

MEDITERRANEAN AND BLACK SEAS HYDROGRAPHIC COMMISSION
24TH MEETING, 2-4 JULY 2024, COSTANTA (ROMANIA)
Report of the IHO Secretariat

Submitted by: IHO Secretariat

Executive Summary: This paper reports on activities of the IHO Secretariat that may impact the work of the Mediterranean and Black Seas Hydrographic Commission.

Status of Membership of the IHO

1. IHO membership now stands at 100, following the adhesion of Albania in May 2022, Cabo Verde in November 2023 and Kiribati in May 2024 as 100th IHO Member (cfr. IHO CL 24/2024). Serbia and Syria remain suspended from Member States rights. One of the main changes resulting from the entry into force of the revised IHO Convention is that, for States wishing to join the IHO that are already Member States of the United Nations, there is no requirement to seek the approval of existing Member States of the IHO.
2. In the MBSHC, contacts are being made by the IHO Secretariat with Libya and Israel as Mediterranean coastal States not yet Members of the IHO.
3. **Recommendation:** *MBSHC is invited to support the process of adhesion of Libya and Israel to the IHO.*

Outcomes of the 7th Meeting of the IHO Council and actions taken following the latest HSSC16 and IRCC16 meetings (see attached HSSC16 Bulletin Report in Annex A and IRCC16 Bulletin Report in Annex B)

4. The following are the main outcomes of the 7th Meeting of the IHO Council:
 - S-100 Infrastructure and Standards Development (C7/09): Set up a sustainable technical and administrative infrastructure around S-100 including standards development to meet the S-100 timeline.
Action taken: Within the HSSC, an Infrastructure Centre Establishment Project Team's (ICE PT) was created. The name of the centre was agreed as "*IHO Infrastructure Centre*" and along with the general roles and responsibilities of the Centre, a timeline was agreed on for implementation, to be presented to Council. Importantly, the ICE PT was tasked to start analysing the IHO Resolutions in M3 to see how they might need to be adjusted, and it was also recognized that the IHO Security Scheme will need to be an integral part of the Centre's responsibility. The Committee agreed that the location of the Centre will be in the Republic of Korea, likely in Busan or Incheon.
 - Champion of Hydrography Award (C7/16): IHO CL 19/2024 - Adoption of the IHO Resolution - *The Ex Abyssis ad Alta - IHO Award for hydrographic excellence.*
Action taken: With CL 29/2024, the IHO Secretariat convened the *Ex Abyssis ad Alta* Award Board in accordance with the procedures outlined in the Resolution and agreed unanimously on the selection of Yves GUILLAM, IHO Assistant Director.
 - IRCC to establish a Project Team on Fund Generation of IHO' Project Initiatives under the IRCC (C7/22).
Action taken: IHO CL 42/2023 and IHO CL 16/2024 announced the creation of the Project Team and its composition respectfully. Two meetings were held, Chair and Vice Chair were nominated. The initial focus for the PT will be to develop a prioritised list of activities and seek review from IRCC and HSSC to validate this list, focus will then shift to the identification

of opportunities for recurring funding based on two scopes, *Scope 1 – existing and short-term options* and *Scope 2 – long term strategic options*. The Terms of Reference of the PT were adjusted and approved by IRCC.

- Gender Balance in Hydrography (C7/24): A follow-up to the successful Empowering Women in Hydrography (EWH) Project.

Action taken: At IRCC16, a Scoping Team consisting of HOs plus representative/s from the IHO Directing Committee was established, to prepare the regulatory framework for a continued activity on this human resource theme embedded in the capacity building programme through a proposal for an IHO Resolution and draft the Terms of Reference (ToR) for a future Project Team by C-8.

- IRCC Workshops on IBSC and CSBWG (C7/25).

Action taken: With IHO CL 14/2024, an IRCC Workshop on CSB on 26 April 2024 was announced. The Workshop was organised and hosted by members of the CSBWG and the IHO Secretariat on 26 April 2024, drawing 107 participants from over 50 coastal states. The workshop reiterated the value of this type of engagement and highlighted those previous modes of communication around the various aspects of CSB had not always been clear. At IRCC16, it was decided that the IRCC Workshop on IBSC will be held in the second semester of 2024 (tentatively in the month of September).

- Update on the Joint IHO-Singapore Innovation and Technology Laboratory (C7/29): Projects on S-131 Marine Harbour Infrastructure Database (MHID) - Development of S-57 to S-101 Conversion Guidance Document - Creation and Test-Bedding of ECDIS capable of displaying S-102 (Phase 1) and S104 (Phase 2) on S-101 ENCs.

Action taken: At HSSC16, the Joint IHO-Singapore Innovation and Technology Laboratory presented progress on all of its current projects with notable successes with S-57-101 conversion guidance, and testing S-102 and 104 and sea trials with S-124 and S-125. The Lab also presented future projects including the testing and operation of the dual fuel ENCs (S-57/S-101) datasets along major international shipping routes and the integration of sea and land datums to monitor sea level rise.

- Strategic Plan 2021-2026 (C7/36 – C7/38): The current structure is still relevant at conceptual level (vision, goals, etc.), and agreed that the objective for the next SP 2027-2032 should be limited to a revision of the current SP, welcomed the offer from the Council Vice-Chair, to lead a correspondence group on the ways and means to prepare the next IHO Strategic Plan 2027-2032.

Action taken: More in the session dedicated to the IHO Strategic Plan.

- IHO Resolution Guidelines for Making IHO Events More Inclusive (C7/40): an initial proposal for an *IHO Resolution Guidelines for Making IHO Events More Inclusive* (title to be confirmed) to be prepared by an ad hoc drafting group (AU, CL, FJ, NZ, SG, GB, US...).

Action taken: With IHO CL 28/2024, a survey questionnaire aiming to provide a comprehensive picture of the requirements and preferences of the Member States, Committees, Working Groups, Regional Hydrographic Commissions, and IHO Secretariat and to increase participation in activities of IHO bodies, was issued. IHO member states are kindly invited to participate in the survey and use the following QR code to respond no later than 31 August 2024.

- S-122 – Marine Protected Areas (MPA) (C7/44): The IHO Secretariat to establish liaison with relevant data providers of MPAs and IRCC through the MSDIWG to establish a pilot project for the High Sea and MPAs adopted by IMO, to demonstrate the benefits of S-122 for non-navigation purposes. As first consequence of C7/44, at the latest MSDIWG meeting held in March, Protected Seas led a discussion on Marine Protected Areas and the work Protected Seas is doing to present their MPA data in S-122. The discussion continued around MPA (S-122) and how the WG will contribute to the implementation of the standard. They noted

the evolving IHO direction to the MSDIWG regarding S-122, and have made the decision to track progress, provide guidance, and possibly present data that Protected Seas will offer in the S-122 standard.

Action taken: At IRCC16, it was decided that IRCC will report to C-8 that the task of MSDIWG should be modified as “*MSDIWG to monitor and provide assistance to the S-122 Protected Seas pilot project with specific focus on the High Seas and MPAs adopted by IMO, to demonstrate the benefits of S-122 for non-navigation purposes*”.

5. Recommendations:

- 5.1 *MBSHC Members are encouraged to support the continuation of the EWH project through financial and / or in-kind support.*
- 5.2 *MBSHC is requested to provide the IRCC Chair with its contribution to continue on the measurement of those SPI of regional interest allocated to IRCC.*
- 5.3 *MBSHC Members are invited to respond to the survey questionnaire (IHO CL 28/2024) on Making IHO Events More Inclusive.*

Preparation of the 8th Meeting of the IHO Council

6. The 8th Meeting of the IHO Council is scheduled to take place in Monaco, from 15 to 17 October 2024. The preparation of the meeting has already started with “CCL 01/2024 - Announcement of the Eight Meeting of the IHO Council and Provisional Agenda” and “CCL 02/2024 - IHO Annual Report for 2023 and Approval of the Finance Report for 2023”, and “CCL 03/2024 - Call for comments on the proposals to be considered at the 8th Meeting of the IHO Council (C-8)”. It can be noted that in accordance with the Rules of Procedures of the Council, the deadline for submission of proposals by IHO Member States is 15 July 2024.

7. With reference to the C-8 Provisional Agenda (cfr. CCL 01/2024), the following items related to the subsidiary organs of the Council and the annual work program and budget deserve attention:

- Update on the activities of the IHO Fund Generation Project Team
- Update on the Empowering Women in Hydrography Project
- Update on contributions to the UN Ocean Decade
- Update on activities to acquire new IHO Member States
- Initial discussion on the revision of the IHO Strategic Plan based on inputs from subordinate bodies (HSSC, IRCC), Member States and IHO Secretariat
- Report on inclusive participation in IHO meetings and proposed Resolution.

Following CCL 02/2024 and the approval of the Finance Report for 2023 and its recommendations (see IHO CL 26/2024), the following proposals to allocate the budget surplus for 2023 of 215k€, deserve attention:

- 50,000 Euro to the Assembly Fund,
- 15,000 Euro to the Special Project Fund,
- 40,000 Euro to the Capacity Building Fund,
- 10,000 Euro to the IBSC Fund,
- 40,000 Euro to the Renovation and Enhancement Fund,
- 60,000 Euro to the Relocation Fund.

As per CCL 03/2024 and in order for the IHO Secretariat to prepare the C-8 Red Book, Member States are invited to monitor the updates made on the list of proposals on the C-8 webpage on a regular basis and to forward any comments that they may have, no later than 5 August 2024. To facilitate the preparation of the organization of C-8 and based on the experience from previous Council meetings,

Member States having a seat at the Council are also invited to nominate rapporteurs by email to: yves.guillam@iho.int, by 5 August 2024.

IHO Strategic Plan (2021-2026) update and IHO Strategic Plan review

8. Following actions C7/36 – C7/38, the current structure of the IHO SP 2021-2026 is still relevant at conceptual level (vision, goals, targets, strategic performance indicators, etc.). Therefore, the IHO Secretariat proceeded to update the *Annex B to IHO Publication P-7 – 2023 Annual Report*, which is available under the IHO website. Following the inputs of HSSC and IRCC, and the respective subordinate bodies, the IHO Secretariat updated the SPI's figures for 2023, including – thanks to the questionnaire issued by the WENGGW – figure related to *SPI 1.3.1 Ability and capability of Member States to meet the requirements and delivery phases of the S-100 implementation plan* (53% in 2023 as per the Annex B to the IHO Publication P-7 – 2023 Annual Report).

9. In accordance with the Council acknowledgment that the current structure of the IHO Strategic Plan (SP) 2021-2026 was still relevant at conceptual level, and that the objective for the next SP 2027-2032 should be limited to a revision of the current SP, the Strategic Plan Review Working Group (SPRWG) under the chairmanship of the Council Vice-Chair, started working via correspondence, establishing that the revised IHO Strategic Plan will be developed using a bottom-up approach, involving HSSC and IRCC and the Regional Hydrographic Commissions. Terms of Reference (ToRs) and Rules of Procedures (RoPs) were drafted and a first revision of the Timeline for SPRWG was issued. The timeline includes the submission of the draft SP to HSSC17 and IRCC17 in April 2025, whilst the last step of the revision process is to submit a report on the work of the SPRWG and facilitate Council's submission of the revised IHO SP (final draft) to A-4 by December 2025.

10. As results of the discussions on the future IHO Strategic Plan held at the latest HSSC16 and IRCC16 meetings, the following inputs for the SPRWG were agreed:

HSSC16: after a brainstorming, the Committee agreed on the following topics to report to C-8: *“Consumer confidence in S-100 – Phasing out of existing products (S-57 ENC, paper charts, NAVTEX, printed pub.)”, “Leave no one behind”, “Connect more to the IMO E-Navigation Strategy”, “S-100 – Infrastructure Center is key to support S-100”, “New Survey technology to include AI post processing, automated cartography, etc.”, and “Include SDG Goals and UNGGIM references – updated guiding principles measure to reference UNIGIF-Hydro”.*

IRCC16: after a brainstorming, the Committee agreed on the following topics to report to C-8: *“Clarify addressee of SP (internal, external), adjust language/layout”, “Maintain the 3 Goals but update and refine”, “Targets to better align with strategic objectives”, “Targets to be measurable and identifiable with clear responsibilities assigned”, “SPIs measuring the objective, responsibilities defined, easy to derive, consider changes wisely (comparability)”.*

Capacity Building Programme

11. The CBSC 21 decided that the funded activities which were not executed in the 2023 CBWP could be carried over to the 2024 CBWP, whilst the CBSC 22 decided that the funded activities which were not executed in the 2024 CBWP will not be carried over to the 2025 CBWP. The 2024 CBWP has 293,265 euros for non-earmarked projects and 790,223 € for earmarked projects. The total of funds available for 2024 is 1,083,488 €. In 2024 the CBWP has returned to the pre-COVID practice of not carrying over incomplete activities from year-to-year. Significant increment of the funds for non-earmarked activities was received from Republic of Korea in 2024 and for 2025 (50% more than in 2024 and equal to 60,000 €). The expected balance of the CB Fund available for the 2025 CBWP is 189,062 €. The CB Fund does not include the direct contributions from MSs or other organizations. Their significant support either direct or through contributions to the CBWP is a very important part of CB not reflected in the CB Fund, except those from Republic of Korea and Nippon Foundation, and those national contribution to support specific projects like the EWH project.

12. MBSHC has the following activities planned for 2024:

- P-11 - Workshop on Disaster Response (not funded)
- P-16 - Workshop on ENC Quality Assessment & Conversion (funded by IC-ENC)

- P-29 - Workshop on MSI Development & Implementation (former 2023-P6 - funded).
13. In 2024, the following courses sponsored by the IHO and ROK and Nippon Foundation have been approved:
- CAT A courses at USM sponsored by ROK (2 candidates selected – 1 from Türkiye – for 11th course 2023/2024; 2 candidates selected – 1 from Greece – for 12th course 2024/2025 starting in August 2024 with IHO CL 05/2024);
 - Cat B course in Hydrography from 17 June to 1 November 2024 at KHOA-ROK (10 candidates selected – 1 from Croatia, 1 from Georgia and 1 from Ukraine – with IHO CL 15/2024);
 - GEOMAC Cat B course in 2024 sponsored by Nippon Foundation (7 candidates selected – 1 from Lebanon and 1 from Tunisia – with IHO CL 17/2024).
14. During the last CBSC Intersessional meeting both RENCs presented plans for contributions to the CB Work Programme. IC-ENC has started with an “*opt in*” initiative, which is expected to generate substantial funding opportunities. As a consequence, CB Coordinators were encouraged to submit relevant Phase 3 CB proposals. The first CB activity funded from this new fund was an *ENC Quality Assessment & Conversion Workshop* successfully organized by the MBSHC in Istanbul last May. The PRIMAR Advisory Committee will discuss a similar approach in November 2024. PRIMAR currently offers their full e-learning package for five Non-RENC Member States (MS), up to five persons per MS.
15. The C-55 PT progressed the proposal on the future of the IHO C-55 publication, highlighting that the C-55 PT developed a solution for survey status in countries based on CATZOC provided via the RENCs directly to the IHO Secretariat. IRCC tasked CBSC to liaise with the RENCs and the IHO Secretariat to investigate Member State contributions of CATZOC data to the IHO Secretariat via the RENCs and to proceed with the proposed solution as given to IRCC11 (to populate C-55 Status of Survey for Safety of Navigation purpose). C-55 is an important external IHO document, used by IMO as source for the status of survey and cartography worldwide in supporting the IMO Member State Audit Scheme (IMSAS) programme, and is also a source of data in measuring the Strategic Performance Indicators (SPI) that measure progress against the IHO Strategic Plan 2021-2026. At CBSC22 the Chair reported on the geospatial solution for MSI status of Coastal States on their website. This solution can function for C-55 reporting on MSI and therefore does not require membership input, as demonstrated at IRCC15.

Empowering Women in Hydrography (EWH)

16. The Empowering Women in Hydrography (EWH) work item aims to contribute to more women participating equitably in the field of hydrography and assuming leadership roles within the hydrographic community. Due to additional and continued support from Member States (Belgium, Canada, Denmark, France, Norway, UK and USA) the project continues as supported by the decision of the 7th Meeting of the Council. Events since IRCC15 include:

- Continuation of the Mentoring Programme.
- 2 opportunities from SHOM (France) training in hydrography (HYDRO-3 / AFHy)
- 3 opportunities to participate in hydrographic and oceanographic survey activities aboard two SHOM research vessels
- Thanks to the Letter of Intent signed between the IHO and the WMU (World Maritime University of IMO), numerous activities on Gender Equality (workshop, webinars, etc.) and the participation at the UN Ocean Decade Conference in Barcelona in April 2024 with a joint WMU-IHO Satellite Event “177. *The People We Need for the Ocean We Want: Achieving Gender Equality for the Ocean Decade*” were secured.

Current and future activities include:

- NOAA’s (USA) offered three opportunities for an at-sea experience/advanced training on NOAA hydrographic survey vessels for 2024 (see IHO CL 22/2024 – 1 candidate from

Cyprus)

- Secondment to IC-ENC on e-Learning Creation (see IHO CL 23/2024)
- Hiring an EWH assistant
- Continuation of the Mentoring Programme supported by UKHO
- Internships / Secondments
- Funding support via UK Gender Balance Fund (see IHO CL 25/2024).

IHO e-learning Center

17. The IHO e-learning center, established by KHOA, is accessible at <https://elearning.iho.int>, or via the main page of the IHO website. An e-Learning Centre Project Team completed guidelines for the proposed composition of a Steering Committee. The CBSC endorsed the guidelines and IRCC approved them. With IHO CL 24/2023 the e-Learning Centre Steering Committee was established. Since its establishment, the IHO eLearning Centre Steering Committee (SC) has formed and met virtually 3 times. The composition of the Steering Committee (SC) is as follows: IHO Director, CBSC Chair, Vice Chair (USA), Secretary (CBSC Vice Chair), 1 member of IBSC and 6 other members. In the absence of a General Manager a General Manager Group has formed from the SC who in collaboration with the System Manager will assess any submitted material (for suitability and technical compatibility), share it with the appropriate IHO WG, facilitate its uploading and make the SC aware of the material. A System Manager is provided by the Republic of Korea to maintain the system. Their continued support is greatly appreciated and will ensure that IHO Members and Non-Members will be able to access important learning opportunities. The SC continue to seek e-Learning material from Member States and partner organizations to be added to the e-Learning Centre platform.

Joint IHO/IMO/WMO/IOC/IALA/IAEA/FIG/IMPA Capacity Building (CB) Initiative

18. Following CBSC21/decision 4, the 13th Joint IHO/IMO/WMO/IOC/IALA/IAEA/FIG/IMPA Capacity Building (CB) Coordination Meeting was held on 13 and 14 May 2014 at the headquarters of the IHO in Monaco. The meeting marked the restart of the joint CB coordination meetings after 5 years of interruption caused by the COVID pandemic, bringing together 16 representatives from the eight organisations. The main objective of the meeting was to coordinate the efforts of international organizations / associations for building and developing capacity in the maritime and marine sectors, in line with the United Nations concept of "Delivering as One". The organisations presented on their respective workplans and discussed how to cooperate having joint CB activities. Subsequent meetings have already been scheduled in September 2024 (VTC) and September 2025 hosted by IOC.

Participation in the IMO Technical Cooperation Committee (TCC)

19. To share best practices and research synergies in the field of Capacity Building / Capacity Development related to Maritime Safety Information (MSI) and how the IHO and its Capacity Building (CB) program are committed to contributing support for the initiatives related to safety of navigation and the hydrographic responsibilities attributed to the States in the SOLAS Convention, with reference to all RHCs, the IHO Secretariat participates annually at the TCC meetings. At the last IMO TC74 meeting held in June 2024, a paper was presented by the IHO representative, with the aim to collaborate with the IMO in the areas of MSI and the development of the new S-100 Standard through joint activities in those regions / geographical areas that need more investment in terms of capacity development, in order to optimize the use of financial and human resources for the benefit of the International Maritime Community.

20. Recommendations:

- 19.1 MBSHC members are invited to continue following and evaluating the possibility to contribute to the CB Programme, looking forward to implementing also an inter-regional approach.
- 19.2 MBSHC members are invited to participate at the EWH project and provide proposals via the specific webpage (<https://iho.int/en/basic-cb-sc-ewh>).
- 19.3 MBSHC members are invited to provide contributions to the IHO e-Learning Center at KHOA.

Maritime Safety Information Services

21. Work by the International Maritime Organization (IMO) on the modernization of the Communications and Global Maritime Distress and Safety System (GMDSS) continues with the ongoing review and updating of the SOLAS chapters III and IV and on the related and consequential amendments to existing instruments. The consequential changes as a result of the recognition of the Iridium SafetyCast service as a recognised mobile satellite service (RMSS) provider in the GMDSS continue to be implemented. The Iridium SafetyCast service became SOLAS carriage compliant from 1 January 2020. As a key outcome of MSC-105 was that the use of all Recognised Mobile Satellite Services (RMSS) is now mandatory. WWNWS agreed that the use of all IMO RMSSs should be mandatory, showing those NAVAREAs already fully implementing the Iridium SafetyCast system, as well as those still in trial and those that have not yet implemented the system. A Letter from WWNWS and IRCC Chairs will be issued soon for relevant Member States to implement all IMO recognized mobile satellite services.

22. WWNWS provided feedback on IHO SPI 3.1.1 assigned to WWNWS. Overall, for 2023, WWNWS assessed Coastal States MSI capacity to be 87%. Overall, for 2024, the WWNWS assessed MSI Coastal States capacity to be 89,2% (IHO SPI 3.1.1 target is 90% by 2026). The SPI is measured yearly, based on the navigational warnings issued and on the MSI support provided by NAVAREAs. WWNWS is working in cooperation with CBSC on a C-55 GIS project, considering the States having the MSI capacity and meeting MSI SPI, and those not having such capacity and not meeting MSI SPI. Next step will be to move the web map to the IHO's ArcGis online server and add a link to the WWNWS web page. MSI courses provided by WWNWS were presented, in line with the IHO CB Strategy Phase 1. S-124, Edition 2.0.0 was endorsed by WWNWS and submitted to HSSC for approval. NCSR10 approved the joint IMO/IHO/WMO Manual on Maritime Safety Information.

23. Recommendations:

The MBSHC Chair is requested to encourage all Commission's Members to:

- 22.1 Establish and maintain effective communications with the relevant NAV and MET Area Coordinators to ensure the timely provision of MSI.*
- 22.2 Use and follow the guidance provided in S-53 – Joint IMO/IHO/WMO Manual on Maritime Safety Information – to ensure the necessary facilities and capabilities are provided and maintained for the gathering and communication of MSI within their area of national responsibility.*
- 22.3 Implement the Iridium SafetyCast services, as a consequence of the approval by IMO Member States of the Iridium SafetyCast as an RMSS.*

Crowd-Sourced Bathymetry, GEBCO and Seabed2030

24. Following the publication of B-12 Ed. 3.0.0, CSBWG focused on a critical review of the group's operating mandate, identifying ten high level priority work areas and developed a multifaceted work plan. It was noted that in order to draft a submission to the UN Decade, an "IHO CSB Initiative" would first need to be more formally defined. The IHO Secretariat presented a proposal for how to incorporate the development and governance of an IHO CSB Initiative into the CSBWG Work Plan. The IHO CSB Initiative would serve as the central point of standardization, policy and technical guidance – coordinated and administered by the CSBWG, into which those various CSB projects (such as The Great Barrier Reef Project, the joint IHO & Yacht Club of Monaco, etc.) managed outside the CSBWG would feed into and / or draw from. The Circular Letters (IHO CL 21/2020 and IRCC CL 1/2020) to request MS to indicate their positions on the provision of CSB data are receiving new positive replies, in addition to the 35 already available at the link: https://iho.int/uploads/user/Inter-Regional%20Coordination/CSBWG/MISC/B-12_2023_EN_Acceptance_of_CSB_Data_in_NWJ_v7.0.pdf thanks also to the continuous engagement of the CSB-GEBCO-Seabed 2030 Regional Coordinators with IHO Member States, to advocate for open data access and CSB activities.

25. The GEBCO Guiding Committee (GGC) prepared the new *GEBCO strategy* and *GEBCO Governance review* report and both were endorsed by IRCC at IRCC16 meeting. GGC will soon start to organize the implementation (if, how, priorities) of the GEBCO Strategy and the recommendations

included in the GEBCO Governance review. The *Maps the Gaps Symposium* held in November 2023 in Monaco at Musée Océanographique highlighted on seabed knowledge, improved climate modelling, marine biodiversity discovery and monitoring, and offshore wind planning process. With IHO CL 12/2024 (expiration date 14 April 2024 and application process for entry onto the course in 2024 recently closed with the selection of 6 candidates from Canada, Peru, Brazil, Japan, Ecuador and Philippines) – and with an IOC CL within the IOC community as well – the IHO advised Member States that nominations are being sought for the 21st course of the IHO-IOC-Nippon Foundation/GEBCO Training Program leading to a Graduate Certificate in Ocean Bathymetry at the University of New Hampshire (UNH), USA. The 21st course will begin in late August 2024 and will undertake an intensive 12-month period of lectures, practical laboratory and on-the-water projects, secondments to relevant laboratories and cruises on research or survey ships.

26. The IHO and IOC cooperates closely as parent Organizations of the General Bathymetric Chart of the Oceans (GEBCO), contributing to the GEBCO Guiding Committees and the six GEBCO Sub-Committees. In June 2023, during the IOC 32nd Assembly, the 120th Anniversary of GEBCO was celebrated at the IOC-UNESCO HQs at the presence of the Ambassador of Monaco to UNESCO. After two years of work, the GEBCO Strategy (2024-2030) and the report on GEBCO Governance Review were presented at the IOC-UNESCO Executive Council in June 2024. The IHO Secretariat continues the active participation in the UN Decade initiatives (e.g. Calls for Actions, Conferences, UN Decade Vision 2030 White Paper, etc.) and the cooperation with the Global Ocean Observing System (GOOS) and how the integrated system can support a wide range of applications, including GEBCO, through a network of regional and national alliances.

27. Nippon Foundation GEBCO-Seabed 2030 project was endorsed as an Action of UN Decade of Ocean Science for Sustainable Development. The complex network of this project was explained along with the data ingestion in the system and mapping coverage that now stands at 26.1%, as recently announced by the Nippon Foundation-GEBCO Seabed 2030 Project on 21 June 2024, in occasion of the World Hydrography Day (WHD) 2024. This is a testament to the continuous efforts and advancements in seafloor mapping technologies and activities. While the increase showcases progress in the portion of the seabed mapped, it's important to highlight the remarkable discoveries made possible through this global effort to uncover Earth's final frontier – discoveries that are essential for realizing sustainable ocean management.

28. Recommendations:

MBSHC members are invited to:

26.1 Consider the impacts of the increasing global societal and United Nations (UN) driven need to complete the picture of the seafloor as well as the potential benefits to individual coastal States.

26.2 Make data freely available for inclusion in the DCDB and the widest possible use, in accordance with IHO Resolution 1/2017.

IHO and U.N. Decade of Oceans for Sustainable Development / U.N. Ocean Conference

29. GOAL 3 confirms the IHO's ambition to help facilitate a paradigm shift in the design and delivery of qualitative and quantitative ocean knowledge to inform solutions that will contribute to the 2030 Agenda for Sustainable Development, whilst the IHO's ambition to be an effective and recognized contributor to the major Ocean related challenges identified by the international community. The IHO Secretariat, for its part, is moving in line with the aforementioned GOAL 3, reinforcing and expanding cooperation with International Organizations and participation in those events and initiatives closely related to the knowledge and the sustainable use of the Ocean. In fact, in accordance with the *Decade Challenge nr.8 – Create a digital representation of the ocean*, IHO is promoting the essential role of bathymetry in underpinning ocean science and related activities.

30. Within the framework of the UN Ocean Decade, significant attention is being paid to the importance of bathymetry, in addition to that range of ocean parameters such as temperature and salinity. The Global Ocean Observing System (GOOS) steering committee has identified a number of Essential Ocean Variables (EOVs), suggesting that depth could be added to such list, with the IHO

and IOC as leads under the auspices of the General Bathymetric Charts of the Oceans (GEBCO). In addition, the IHO and the OECD (Organization for Economic Co-operation and Development), with input from a broad range of stakeholders, have been undertaking a joint project to explore and identify the linkages between seafloor mapping, the ocean economy and ocean health and an IHO-OECD Workshop held in November 2023 in Monaco. The joint project has also the aim to discuss the benefits of increased investment in ocean mapping and better ocean knowledge. The initiative will bring to a dedicated report from IHO and OECD work on seafloor mapping and the ocean economy, as well as a key step in the OECD’s project to produce an updated Ocean Economy in 2045 report ahead of the 2025 UN Ocean Conference, in order to directly support the aims and objectives of the Ocean Decade, as well as examine what a sustainable framework for global seabed mapping in the future would require.

31. The IHO Secretariat attended the 2024 Ocean Decade Conference - Building the Ocean Decade roadmap to 2030 for the ocean we want. held in Barcelona in April 2024, co-hosting two satellite-events: one in partnership with the OECD on ocean mapping entitled “*The seabed data we need for the ocean we want*”, aimed to look at the importance of advancing our understanding of the ocean and fostering increased investment in related activities, and the second with IMO - World Maritime University (WMU) on “*Empowering Women for the Ocean Decade: Achieving Gender Equality in Ocean Sciences and Policy Making*”, looked at how to establish an environment that allows for the equal and fair participation of women in Ocean Sciences. The participation at the Barcelona Conference reaffirmed the IHO’s intent to become a relevant stakeholder helping to deliver a qualitative and quantitative ocean knowledge, and to inform solutions that will contribute to the 2030 Agenda for Sustainable Development.

32. The aim of the IHO engagement in *United Nations Ocean Conference 2025 - UNOC25* (and associated events) is to support the delivery of the Strategic Plan by ensuring international oceans policy is conducive, if not supportive of the broadest utilization and implementation of S-100, advocating for investment in primary data gathering and the sharing of existing data holdings, and protecting the domain expertise of hydrographic offices. Initial contacts have been tentatively taken with the Principality of Monaco and the Foundation Prince Albert II for identifying themes to be presented in joint events during the “*Blue Economy and Finance Forum*” (BEFF) that will be hosted in Monaco on 7-8 June 2025 and at UNOC25 (9-13 June 2025). An internal project team was established to set out the IHO Secretariat’s aims, objectives, specific activities and level of ambition for participation in the 3rd UN Ocean Conference in June 2025 (UNOC25), and to identify next steps. In order to provide an opportunity for the Chairs of the 15 Regional Hydrographic Commissions and subordinate bodies of the IRCC to participate in the aforementioned IHO-sponsored side-events and potentially participate as delegates of the respective national delegations participating in UNOC2025, the IHO Secretariat proposed – and it was approved by the IRCC at the IRCC16 meeting – that the CBSC23 and IRCC17 meetings will be held in Monaco at the Secretariat’s headquarters back to back with the noted UN events in the period 28 May - 6 June 2025.

33. **Recommendation:** *MBSHC is invited to take note of the engagement of the IHO Secretariat in the UN initiatives and the items for further consideration.*

Technical Program and S-100 Implementation

34. As presented in CL 43/2023, the Hydrographic Services and Standards Committee, S-100 Working Group put forth a 2024 timeline for advancing Phase 1 / Route Monitoring product specifications. In order to meet IHO and IMO expectations for 2024, the HSSC intends to adhere to the following schedule:

TASK	IHO CL issue date	MS Response due
<i>S-100 Edition 5.2.0</i>	January 2024	May 2024
<i>S-100 Phase 1 Endorsement</i>	October 2024	December 2024

35. S-100 Ed. 5.2.0 was adopted with the IHO CL 27/2024Rev1. In accordance with the deadlines set out in the above schedule, it is a critical milestone for the next phase: the endorsement by HSSC then adoption of the “operational” editions of the Phase I S-100-based Products Specifications (S101, S-102, S-104, S-111, S-124, S-129). There is still an intense effort underway to meet the IMO target for S-100 ECDIS, including some critical S-100 framework Specifications (S-98), infrastructure issues (Security Scheme, general S-100 Infrastructure), and Product Specifications (S-164, S-128).

36. With the recent adoption of the revised Resolution MSC.530(106) on Performance Standards for ECDIS by the IMO at their 108th Session of the IMO Maritime Safety Committee (MSC108) in May 2024, it was noted that the IHO is working hard to progress the implementation of S-100 based products by aiming to complete the operational versions of Phase 1 standards, including Electronic Navigational Charts, Bathymetry, Water Levels, Surface Currents, and Under Keel Clearance Management by the end of 2024. As S-100 compatible ECDIS enters service, starting in 2026, Hydrographic Offices will work to produce S-100 products, anticipating S-100 systems to become increasingly beneficial over time. Future progression on the implementation of the S-100 Roadmap will be regularly reported by IHO to IMO (NCSR). From 2025 onwards, these reports will be based on respective IHO Member States and Regional Hydrographic Commissions reports and will provide the geographic coverage of S-101, other S-1xx products, ENDS schemes, and production plans per Charting Regions by digital means. INTtoGIS III remains the one-stop-shop platform to support the RHCs and give a worldwide vision of the S-100 plans and production. The Republic of Korea confirmed its intention to pursue this development.

37. In addition to that, the continued maintenance of the printed nautical chart has the full attention of IHO, despite the need for this format of nautical charts will continue to decrease. On this regard, the IHO recognizes that printed nautical charts will be needed for the foreseeable future by certain ships. For this reason, the IHO will continue to support paper chart standards and coordination efforts around the world.

38. WENDWG highlighted the importance of defining a S-100 capabilities-based approach at regional level and for the WENDWG to provide subsequent guidelines through the IRCC to the S-100 Regional Coordinators for a timely and harmonized implementation of the S-100 Roadmap. The RENCs, which maintain the S-57 ENC Data Flow Diagram from Producers to End-Users on an annual basis, confirmed that they had started to design the much more complex description of the diagram applicable to ENDS (Electronic Navigation Data Services) in the S-100 eco-system. At IRCC16, WENDWG was tasked to invite the RHCs representatives to develop their schedule to meet the 2026 IMO target (S-100 ECDIS) and share their own roadmap at the next WENDWG meeting to be held in February 2025. WENDWG also established an ad-hoc S-11 - Part C drafting team to develop a proposed *Edition 1.0.0 of S-11 Part C “Guidelines for the Coordination and Management of the Development of S-100 Electronic Navigational Data Services (other than S-101 ENCs)”* to submit for approval for testing in 2025 according to IHO Resolution 2/2007 as amended. Some critical overlaps at Usage Band 5 (Harbour) and Usage Band 2 in some RHCs were presented and the RHCs were encouraged to ask their members to engage bilaterally to resolve overlaps.

39. **Recommendations:**

39.1 MBSHC Members are kindly requested to monitor IHO Circular Letters distribution and vote accordingly at their earliest convenience.

39.2 MBSHC is kindly requested to implement the WEND recommendations and to develop a proper schedule to meet the 2026 IMO target (S-100 ECDIS) and share the own roadmap at the next WENDWG meeting.

39.3 MBSHC Members are encouraged to liaise bilaterally to solve overlaps in the Region.

IHO GIS and Databases

40. Work has *continued* on the IHO internal systems. Especially, two components are to be mentioned:

- IHO Country Information system, and

- IHO Online Form system.

The IHO Country Information system has been progressively upgraded to include administrative information and facilitate the maintenance of the IHO publications such as Yearbook (P-5) and Status of Hydrographic Surveying and Charting Worldwide (C-55) posted on the IHO website. The IHO Online Form system has been used since March 2019 and has been widely accepted by the Member States for the Circular Letter responses and the updating of P-5 and C-55 (CL20/2019 and CL03/2020 refers). Countries in the MBSHC Region are invited to review their entry in the publications on an annual basis and provide the IHO Secretariat with the appropriate updates through the IHO Online Form system. An Esri-based GIS solution has been implemented for the efficient visualization of geospatial data stored in the Country Information System. This Cloud-based service has enabled access to various layers and functions through the IHO website such as the IHO ENC Catalogue. Currently, six WebGIS applications have been available to the public in this new environment (ENC Coverage Catalogue, IHO Web Catalogue of INT Charts and ENC Schemes, IHO Member States Map, FIG-IHO-ICA IBSC Recognized Programmes and Schemes, GEOMAC project and the Map regarding National Marine Spatial Data Information (MSDI) Portals).

41. **Recommendation.** *Countries in the MBSHC Region are invited to review their entry in the IHO Yearbook and C-55 and to provide the IHO Secretariat with the appropriate updates or to report no change (CL 20/2019 refers).*

IHO Outreach

42. The outreach of IHO themes is more than ever based on digital provisions. Social media such as LinkedIn, Facebook and X (ex-Twitter) have become relevant communication channels in parallel to the IHO website. The IHO website had a total of 921,575 views in this calendar year 2023. The LinkedIn page grew to 9,870 followers by June 2024 and reached total post impressions of 322,413 in 2023. The website of the International Hydrographic Review underwent a full re-launch providing now substantially extended functionality. The IHO Secretariat has increased its presence on social media through articles and news about its working groups, committees and subcommittees, as well as the participation in regional and global initiatives that refer to Hydrography, especially in the framework of the UN Ocean Decade and in view of the UN Ocean Conference in 2025. The IHO Secretariat is updating the IHO website with the implementation of a new IHO Portal which will be discussed at the 8th Meeting of the IHO Council.

43. There have been also several actions to raise awareness about the IHO's work and the importance of hydrography to a broader audience. The Secretariat has continued communicating on social media and participated in regional and global initiatives for the ocean.

World Hydrography Day

44. As announced with IHO CL 01/2024, the theme for WHD 2024 is as follows:

“Hydrographic Information - Enhancing safety, efficiency and sustainability in marine activities”

This theme is proposed to highlight that - as per Decision 8 of the 3rd Session of the IHO Assembly in May 2023 - Goal Number 1 of the Strategic Plan and its targets shall have the highest priority in the implementation of the 2024–2026 Work Programme, which means priority in application of material and human resources, liaison with public sector and industry partners, promotion of concerted regional approaches including increased collaboration with the RENCs, and support of test beds delivering best practice examples for the production, maintenance and distribution of all prioritized S100 derivatives. The Secretariat would welcome any comments and suggestions aimed at improving the impact and the organization of annual WHD celebrations. In support of WHD 2024, the IHO Secretariat will feed the IHO Facebook page, X account, LinkedIn account and YouTube channel. The IHO Secretariat will also organize a dedicated page on the IHO website, where papers and other materials relevant to the celebration will be posted. Member States are invited to forward to the Secretariat any materials that they may create in support of their national WHD 2024 celebrations for posting on any of these platforms.

International Hydrographic Review (IHR)

45. Dr Patrick Westfield from Germany was confirmed for additional 2 years as IHR Editor. The Review is focused in facilitating interdisciplinary knowledge exchange in applied science, as hydrography encompasses fields such as geophysics, oceanography, geodesy, acoustics, cartography, remote sensing and others. The recent IHR Vol.30 Ed. May 2024 covers some of these different perspectives and includes articles on oceanography, geodesy, geology and of course hydrography, with contributions on crowdsourcing water depth data.

46. Twice a year, the IHR provides an opportunity for Member States to publicize technical and other achievements in their region. An editorial board comprising a representative from each region has been established. Papers for consideration for publication in the IHR should be forwarded directly to the editor (*ihreview@iho.int*, copy to *ihr.editor@iho.int.com*). The deadlines are as follows:

- End of January for the May Edition
- End of July for the November Edition.

47. **Actions Requested of MBSHC:**

- a) Note this report
- b) Consider the recommendations proposed in this Report
- f) Take any other actions as considered appropriate.