtually. As VTCs became more commonplace IHO bodies benefitted from supplementary meetings that could be easily arranged and executed. In another way, however, it became clear that we are most productive to address strategic issues when we are working together and in-person. This was evident when the 5th meeting was in hybrid virtual/in-person format, we were finally able to meet in person for the 6th meeting of the IHO Council.
3. The main reference for Council activities in the inter-assembly period have been the A-2 Decisions allocated to the Council. Despite the covid pandemic, Council has made significant progress on the items it was tasked by Assembly. Two key objectives I would like to highlight are 1) “the effective implementation of the revised Strategic Plan” and 2) the launch of the decade of implementation of delivery of S-100 services.
4. During the course of its business the Council produced a number of decisions leading to concrete directions for action by the Secretariat, HSSC and IRCC. Further details of the work of the subordinate bodies and the Secretariat will be presented by the Secretary-General and the Committee chairs in the course of the Assembly’s Agenda. The detailed review of the Work Programme items addressed at C-6 resulted in several proposals, which are now brought forward to the Assembly for consideration and subsequent approval by means of this and the respective Secretary-General’s, HSSC Chair and IRCC Chair presentations.

5. The reports you will read and hear at A-3 will all highlight the rapid changes taking place in the IHO domain. The pace of these changes will challenge the Organization and the Member States themselves. I am confident, however, that together and with a focus of our energies, these challenges can be met and overcome.

Outcome of the Decisions and Tasks from A-2 allocated to the Council

Outcome of Decisions and Tasks from A-2 allocated to, or monitored by the Council			
D A2/7	Amendments to IHO Resolution 1/2020 –Gender-Inclusive Language	Submitted to A-3 for Approval	A-3 PRO 1.3
D A2/8	Update on the Joint IHO-Singapore Laboratory – Proposals from the Council to the Governing Board	Permanent	HSSC Report
D A2/2 & D A2/9	Amendments to General Regulations, Art. 8.e – Membership of the HCA	Submitted to A-3 for Approval	A-3 PRO 3.1
D A2/12	Application of ISO 9001 Principles	In progress	HSSC Report IRCC Report
D A2/14	Way forward on the definition of hydrographic interest	On hold	CC Report
D A2/20	Appropriateness and applicability of the new Strategic Performance Indicators	In progress	CC Report HSSC Report IRCC Report A-3 PRO 1.2
D A2/25	Update on the implementation of A2/PRO1.9 on the future of S-23	In progress	SG update on S-130PT A-3 PRO 1.6
D A2/27 & D A2/28	Future of the paper chart	In progress	CC Report HSSC Report
D A2/30 & D A2/31	Roadmap for the S-100 Implementation Decade	Permanent	CC Report, HSSC Report, IRCC Report
D A2/32	New IHO Resolution relevant for the S-100 Implementation	Completed	HSSC Report A-3 PRO 1.1
D A2/33	Dual-Fuel Concept to enable the transition from S-57 to S-101 ENCs	In progress	HSSC Report A-3 PRO 2.1
D A2/35, D A2/36 & D A2/39	Update on the Empowering Women in Hydrography, a work item of the CBSC Work Programme	In progress	CC Report IRCC Report
D A2/42	Update on the establishment of a IHO e-Learning Center	In progress	CC Report IRCC Report

Overview of Council Proposals to A-3 derived from tasks allocated to the Council since A-2

Pro Number	Object of the Proposal	Reference to A-2 Decision
A-3 PRO 1.1	New IHO Resolution on S-100 Implementation	D A2/32
A-3 PRO 1.2	Implementation and review of the Strategic Plan	D A2/20
A-3 PRO 1.3	Amendments to IHO Resolution 1/2020 –Gender-Inclusive Language	D A2/7
A-3 PRO 1.4	3-year Work Programme and Budget 2024-2026	
A-3 PRO 2.1	Dual-Fuel Concept for S-100 ECDIS	D A2/33
A-3 PRO 3.1	Amendments to General Regulations, Art. 8.e – Membership of the HCA	D A2/9
A-3 PRO 3.2	Revised Capacity Building Strategy	

S-100 Roadmap & Implementation Strategy A-3 PRO 1.1, A-3 PRO 1.2 & A-3 PRO 2.1

6. The Council endorsed the HSSC proposal for an overarching IHO Resolution on S-100, embracing concepts and pathways depicted in the Roadmap for the S-100 Implementation Decade (2020 – 2030) and with reference to the IMO Resolution on Performance Standards for ECDIS and the in force dates agreed upon. The proposed new IHO Resolution addresses the collaboration with IMO and other liaising Organizations, timelines for the implementation of the S-100 framework by application of the WEND-100 Principles and the Dual Fuel Concept for S-100 ECDIS. Given the IMO decisions, it is critical that IHO MS understand that adequate S-101 ENC coverage and appropriate complementary S-100 data/products services are expected when S-100 ECDIS becomes operational in 2026.
7. The S-100 Implementation Roadmap was amended by two new elements: An appendix to Annex 3 which will be the ‘Guidelines on the Implementation of the WEND-100 Principles ver 1.0; and, The Dual Fuel Concept for S-100 ECDIS Executive Summary document which will be added as Annex 4 (the full report will be an appendix to Annex 4), upon Assembly approval. The latter document is focused on capturing in a single resource 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. Its application delivers a clear rationale for dual-fuel mode during the transition phase, the essential elements it requires from all partners within the data chain, and any gaps still existing within the standards and supporting framework. In addition to the Dual Fuel Concept for S-100 ECDIS other activities are in force within HSSC, the IHO-Singapore Technology Lab and the RENCs to support the transition from S-57 to S-101 ENCs. HSSC has also, in accordance with A-2/33, developed a synoptic diagram on various options for HOs for parallel production of S-101 and S-57 ENCs. The synoptic diagram is included in Annex 2 to the S-100 Implementation Roadmap.
8. The Council endorsed the strategic change in S-100 ECDIS with the term Electronic Navigational Data Services (ENDS) being used to describe the multiple interacting navigational data layers which can be employed by an S-100 ECDIS. The integration of these layers on the ECDIS is enabled by the Interoperability Specification S-98. The S-101 ENC remains the navigational base layer.

Implementation and review of the Strategic Plan (IHO Resolution 12/2002 as amended) A-3 PRO 1.2

9. Significant progress was made towards the 2020-2026 goals of the Strategic Plan. In order to measure success, a set of Strategic Performance Indicators was developed and applied to the respective work programme items associated to targets. This was greatly aided by two IRCC-led workshops during which experiences on the application of the Strategic Performance Indicators were shared and practical approaches to improving them were discussed. Work is ongoing since further refinements of the Strategic Performance Indicators are required. Many Regional Hydrographic Commission (RHCs) have done a gap analysis exercise, developed by the South-West Pacific Hydrographic Commission (SWPHC), to measure the difference between the targets of the Strategic Plan and the current situation. Periodically repeating this exercise will allow RHCs to track progress towards the targets.
10. The current Strategic Plan, designed for the rolling period 2021 – 2026, shall be reviewed at each ordinary session of the Assembly. The Council, tasked to provide input for this review, recommends to continue with the Strategic Plan in place for 2021–2026 with a priority and a selected focus on Goal 1, given the S-100 Implementation Roadmap and decisions taken within IMO on S-100 ECDIS. Noting the implementation of the Strategic Performance Indicators is in progress for all three Work Programmes, the Council proposes to continue to measure the effectiveness and the efficiency of the implementation of the three Work Programmes by means of the Strategic Performance Indicators as endorsed by the Council. Subsequently, it aims to deliver a comprehensive assessment of the efficiency of IHO activities in support of the drafting process of the Strategic Plan 2027 – 2032, The Council proposes to be tasked with the development of the next Strategic Plan to be put in place for 2027 – 2032 in compliance with the Planning Cycle.
11. The Council Chair, in liaison with Secretary-General (WP1), HSSC Chair (WP2), and IRCC Chair (WP3) will report on the Status Report on Performance Monitoring available as Annex B to the IHO Annual Report (Publication P-7) at A-3, on the basis of the IHO Annual Report 2022.
12. The Council noted the decisions of IMO with respect to revisions of the ECDIS Guidance for Good Practice and the ECDIS Performance Standard (IHO CL 31/2022 refers) and took note of the associated IHO commitments made towards the IMO and the IEC in particular. Of particular note is the intended timeline for S-100 ECDIS. Rapidly growing S-101 ENC coverage and appropriate complementary S-100 data/products services is now expected when S-100 ECDIS becomes operational. In order to meet these expectations, it is now of strategic importance to facilitate IHO Member States and wider stakeholders to actively support the development of S-101 and other S-1xx Product Specifications. As a consequence it is proposed that the implementation of Work Programme 2024 – 2026 should focus on activities in support of Goal 1 and its targets.
13. An important means for the creation and maintenance of S-100 derivative services is a matured MSDI infrastructure. The Strategic Plan addresses this under Goal 2 / Target 2.1 to “Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI)”. The anticipated solution so far was to build up a dedicated IHO web page which serves as a gateway to the respective national MSDI infrastructure of Member States. This concept has turned out to be impractical as it is not possible for the Secretariat to ensure that all the content in all the national MSDIs is current and up-to-date. Instead of referencing individual national MSDIs, it is proposed to focus on

global thematic layers of information which are genuine to the IHO scope such as those which are already provided under IHO online catalogues.

Amendments to IHO Resolution 1/2020 –Gender-Inclusive Language A-3 PRO 1.3

14. A-2 tasked the Secretary-General to conduct a comprehensive review of the IHO Basic Documents and Resolutions with respect to the use of gender-inclusive language. He was further directed to adopt the UN Guidelines on Gender-inclusive Language, to provide draft revisions of IHO Publications M-1 and M-3, and to monitor the IHO's progress towards the implementation of these Guidelines to all IHO documentation and communications. Based on the Secretary-General's report on the subject to C-5 (Reference B refers), the Council agreed that to the greatest extent possible, the updating of gender references in existing IHO documents will take place in conjunction with other edits and revisions which have been received as proposals from IHO bodies. That is, there will be no systematic updating of all IHO documents for the single purpose of addressing gender language issues. The Council also agreed that guiding principles on gender-inclusive language, once approved, will apply to all new IHO documents and communications. An amendment to IHO Resolution 1/2020 Gender-inclusive language has been proposed. This will be applied as part of the regular drafting and revision process.

Amendments to General Regulations, Art. 8.e – Membership of the HCA A-3 PRO 3.1

15. In 2020, IHO Member States approved new amendments to IHO Resolution 2/1997 – Establishment of Regional Hydrographic Commissions (RHC). The HCA subsequently revised its Statutes to ensure a better alignment with the Antarctic Treaty System (ATS), the IHO Resolution 2/1997 as amended; and the IHO Strategic Plan goals and objectives. The IHO Strategic Plan has recognized the broader user community of the data, products and services beyond IHO's traditional Safety of Navigation customers. The current wording of Art. 8.e of the General Regulations of the IHO, limits full HCA Member status to nations who "...contribute to the IHO INT Chart coverage of Region M" specifically. With the changing data and user environment, and the shift from paper to digital services, including ENCs and other future S-xxx products, the Council proposes that this limitation should be modified to allow HCA participation by IHO Member States more broadly.

Revised Capacity Building Strategy A-3 PRO 3.2

16. Capacity Building in hydrography is a core strategic issue within the IHO. The Capacity Building Subcommittee was tasked by the IRCC to revise the Capacity Building Strategy to better align it with the IHO Strategic Plan. Part of the revision was an expansion of the categorization of phases of development by including a phase 0 on hydrographic governance, and to add a fifth step to the process on awareness; assessment; analysis; and action to address Measures of Effectiveness (MoE). The deliberations of the Council have also raised the importance of considering the transition to S-100 knowledge and applicability in the capacity building efforts.
17. Related, the IHO Assembly is invited by Council to take note of the recent stagnation in internal IHO capacity building funding and welcomes its suggestions for approaches that could reaffirm and strengthen the IHO commitment to capacity building through increased and/or more stable funding.

3-year Work Programme and Budget 2024-2026 A-3 PRO 1.4

18. The Council endorsed the proposed 3-year Work Programme and Budget provided by the Secretary-General and submits it now for Assembly Approval. The Council endorsed the

recommendation by HSSC by which Goal 1 and its Targets in the IHO Strategic Plan should have the highest priority in the conduct of the 2024 – 2026 Work Programme.

19. The Council unanimously supported the recommendation made by the Secretary-General to request A-3 renew Council's entitlement (see Decision A2/50), to have the option to impose up to a 3% increase of the Member States contribution share between 2024 and 2026, subject to the Council's annual budget review, with 2024 being the earliest this could be considered.

Future of the Paper Nautical Chart (Decision A2/27&28)

20. The Council noted the recommendations made by HSSC on the automated production of paper charts and confirmed its support for the work plan item to develop guidelines and a baseline symbology for the automated production of paper charts, which will meet S-41 chart minimum content requirements, from S-101 ENC data. As part of this discussion, the Council endorsed the offer of the US (supported by AU, DE, DK, KR, and NZ) to document use cases and develop associated guidelines, as well as identify challenges with S-4, to achieve automated production of derived paper charts from ENC content databases and submit them to the HSSC/NCWG for their consideration under their respective Work Programme item.

Way forward for the definition of hydrographic interest (Decision A2/14)

21. The Council at C-4 invited parties interested in the development of a revised definition of hydrographic interest, to consider IHC17 outcome, A-2 PRO1.4 and A-2 PRO 1.5, and return to C-5 or C-6 with a single consolidated proposal for possible consideration at A-3. After informal discussions between the interested Members, it has been agreed that more work was needed on a possible revision of the definition of hydrographic interest, if possible with the participation of more countries. Since the present Council was dissolved at the end of C-6, the agenda item was closed with the suggestion that it be taken up again by the next Council at some point in the future, when more detailed solutions have been developed. The Council therefore recommends that this topic is put on hold until interested parties work out a mature proposal for a revised definition.

IHO e-Learning Centre

22. With significant support from the Korea Hydrographic and Oceanographic Agency (KHOA) the IHO e-learning Centre has been established. KHOA has stood up and hosts an e-learning portal. With the assistance of the e-learning Project Team (ELPT), there is continued development in the functionality and the content of the portal. Membership in the PT includes representatives from regional hydrographic commissions, Member States, the IBSC, the IHO Secretariat, and the Republic of Korea. Council appealed for Member States in possession of suitable e-learning material to share it through the centre. The Council continues to monitor the progress made by IRCC to establish an IHO e-Learning Centre based on A-2 PRO 3.3, A2/42, and the related recommendations of IRCC/CSBC (C6/27).

IHO Empowering Women in Hydrography Project

23. The IHO applied for, and received 3-year funding for an Empowering Women in Hydrography (EWH) project under Fisheries and Oceans Canada's Ecosystems and Oceans Science Contribution Framework. The goal of the project is to initiate, organize and track a series of activities and initiatives which will enable more women to participate equitably in the field of hydrography and to assume more leadership roles within the hydrographic community.

¹ S-4 is already a standard for « minimum » chart content.

24. In addition to the IHO's Project Team and Canada's seed funding, the project has attracted monetary and in-kind contributions from other sources. Member States are encouraged to consider participating in the project either by supporting staff participation in the activities or through other means of contributions. Further details on the EWH project, including project activities and initiatives around the world, can be found on the Empowering Women in Hydrography web page by clicking [here](#).
25. The Council will continue to monitor the progress made by IRCC/CBSC on this project.

Recommendations and call for directions

26. The Council recommends the Assembly
 - a) adopt the listed seven proposals after their separate detailed presentation under the respective Work Programme reports, namely:
 - New IHO Resolution on S-100 Implementation
 - Implementation and review of the Strategic Plan
 - Amendments to IHO Resolution 1/2020 –Gender-Inclusive Language
 - 3-year Work Programme and Budget 2024-2026
 - Dual-Fuel Concept for S-100 ECDIS
 - Amendments to General Regulations, Art. 8.e – Membership of the HCA
 - Revised Capacity Building Strategy
 - b) adopt the implementation of S-100 Roadmap as a main theme and a priority within the IHO Strategic Plan until Assembly 4 (A-4);
 - c) take note of the HSSC directions supported by the Council as related to the future of nautical paper charts;
 - d) consider the Council Chair recommendations on the way forward for the definition of hydrographic interest;
 - e) and seeks Assembly input, guidance and directions for the forthcoming Council period as Assembly deems appropriate.

Conclusion

27. As we look ahead to the next Council and the period of 2023-2026, here are some items for consideration:
- i. the IHO needs to make the transition to S100, and in particular from S57 to S101 a priority for 2023-2026;
 - ii With 2026 around the corner, we need to prepare for and communicate the world-wide picture of dual fuel ENC provision.
 - iii As a community, we need to ensure no Member State is left behind.
 - iv. Capacity Building remains a priority and a mixture of existing and new tools and approaches are available to support the transition of our community to S100 services. Insufficient funding for Capacity Building remains a concern and we will need to be creative.
 - v. The future of the paper chart will continue to be a topic of interest.
 - vi. The deliberations of C-6 started us on a path to explore collaboration with our colleagues in oceanography on the delivery of S100 services and to start thinking of how hydrography can underpin the digital twin of the ocean to support a wide range of users.
28. In closing I am proud of the accomplishments this Council, which were achieved during extraordinary times, and I am equally proud of the cordial and collaborative manner in which this Council conducted itself. As has now been the tradition for 6 years, both Council Members as well as other IHO Member States attending as Council as Observers have together contributed positively to our work. This atmosphere, established during the first triennium, carried us through as we changed how we needed to work at a time of change. That said, the function of the Council is not possible without the active participation of Member States and the support of the IHO Secretariat and many others. In particular I would like to express my appreciation to our Secretary-General, Dr Mathias Jonas, Directors Abri Kampfer and Luigi Sinapi, Thomas Dehling c/IRCC, Magnus Wallhagen c/HSSC, and finally, to Assistant Director Yves Guillam who has been the glue to hold the whole operation of the Council together.

Annex 1 [Summary Report Council-1 \(C-4\)](#)

Annex 2 [Summary Report Council-2 \(C-5\)](#)

Annex 3 [Summary Report Council-3 \(C-6\)](#)