

17th SWPHC Conference

IHO Secretariat Report

Submitted by:	Secretariat of the IHO
Executive Summary:	This paper reports on activities of the IHO Secretariat that may impact the work of the SWPHC.

Status of Membership of the IHO

1. The IHO membership stands at 93. After the last SWPHC16 Conference held in Niue, from 13-15 February 2019, the Rep of Guyana, Solomon Islands, Ghana and Samoa acceded to the IHO Convention. Unfortunately, Democratic Republic of the Congo, Serbia, Syria and Vanuatu remain suspended from Member States' rights.

INT Chart and ENC Production Coordination - Region L

2. According to the IHO Secretariat records, Australia (Mr Robert Cario), is the designated INT Chart / ENC Coordinator for Region L. The INT Chart Coordinator participated in the Workshop for INT Chart/ENC Coordinators that was held back-to-back to the NCWG5 meeting in Stockholm, Sweden in November 2019. One of the objectives of this workshop was to prepare recommendations in relation to INT charts that could be possibly included into the NCWG report on the Future of the Nautical Paper Chart that will be submitted for endorsement at HSSC12 in May 2020.

3. Considering that INTtoGIS II online services, commissioned on 2 January 2020, represent a major step forward in the management of ENC Schemes and other INT Charts, it has been decided that all regional databases will be designated Ed. 4.0.0, January 2020. The procedure to maintain and update the regional databases for ENC Schemes (and INT Charts if needed) remain the same as for INTtoGIS I.

4. The elimination of overlapping ENC data that are navigationally significant is one of the main objectives of the WEND Principles. Representatives from France, UK and the USA attended the Joint RENC and WENDWG9 meetings in Brest, France from 26 to 28 February 2019. At the date of this report, the postponement of the WENDWG10 meeting, planned in Hong Kong, China, is under consideration, due to national policies which prevent participants from travelling if the meeting falls in the non-essential category.

5. At its 14th meeting in Monaco (5-8 February 2019), the Data Quality Working Group discussed best practices on how CATZOC values should be populated for S-57 ENCs by Hydrographic Offices. In order to facilitate the harmonization and prepare the future transition to S-101 ENCs, it is recommended that SWPHC ENC Producers provide their guidelines to the DQWG.

6. Recommendation. SWPHC members to consider providing regional CATZOC practices to the DQWG. The SWPHC ENC Producers who distribute their ENCs through a RENC are also encouraged to consider the Proposed Joint RENC policy on the use of ENC CATZOC data by the IHO Secretariat (Joint RENC PRIMAR IC-ENC Letter dated 30 September 2019). This CATZOC layer is now available in INTtoGIS II (Manager Mode accessible to IHO Member States only). SWPHC members to consider that ENC Scheming is the priority (and not INT charts). SWPHC to confirm/update the WENDWG Membership as well as the INT Chart/ENC Coordinator(s) if appropriate.

Maritime Safety Information Services

7. 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 mobile satellite service provider in the GMDSS continue to be implemented. The Iridium SafetyCast service has become SOLAS carriage compliant from 1 January 2020 when the necessary amendments to SOLAS came into force.

A significant number of operational testing issues remain to be completed 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, and access to broadcast systems for transmission to their area of national responsibility.

8. **MSI Capability and Supportability.** The IHO Capacity Building strategy lays particular emphasis on the fundamental capability for all coastal States to provide a maritime safety information (MSI) service in support of their international obligations. Based on reports by the NAVAREA Coordinators to the IHO World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC) a continuing area of concern is the apparent inability for countries to support the recipients of IHO MSI training or achieve continuity of employment of these individuals within this area of responsibility.

9. Recommendations. In order to assist in identifying priorities for the provision of MSI Training, the Chair is requested to encourage all coastal States to:

- a) provide the regional NAVAREA Coordinator(s) with regular flow of MSI;
- b) maintain regular communication with the regional NAVAREA Coordinator(s) and inform of any change of personnel or contact details; and
- c) use and following the guidance provided in S-53 – *Joint IMO/IHO/WMO Manual on Maritime Safety Information*;

10. Recommendation. The Chair is requested to encourage the regional NAVAREA Coordinator(s) to provide a clear indication on the state of the provision of MSI within the area of the RHC, including the numbers of messages received from each coastal State, whether this has improved on completion of any MSI Training and identify those coastal States with whom there has been no contact over the intervening period since the last meeting of the RHC. The Chair is also requested to direct the SWPHC CB Coordinator to liaise with the regional NAVAREA Coordinator(s) to identify a priority list of States in need of MSI Training.

11. It remains vital that all planned and programmed activities with potential to impact on the maritime community are notified well in advance in accordance with S-53. Failure to do so can endanger ships and crews with a potential risk to the environment and to the national infrastructure.

Capacity Building Programme

12. The level of activity of the IHO Capacity Building (CB) Programme remained at the same level as in 2019. Expenditure in the IHO 2019 CB Work Programme (CBWP) was 872 832 Euros, 1% smaller than the budget for the previous year. 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 stakeholders. The Secretariat is continuing its campaign to find additional donor States and funding organizations. In 2019, 91% of the budgeted work program was executed and paid for.

13. The SWPHC States benefited from activities under the 2019 CBWP): Technical Implementation Visit to Niue, Technical Assessment and Advice visit to Palau and Marshall Is., and Technical Workshop on Disaster Response Planning and Data Discovery.

14. Recommendations. SWPHC members are invited to:

- a) identify opportunities in national or regional funding agencies to incorporate hydrographic development in the broader projects supporting developing countries.
- b) prepare potential candidates to be nominated to the education programmes (Hydrography and Nautical Cartography) funded by the Republic of Korea and the Nippon Foundation of Japan. Call for applications will be issued this year, similar to those in the previous year.

Crowd-Sourced Bathymetry

15. In accordance with Decision 8 of the EIHC5, IRCC7 established the Crowdsourced Bathymetry

Working Group (CSBWG) to provide guidelines on the collection and use of crowdsourced bathymetry (CSB). The CSBWG has developed the draft IHO publication B-12 – IHO Guideline on Crowdsourced Bathymetry. Edition 2.0.0 was circulated under IHO CL 11/2019 and its approval was announced in IHO CL 28/2019. Replies to Annex B of IHO CL11/2019 have been analyzed and a table of coastal States indicating positive support for the activity within all or parts of their waters of national jurisdiction has been generated and published on the IHO website for the guidance of the wider maritime community (IHO CL 47/2019 refers). Member States may advise the Secretary-General at any time of any change to their originally stated position and it is proposed to make a second request for support in the second half of 2020 after the 2nd session of the IHO Assembly.

16. The web-based interface portal to the IHO Data Center for Digital Bathymetry (DCDB), hosted by the USA in Boulder, Colorado, as part of its commitment to the system of World Data Centres, is being upgraded to be compatible with the crowdsourced bathymetry initiative. This will enable an IHO-led CSB infrastructure to be established and promoted across the wider maritime community. SWPHC members are invited to 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.

17. **Recommendation.** Encourage Members, Associate Members and Observers to:

- make data freely available for inclusion in the DCDB and the widest possible use, in accordance with IHO Resolution 11/2017;
- reply to Annex B of IHO CL 11/2019 and consider IHO CL 47/2019;
- review national legislation to remove barriers restricting CSB activities within their waters;
- actively support the collection of data within their waters;
- identify further potential sources of bathymetric measurements and survey data providers.

IHO-IOC GEBCO support through Seabed 2030 Project

18. The Nippon Foundation (NF)-GEBCO 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 14 years through the Nippon Foundation - University of New Hampshire (UNH) ocean mapping training project. 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.

19. Seabed 2030 has established a network of four regional centres. Each centre focuses on discovering, gathering and assembling all available bathymetric data from their region to produce regional datasets and resulting products. The SWPHC region is covered by the Atlantic and Indian Oceans Regional Center located at the Lamont-Doherty Earth Observatory, Columbia University, USA, and the South and West Pacific Regional Center, hosted by the National Institute of Water and Atmospheric Research (NIWA), New Zealand. 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 and all Seabed 2030 project data will be based there.

20. GEBCO released the GEBCO 2019 grid in March 2019. Based on the variable resolution coverage, which was recently calculated and takes into account current technology capabilities, the cover has increased from 6% in the 2014 grid to 15% in the current grid. Most of this increase has been achieved through the release of previous survey data, which had not been placed in the public domain and was not available to GEBCO. The 2019 grid does also include the data gathered by the two contracts in the search for MH370, which have been released by the Australian authorities. The 2020 grid is anticipated to be published in April 2020.

21. **Recommendations.** SWPHC is encouraged to;

- continue inviting Seabed 2030 project representatives to SWPHC meetings to discuss options for deepened cooperation and support;
- encourage coastal States to make more detailed and comprehensive seabed data available;

- invite coastal States to allow more stakeholders have access to authoritative information and knowledge about the seabed;
- invite coastal States to encourage local surveyors and mariners to collect more data and share it, and
- make more people aware of the importance of gaining a complete picture of the seabed.

IHO GIS and Databases

22. Work has continued on the development of the IHO GIS which is composed of two main parts:

- a country information database, and
- a regional information database.

23. The country information database has been progressively upgraded to include administrative information and facilitate the maintenance of the IHO Yearbook (IHO Publication P-5) and related lists posted on the IHO website. Countries in the SWPHC Region are invited to review their entry in the Yearbook on an annual basis and provide the IHO Secretariat with the appropriate updates or report no change. The status of the data in the IHO Country Information Database concerning the SWPHC Countries, including those provided for C-55- *Status of Hydrographic Surveying and Charting Worldwide*, is as follows:

Country	P-5 –Yearbook Last update received	C-55 Last update received
Australia	January 2020	January 2020
Australia - Christmas Island	-	February 2019
Australia - Cocos (Keeling) Island	-	February 2019
Australia - Macquarie Island	-	February 2019
Australia - Norfolk Island	-	February 2019
Cook Islands	February 2019	February 2019
Fiji	September 2019	January 2019
France	January 2020	July 2019
France - French Polynesia	-	January 2020
France - New Caledonia	-	January 2020
France - Wallis and Futuna Islands	-	January 2020
Kiribati	February 2019	January 2019
Marshall Islands	August 2019	December 2016
Micronesia (Federated States of)	No information	No information
Nauru	January 2017	January 2019
New Zealand	January 2020	February 2019
New Zealand - Tokelau	-	March 2014
Niue	November 2017	February 2019
Palau	February 2019	February 2019
Papua New Guinea	February 2018	December 2016
Samoa	January 2020	December 2016

Country	P-5 –Yearbook Last update received	C-55 Last update received
Solomon Islands	January 2020	January 2020
Timor-Leste	September 2016	May 2016
Tonga	September 2019	March 2014
Tuvalu	April 2017	January 2019
United Kingdom	November 2019	February 2018
United Kingdom - Pitcairn Dependencies	-	January 2019
United States	September 2019	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	September 2019	January 2018

24. An Esri-based GIS solution is being implemented to develop further the regional information database. This will enable access to various layers of information through the IHO website and through cloud-based online GIS options. The IHO ENC Catalogue and the IHO GIS for Antarctica have been transferred to this new environment. Several other layers are already available from the IHO website.

25. 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.

26. 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 Council

27. The third meeting of the IHO Council took place in Monaco, from 15-17 October 2019. The summary report for this meeting is available from the IHO website at (<https://iho.int/en/3rd-council-meeting-2019>). The 4th meeting is scheduled to take place at the IHO Secretariat, Monaco from 20 to 22 October 2020.

IHO Centenary Celebrations (IHO-100)

28. The years 2019 and 2021 are important in the history of the International Hydrographic Organization. 2019 marks 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.

29. The IHO Secretariat has already undertaken the preparations and execution for the centenary celebrations of the International Hydrographic Organization ranging from 2019 to 2021 as important milestones of the IHO. A symposium, an exhibition, outreach events and similar activities were executed in 2019 and others are planned in 2020 and 2021, either independently or jointly with sister institutions and agencies. The "peak-of-the-peak" will be World Hydrography Day (WHD), see paragraph 32. There will also be an opportunity to present IHO's achievements at the United Nations General Assembly in September 2021 and at the IMO Assembly in November 2021.

30. The main activities held and other scheduled for the IHO centenary celebrations, coordinated by the IHO Secretariat are as follows (CL 32/2017 refers):

- An exhibition on "Historical Nautical Charts and Mediterranean". This event was held at the Monaco Yacht Club from 1 to 13 April 2019, with a resounding success.
- An international Symposium on "A Historical Approach for Measurements and Protection of Oceans and World Waters". This event was held at the Oceanographic Museum of Monaco from 20 to 21 June 2019 (in conjunction with the World Hydrography Day).
- To highlight the centenary celebrations as part of the media and press-campaign associated with the Council meetings in 2020 and 2021.
- To organize a half day special session on IHO-100 at the 2nd Session of the IHO Assembly (A-2) in April 2020.
- To prepare, publish and distribute an IHO Prestige Book on "100 Years of International Cooperation in Hydrography".
- To hold the 2021 World Hydrography Day in Monaco in conjunction with IRCC13, CBSC19 and a CB/IBSC Stakeholders' Seminar.
- 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.

World Hydrography Day

31. At the third IHO Council meeting in October 2019, the Secretary-General proposed the theme for WHD 2020 as follows: "Hydrography - enabling autonomous technologies". The theme highlights the role of hydrography in various dimensions: for the conduct of hydrographic survey itself by means of autonomously acting sensor carriers such as autonomous surface vehicles (ASV), autonomous underwater vehicles (AUV) and flying drones to carry lidar equipment. The second important field is to pave the way for the expected development of safe, secure and environmentally sound Maritime Autonomous Surface Ships (MASS) operations under the auspices of the IMO which will definitely rely on qualified hydrographic information.

32. Following comprehensive redesign, the IHO website, including GIS-services was launched on 20 of December 2020. The new website, which is in both English and French, has a responsive design that is suitable to be viewed on large computer screens, tablets and mobile phones. It has a simplified intuitive menu structure that is based on the three IHO programmes.

International Hydrographic Review

33. 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. The representative for the SWPHC is yet to be defined. The IHO Secretariat is sad to announce that Mr. Ian Halls (Australia), the IHR Editor, passed away in May 2019. He had been the Editor from 2011 to 2019, until his disappearance. Assistant Director Alberto Costa Neves was the acting Editor for the November Edition of the IHR. Mr. Brian Connon (USA) has been assigned the IHR Editor from 1 January 2020.

34. Papers for consideration for publication in the IHR should be forwarded directly to the editor (ihreview@iho.int, copy to Brian.Connon@usm.edu). The deadlines for submissions are:

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

35. The IHO Secretariat has been working with the University of New Brunswick (UNB), Canada, in a project to develop and maintain a digital repository of the complete library of the IHR. As a result, the full collection of the IHR from 1923 can be found at: <https://journals.lib.unb.ca/index.php/ihr> or from the link in the IHO website.

36. Recommendation: encourage SWPHC hydrographic community to submit articles and notes to the IHR, in order to promote the achievements and developments in the region.

37. Actions Requested of SWPHC:

- a) **Note** this report
- b) **Consider** providing regional CATZOC practices to the DQWG (**Paragraph 6**)
- c) **Consider** the recommendations on MSI as presented in **Paragraphs 9 and 10**
- d) **Consider** identifying opportunities in national or regional funding agencies to incorporate hydrographic development in the broader projects supporting developing countries (**Paragraph 14**)
- e) **Consider** preparing potential candidates to be nominated to the education programmes in Hydrography and Nautical Cartography (**Paragraph 14**)
- f) **Consider** the recommendations concerning crowdsourced bathymetry (**Paragraph 17**)
- g) **Consider** providing support to the IHO-IOC GEBCO Seabed 2030 project. (**Paragraph 21**)
- h) **Review** entries related to IHO C-55 and P-5 (Yearbook) at least annually (**Paragraph 26**)
- i) **Consider** promoting the 2020 theme of the World Hydrography Day (**Paragraph 32**)
- j) **Consider** engaging with the SWPHC hydrographic community to submit articles and notes to the International Hydrographic Review (**Paragraph 37**)
- k) **Take any other actions** as considered appropriate