

SOUTH-WEST PACIFIC HYDROGRAPHIC COMMISSION

19th Meeting, by VTC, 23-25 February 2021

Report of the IHO Secretariat

Submitted by:	Secretariat of the IHO
Executive Summary:	This paper reports on activities of the IHO Secretariat that may impact the work of the South-West Pacific Hydrographic Commission.

Status of Membership of the IHO

1. 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. Since the last SWPHC Conference Kenya, Iraq and Angola acceded to the IHO Convention and the IHO membership now stands at 97. Unfortunately, Serbia, Syria and Vanuatu remain suspended from Member States rights.

Regional Applications for Membership of the IHO

2. The non-IHO Member States of the SWPHC region are Cook Islands, Kiribati, Nauru, Niue, and Palau. All, except Cook Islands and Niue, are Member States of the UN. Cook Islands and Niue, as non-Member States of the UN, are required to seek the approval of the IHO Member States. The IHO Secretariat, in cooperation with the Department of External Relations of the Government of Monaco, stands ready to assist those non-IHO Member States with the application process for membership of the IHO, as recently done towards several non-IHO Member States in other hydrographic regions, and stands ready to pay High Level Visits to those States in the SWPHC region not yet IHO Member States.

3. **Recommendation:** *SWPHC is invited to encourage and propose to the IHO Secretariat High Level Visits to those States not yet IHO Member States.*

IHO Council Activities

4. Due to COVID-19 restrictions, the fifth meeting of the IHO Council (C-5) took place on 19-21 October 2021 via hybrid in-person/video conference.

5. Among the items discussed at C-5, were the proposals from HSSC, IRCC and the Secretariat for delivery of the Strategic Performance Indicators (SPIs) assigned to each of those bodies for the implementation of the IHO Strategic Plan, as well as the Roadmap for the S-100 Implementation Decade (2020-2030) for the development of digital products and services. Member States stressed the need for IHO to support basic Capacity Building while also supporting the migration to S-100. The role of the RENCs has been a subject of discussion, and RENC representatives were therefore invited by the Chair to attend the session as observers.

6. The actions in progress within HSSC for the development of a governance document in support of the dual fuel concept and associated actions were noted. A consolidated draft governance document on the 'dual fuel' concept will be considered by HSSC-14 and subsequently submitted to C-6. To develop a guidance document on the dual fuel concept, the S-100 WG, under HSSC, conducted a series of workshops that included discussions on the subject as well as on the future continuation of the system-ENC (SENC) delivery. A HSSC Drafting Group was established to conduct a revision of the International Maritime Organization (IMO) ECDIS Guidance for Good Practice and ECDIS Performance Standards

(MSC 232(82) that will be considered by the IMO Sub-Committee on Navigation, Communications and Search and Rescue (NCSR-9) in June 2022.

7. C-5 noted the report and commended the IRCC, the RHCs, and IRCC Sub-Committees for their achievements as well as the outcome of the IRCC October Workshop on the Strategic Plan. The Council, acknowledging the need for further recommendations on the realization of the Strategic Plan in RHCs by Member States and invited the IRCC to provide these recommendations to the RHCs as a matter of priority.

8. The Empowering Women in Hydrography project was launched with a kick-off meeting via virtual teleconference held on 28 September 2021. Funded by Canada until 2024 and with intensive support from the IHO Secretariat, the goals of the project include to give more exposure to women to the field of hydrography and to increase gender diversity in the hydrographic community. Lines of action include outreach, contact and learning, including internships, at-sea experiences and train-on-the-job activities. A specific webpage (<https://iho.int/en/basic-cbsc-ewh>) has been set up under the Capacity Building Sub-Committee (CBSC) for this project.

9. The Project Team has been established for the IHO e-Learning Center at KHOA, along with terms of reference and rules of procedure. Operational tests with IHO Member States are expected to begin in 2022. However, the success of the e-learning initiative is dependent on contributions of online learning material from Member States and partners.

10. Recommendations:

10.1 SWPHC is invited to continue on the implementation of the IHO Strategic Plan, elaborate on the gap analysis and support IRCC in identifying measures and values to measure those SPI of regional interest allocated to IRCC, in accordance with IRCC CL 01/2021.

10.2 SWPHC members to note the appropriate HSSC's governance document on the 'dual fuel' concept.

10.3 SWPHC members are invited to participate at the EWH project and provide proposals via the specific webpage (<https://iho.int/en/basic-cbsc-ewh>) has been set up under the Capacity Building Sub-Committee (CBSC) for this project.

10.4 SWPHC members are invited to provide contributions of online learning material to the Project Team established for the IHO e-Learning Center at KHOA.

INT Chart and ENC Production Coordination - Region L

11. There is no specific activity reported by the Coordinator (M. Robert Cario, Australia) since the last Conference.

12. A report is expected at WENDWG-12 from the SWPHC Representative in WENDWG under agenda 5.1 of WENDWG-12, basically to share the SWPHC views on the following issues/questions that will be addressed at the meeting: *Summary of main achievements and concerns as far as WENDWG is concerned. Extended role of Chart Coordinators with regard to S-100 Implementation. Recommendations to amend S-11 Part A, if any? RHCs' best practice in the preparation of the future, how is the Roadmap on the S-100 Implementation Decade considered by the SWPHC?*

13. The proposal made by Australia (and the UK) to the WENDWG for solving the safety contour problem in ECDIS with HD ENCs is duly acknowledged. Recommendations will be considered by the WENDWG.

14. **Recommendation** *SWPHC is invited to contribute to the work of the WENDWG in the development of actions in support of the Roadmap for the S-100 Implementation Decade.*

Capacity Building Programme

15. Expenditure in the IHO 2021 CB Work Programme was 377,194 Euros, only 43% of the amount in 2019 (before COVID 19). Ongoing financial support is provided by the Nippon Foundation of Japan, the Republic of Korea and by a contribution from the IHO budget with in-kind support from Member States and from industry.

16. The level of activity of the IHO Capacity Building (CB) Programme remained clearly affected in 2021 by the COVID 19 Pandemic. In 2021 only 17% of the funded projects were executed. The rest of the 2021CBWP funded projects will be moved to the 2022CBWP. Decision 5 of the CBSC19 intersessional meeting approved that the 2021CBWP funded activities not executed in 2021 can be moved to the 2022CBWP. SWPHC had two funded CB projects in the 2021CBWP and one in the 2022CBWP:

- CBWP 2021 P-06 - MSI Regional Workshop;
- CBWP 2021 P-07 - Technical Workshop on Hydrographic Governance.
- CBWP 2022 P-05 - Workshop on Disaster Response.

17. Mr Matthew Borbash (USA) is the SWPHC CB Coordinator for planning and implementing the regional CB activities.

18. **Recommendation.** *SWPHC members are invited to continue follow and evaluate the possibility to contribute to the CB Programme.*

Maritime Safety Information Services

19. Work by the International Maritime Organization (IMO) on the modernization of the Communications and Global Maritime Distress and Safety System (GMDSS) continues with the on-going 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. Good progress has been made with implementation with a number of NAVAREAs due to become operational in 2022, with more entering the formal testing phase. However, there is still a number of NAVAREAs that need to commit to beginning implementation before the service can be declared fully operational. Member States are reminded of the resources required and the responsibilities for their national Coordinator to perform their functions as part of the GMDSS. The national Coordinator should have established sources of information relevant to the safety of navigation within national waters, effective communications with the NAVAREA Coordinator and adjacent national Coordinators, if needed, to pass relevant information to all authorities and organization that need to be made aware and access to broadcast systems for transmission to their area of national responsibility.

20. **Recommendations:**

SWPHC members to:

20.1 Encourage all information providers (NAV and MET Area Coordinators and RCCs) to complete agreements with all RMSS and commence the necessary testing of the SafetyCast system to progress towards declaring full operational status.

20.2 Establish and maintain effective communications with the relevant NAV and MET Area Coordinators

to ensure the timely provision of MSI.

20.3 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.

Crowdsourced Bathymetry

21. The Crowdsourced Bathymetry Working Group (CSBWG) has been tasked by IRCC to revise the IHO publication B-12 which provides guidance on the collection and use of Crowdsourced Bathymetry (CSB), and to investigate ways to increase participation in data gathering activities. CSBWG is progressing on the revision of IHO publication B-12, but the six review teams following the 11th CSBWG meeting have undertaken significant further intersessional work ahead of presenting the full document to the 12th CSBWG meeting in March.

22. 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 received 30 replies, showing that the engagement with the RHC and HO can be improved. It was highlighted that many coastal States continue to misunderstand the objectives and focus of the CSB initiative, which are to collect data in poorly surveyed or unsurveyed areas.

23. The CSB-GEBCO-Seabed 2030 Regional Coordinators report significant engagement with RHCs at CSBWG11. It is felt that using these advocates is likely to be the primary tool for increasing engagement in CSB activities within the Hydrographic community.

24. The quality of data has grown considerably in the last years having now more than 60TB. The Centre has about 25 GB of CSB data from 185 contributing vessels. DCDB implemented a geographic filter considering MS positions on the collection of CSB data in the areas of jurisdiction. The result is that data from only 13 CSB-supporting countries are currently discoverable and accessible via the DCDB. DCDB now hosts the GEBCO Gazetteer, a web tool that allows the public to search for, view, and download information. IHO MS and stakeholders were invited to contribute and encourage the provision of bathymetric data regardless of its origin or reason for gathering.

25. The CSBWG has identified the importance of much closer cooperation and coordination with GEBCO and Seabed 2030 in communication and outreach to avoid duplication of effort, to ensure a harmonised message is maintained, and to leverage the momentum generated by the UN Decade and the SDGs. Following the 11th CSBWG Meeting, seven sector specific two page information briefs had been produced with the intention that they be used to support 'first contact' engagements with potential CSB contributors. These briefs (covering cruise shipping, super yacht owners/operators, fisheries, hydrographic offices, marine contractors, the marine science community and marine navigation equipment manufacturers) are now available at the following link: <https://iho.int/en/communication-material>.

26. Recommendations

26.1 SWPHC members and associate members are encouraged to officialise and/or review their positions on the conduct of CSB in their waters of jurisdiction (iaw IHO CL 21/2020 and IRCC CL 1/2020) and to identify further potential sources of bathymetric measurements and survey data providers to facilitate the further completion of the DCDB data holdings, as well as to make data openly available for inclusion in the DCDB and the widest possible use, in accordance with IHO Resolution 1/2017.

26.2 SWPHC is invited to continue with its active participation in the initiatives such as UN Decade for Ocean Science (Calls for Decade Actions) and Seabed2030.

GEBCO support through Seabed 2030

27. The Nippon Foundation (NF)-GEBCO Seabed 2030 (Seabed 2030) project builds on more than 100 years of GEBCO history; the project has established regional connections to all corners of the World and benefits from the human network of ocean mapping capacity built over 15 years through the Nippon Foundation – University of New Hampshire (UNH) ocean mapping training programme. Through Seabed 2030, GEBCO's role is recognized and reinforced as the authoritative international initiative for mapping the World Ocean, from the coasts to the deepest trenches. Seabed 2030 has established a South West Pacific Regional Center located at the New Zealand National Institute of Water and Atmospheric Research. The Antarctic and Southern Oceans are covered by the Southern Ocean Regional Center located at Alfred Wegener Institute, Bremerhaven, Germany. Each centre focuses on discovering, gathering and assembling all available bathymetric data from their region to produce regional datasets and resulting products. A global centre will merge the regional datasets to generate the production of the annual GEBCO grid as well as other products. Within this structure, the IHO-DCDB will remain the central GEBCO repository for all raw bathymetric data.

28. In 2021, Dr Geoffrey Lamarche, Associate Professor (Hon) of Auckland University was appointed by the IHO to the GEBCO Guiding Committee (GGC) following an international recruitment campaign. GGC considers that the minimum acceptable data coverage developed from 6% to 21,6 % at the end of 2021, which is still not comparable with the 100% 10m DEM coverage of all landmass. UN Decade of Ocean Science for sustainable development clearly stated the need to complete a comprehensive map of the ocean floor. The importance to invest in future generations of ocean scientists and hydrographers and the GEBCO Training Program with the University of New Hampshire were enhanced. It was decided to establish a new Sub-Committee on Education and Training to liaise with this successful existing program and to identify and connect with other ocean mapping programs. The core of GEBCO activities is building partnerships, regionally and nationally and some examples were mentioned. GEBCO's two biggest challenges are: how to get governments, institutions, private industry and their contractors to share more existing bathymetric data; and, how to get the remaining ~80% of our planet's unmapped ocean seafloor mapped. The GGC met intersessionally in early February 2022 ahead of 38th GGC meeting in April 2022.

29. 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 20.6% (June 2021). The project is focused on mapping the gaps with three different initiatives: the Ocean Frontier Mapping, Crowd Sourced Bathymetry and Technology Innovation. It is necessary to promote the need to map the entire seabed and to encourage organizations to make their data available.

30. From September to November 2021, Seabed 2030 announced new partnerships with Woods Hole Oceanographic Institution (WHOI), EOMAP, TCarta Marine and ARGANS, signing Memorandum of Understandings in recognition of the organisations' work to advance the understanding of ocean bathymetry, and to complement the goals of the United Nations Decade of Ocean Science for Sustainable Development. Besides, new global survey calls for greater coordination of seabed mapping activities were launched in London, 15 October 2021 to give a major boost to efforts to map the entire seafloor by the end of the decade. The survey aimed to develop a more consolidated global view of seabed mapping needs in order to move towards an agreed list of strategically important priority areas for further action. It also achieved its secondary aim of finding new data that could immediately feed into the emerging global map.

31. Recommendations:

31.1 SWPHC members are encouraged to become actively involved in the GEBCO programme and its subordinate projects, to support the collection of data within their waters, and to make more detailed and comprehensive seabed data available, in particular deep ocean data from transit or commercial/scientific surveys.

31.2 SWPHC members to continue inviting GEBCO programme and Seabed 2030 project

representatives to SWPHC meetings to discuss options for deepened cooperation and support, in order to make more people aware of the importance of gaining a complete picture of the seabed.

IHO GIS and Databases

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

- IHO Country Information system, and
- IHO Online Form system.

33. 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 SWPHC 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. The status of the data in the IHO Country Information Database concerning the SWPHC Countries, including those provided for C-55 is as follows:

Country	P-5 –Yearbook Last update received	C-55 Last update received
Australia	January 2021	February 2019
Australia - Christmas Island	-	February 2019
Australia - Cocos (Keeling) Island	-	February 2019
Australia - Macquarie Island	-	February 2019
Australia - Norfolk Island	-	February 2019
Cook Islands	March 2020	February 2019
Fiji	June 2020	January 2019
France	January 2022	March 2020
France - French Polynesia	-	January 2022
France - New Caledonia	-	January 2022
France - Wallis and Futuna Islands	-	January 2022
Kiribati	March 2020	January 2019
Marshall Islands	January 2020	December 2016
Nauru	March 2020	January 2019
New Zealand	July 2021	February 2021
New Zealand - Tokelau	-	March 2014
Niue	June 2020	February 2020
Palau	February 2019	February 2019
Papua New Guinea	March 2020	December 2016
Samoa	March 2020	December 2016
Solomon Islands	March 2020	January 2020
Timor-Leste	September 2016	May 2016
Tonga	March 2020	March 2014
Tuvalu	April 2017	January 2019
United Kingdom	February 2022	December 2020
United Kingdom - Pitcairn Dependencies	-	February 2022
United States	January 2022	December 2016
United States - American Samoa	-	February 2018
United States - Howland & Baker Islands	-	February 2018
United States - Jarvis Island	-	February 2018
United States - Kingman Reef & Palmyra Island	-	February 2018
Vanuatu	October 2020	January 2018

34. 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, five WebGIS applications are available to the public in this new environment.

35. Work has continued on developing a GIS database application to support C-55 - Status of Hydrographic Surveying and Charting Worldwide and the work of the IHO. In response to the request to complement C-55 composite data (percentage of areas adequately surveyed / requiring re-survey / not surveyed) with CATZOC information. The CBSC established the C-55 Review Project Team (C-55RPT) to deal with this task.

36. **Recommendation.** *Countries in the SWPHC 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

World Hydrography Day

37. As announced with IHO CL 01/2022, the theme for WHD 2022 is “*Hydrography - contributing to the United Nations Ocean Decade*”. The theme is designed to highlight the relevant contribution of hydrography as a discipline of applied sciences to the United Nations Decade of Ocean Science for Sustainable Development (2021 – 2030). The deliberations at the 5th Council meeting confirmed that several hydrographic offices have already engaged nationally in supporting the United Nations Ocean Decade and in the efforts to reverse the cycle of decline in ocean health. The theme offers the opportunity to emphasize the competencies of hydrographers in the gathering and management of marine data and their strengths in technical collaboration on a global scale.

IHO Centenary Celebrations (IHO-100)

38. The years 2019 and 2021 are important in the history of the International Hydrographic Organization. 2019 marked the centenary of the 1st International Hydrographic Conference, which was held in London in 1919 and 2021 will be the centenary of the establishment of the International Hydrographic Bureau (IHB) in 1921 in Monaco as precursor of the modern IHO.

39. The IHO Secretariat has already organized an exhibition on "Historical Nautical Charts and Mediterranean" which was displayed at the Monaco Yacht Club from 1 to 14 April 2019, an international Symposium on “A Historical Approach for Measurements and Protection of Oceans and World Waters” at the Oceanographic Museum of Monaco from 20 to 21 June 2019 (in conjunction with the World Hydrography Day), has published an IHO Prestige Book on “100 Years of International Cooperation in Hydrography” (English and French versions have already been delivered to H.S.H. Prince Albert II of Monaco and distributed to the IHO Member States), the “Peak-of-the-peak” was held in conjunction with the World Hydrography Day (WHD) on 21 June 2021, and a Conference on “The celebration of IHO centenary” was held at Yacht Club Monaco on 17 November 2021. The centenary events could also be linked with the United Nations Decade of Ocean Science for Sustainable Development (2021-2030) which has been coordinated by the IOC of UNESCO.

International Hydrographic Review (IHR)

40. 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. SWPHC actually has not a representative on the IHR Board. As it was announced through IHO CL 03/2022, since 5 January 2022 the IHR has a new editor Dr Patrick Westfeld from Germany.

41. Papers for consideration for publication in the IHR should be forwarded directly to the editor ([ihreview@iho.int](mailto:ihrefview@iho.int), copy to ihr.editor@iho.int.com). The deadlines are:

- end of January for the May Edition
- end of July for the November Edition

42. The IHO Secretariat worked with the University of New Brunswick (UNB), Canada, in a project to develop a digital repository of the complete library of the IHR. As a result, volumes from the entire collections (1923 to 2018) are available online at: <https://journals.lib.unb.ca/index.php/ihr>.

43. To promote and modernize the distribution of the content of the IHR the IHO Secretariat is working in the development of a new IHR website with Geomares.

44. Recommendations.

44.1 *SWPHC Members are invited to submit papers for publication in the IHR.*

44.2 *SWPHC is invited to nominate a representative to the IHR Editorial Board.*

45. **Action Requested of SWPHC:**

- a) **Note** this report.
- b) **Consider** the recommendations proposed in this report.
- c) **Review** entries related to IHO C-55 and P-5 (Yearbook) at least annually.
- d) **Consider** submitting papers for publication in the International Hydrographic Review
- e) **Take any other actions** as considered appropriate.