

**Paper for Consideration by  
MACHC19 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 Meso American - Caribbean Sea Hydrographic Commission.

**Operations of the Organization under the IHO Convention since the last MACHC Conference (MACHC18) in 2017**

1. Since last MACHC Meeting the second meeting of the Council (C-2) was held in London in October 2018. The main outcomes of the 2<sup>nd</sup> meeting of the IHO Council were reported in CL 51/2018. The Council agreed to hold C-3 in Monaco, at the IHO Secretariat, from 15 to 17 October 2019.

2. Regional Hydrographic Commissions are established in its own right by statutes and recognized by the Assembly (Article 8 of IHO General Regulations). They are sovereign to identify tasks, ways and means to address the specifics of hydrography within their respective region. With regard to the interrelation between the Regional Hydrographic Commissions and the Assembly, Regional Hydrographic Commissions enjoy the right to report to the Assembly directly. However, the applicable IHO Resolution 2/1997 is under review. The Secretariat proposes to discuss how reporting items of relevance shall be synchronized with the Council Chair report to the Assembly which is largely based on the annual IRCC chair report put forward to the Council.

**3. Recommendations. MACHC to consider:**

a) Discuss how the MACHC reporting to the Assembly shall be synchronized with the Council Chair report to the Assembly.

**Status of Membership of the IHO**

4. 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. In 2017 **Malta, Vanuatu, Seychelles** and in 2018 **Bulgaria** acceded to the IHO Convention and became the 86<sup>th</sup>, 87<sup>th</sup>, 88<sup>th</sup> and 89<sup>th</sup> Member States of the IHO respectively. On 1 January 2018 **Dominican Republic** was reinstated as Member State, suspended since 1983. Unfortunately there are still three Member States remaining suspended, Democratic Republic of the Congo, Serbia and regrettably Syria was recently suspended from Member States rights, being in arrears in its contributions now for two consecutive years.

5. The following Associate Members of the MACHC have yet to apply to become members of the IHO: Antigua and Barbuda, Barbados, Belize, Costa Rica, El Salvador, Grenada, Guyana, Haiti, Honduras, Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines. All are Member States of the UN. The MACHC is encouraged to engage with Bahamas and Dominica (coastal States in the Region that are not Associate Members) and Bermuda (Region A) to raise awareness on the importance and value of hydrography.

**Preparation of the Second IHO Assembly**

6. The second IHO Assembly is scheduled to take place from 21 to 24 April 2020. The announcement and draft agenda of the Assembly-2 will be issued in April 2019. The IHO Work Programme and budget for the next 3 year (2021-2023) will be prepared for approval of the Assembly.

## INT Chart and ENC Production Coordination - Region L

7. Mr. John NYBERG (USA) is the designated INT Chart / ENC Coordinator for Region B.
8. The status of the INT chart scheme for Region B is contained in Edition 3.0.3 of S-11 Part B which was made available in January 2018. According to the S-11 Part B Web Catalogue<sup>1</sup>, there are 82 INT charts in the scheme, from which 53 have been produced and published. All MACHC members and associated members are requested to check their individual entries and provide updated information as appropriate. Adoption of Ed. 3.1.0 of IHO Publication S-11 Part A requires new arrangements for the monitoring of INT charts ([CL 11/2018](#) refers).
9. Early January 2018, the IHO Secretariat informed the Chart Coordinators that the project INTOGIS Phase II was underway, thanks to the outstanding support provided by KHOA (Republic of Korea). For more information, see Doc. [HSSC9-11A-INF1](#). INTOGIS Phase II aims to provide a very useful scheming tool, putting together ENC and INT charts, new base maps and some useful tools for a more efficient and consistent INT chart and ENC scheming (AIS data base, overlap checker, etc.). As agreed at the last WENDWG meeting, some Chart Coordinators are now experimenting INTOGIS II before it is commissioned and made available to all, hopefully early next year. The Region G Coordinator has already provided his initial feedback to the IHO Secretariat.
10. The elimination of overlapping ENC data that are navigationally significant is one of the main objectives of the WEND Principles. A new IHO Resolution addressing this issue was adopted by IHO Member States (See IHO [CL 19/2018](#) – *Adoption of new IHO resolution on the elimination of overlapping ENC data*). WENDWG8 (20 to 22 March 2018, in Buenos Aires, Argentina) considered the outcome of this resolution and IRCC10 endorsed the resulting report. MACHC was represented at the WENDWG8 meeting. The MACHC should also note the comment provided by France in preparation of the 2<sup>nd</sup> meeting of the Council (See Doc. [C2-4.2B](#)).
11. At its 13<sup>th</sup> meeting in Monaco (January 2018), the Data Quality Working Group arranged a workshop where participants shared their best practices on the way CATZOC values are 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 MACHC ENC Producers provide their guidelines to the DQWG.
12. **Recommendations. MACHC to consider:**
  - a) the results of the WENDWG8 meeting held in March 2018;
  - b) providing regional CATZOC practices to the DQWG; and
  - c) the maintenance of ENC Schemes when the INTOGIS Phase II is commissioned.

## Maritime Safety Information Services

13. 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.

**14. Recommendations.** The Chair is requested to encourage all coastal States to:

- a) maintain regular communication with the regional NAVAREA Coordinator(s) and inform of any change of personnel or contact details;
- b) use and follow the guidance provided in S-53 – *Joint IMO/IHO/WMO Manual on Maritime Safety Information*;
- c) request National Coordinators to review the contents of the relevant Annexes of the GMDSS Master Plan (GMDSS.1/Circ.21 31May 2017 refers) and to use the annexed questionnaire for electronic submission, whilst also cross checking the details submitted for inclusion in IHO publication C-55 for consistency; and

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<sup>1</sup> As of 19 November 2018

- d) report, as appropriate, on the outcomes of IMO Mandatory/Voluntary Audits that have occurred in their country, which may include recommendations on MSI, hydrographic and charting matters.

### **Capacity Building Programme**

15. The level of activity of the IHO Capacity Building (CB) Programme decreased in 2017. Expenditure in the IHO 2017 CB Work Programme (625 952 Euros) was 18% 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. The Secretariat is continuing its campaign to find additional donor States and funding organizations. In 2017, 80% of the budgeted work program was executed and paid for. Estimated expenditures for the 2018 CBWP are expected to return to previous level.

16. The MACHC States benefited from activities under the IHO CB Work Programme (CBWP): Technical Visit to Guatemala, Seminar on Raising Awareness of Hydrography (Cartagena, Colombia) and MBES Processing (Cartagena, Colombia). Additionally, Colombia (Mr Harold ROJAS MACIAS) and Jamaica (Mr Omar O'Neil GREY) were selected to attend the Hydrographic Survey Program, Category "B" (Busan, Republic of Korea). Participants in the region also attended activities in the SEPRHC and SWAtHC as approved by the CBSC.

**17. Recommendations.** MACHC members are invited to identify opportunities in national or regional funding agencies to incorporate hydrographic development in the broader projects supporting developing countries.

### **Crowdsourced Bathymetry**

18. 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. Member States and other interested parties were invited to nominate representatives to participate in the CSBWG (see IHO CL 42/2015). The CSBWG has developed the draft IHO publication B-12 – IHO Guideline on Crowdsourced Bathymetry, which has completed extensive stakeholder and IHO Member State consultation. Edition 1.0.0 was presented to IRCC10 for endorsement and subsequently endorsed by the IHO Council-2 with the caveat that "This document provides technical guidelines only that in no way supersede or override national or international laws and regulations". Work has commenced on the draft of Edition 2.0.0 (Action C2/23 refers); additionally as a result of Decision C-1/31 IRCC10 endorsed to enlarge the scope of the tasking of the CSBWG, the CSBWG drafted revised ToRs.

19. 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 Centers, is being upgraded to be compatible with the crowdsourced bathymetry concept. This will enable an IHO-led CSB infrastructure to be established and promoted in the IMO and across the wider maritime community.

**20 Recommendations.** MACHC members are invited to identify further potential sources of bathymetric measurements and survey data providers to be facilitate the further completion of the DCDB data holdings.

### **GEBCO support through Seabed 2030**

21. 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) training project. Through Seabed 2030, GEBCO's role will be recognized and reinforced as the authoritative international initiative for mapping the World Ocean, from the coasts to the deepest trenches. The project will champion, develop and nurture the technical and human capacity to complete this task by 2030.

22. Seabed 2030 has established a network of 4 regional centers. Each center focuses on discovering, gathering and assembling all available bathymetric data from their region to produce regional datasets and resulting products. The Atlantic and Indian Oceans are covered by the center located at the Lamont Doherty Earth Observatory (LDEO). A global center 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 data based there.

**23. Recommendations.** MACHC members are invited to consider the future invitation of Seabed 2030 project representatives to MACHC meetings to discuss options for deepened cooperation and support.

### **IHO GIS and Databases**

24. 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.

25. The country information database has been progressively upgraded to include additional 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 MACHC 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 updates in the IHO Country Information Database concerning the MACHC Countries, including those provided for C-55, is as follows:

<b>Country</b>	<b>P-5 –Yearbook Last update received</b>	<b>C-55 Last update received</b>
Antigua and Barbuda	Nov 2012	Nov 2017
Bahamas	Oct 2016	Nov 2017
Barbados	Jun 2015	Nov 2017
Belize	Oct 2018	Nov 2017
Brazil	Oct 2018	Nov 2017
Colombia	Apr 2018	Dec 2015
Costa Rica	No update date	No update date
Cuba	Aug 2018	Dec 2016
Dominica	No update date	May 2007
Dominican Republic	Mar 2018	No update date
El Salvador	Apr 2017	Dec 2016
France - Clipperton Island	Feb 2018	Jun 2017
France - French Antilles	Feb 2018	Jun 2017
France - Guyana	Feb 2018	Jun 2017
Grenada	Nov 2012	May 2007
Guatemala	Oct 2017	Dec 2015
Guyana	Feb 2017	May 2007
Haiti	Jun 2017	Dec 2016

Country	P-5 –Yearbook Last update received	C-55 Last update received
Honduras	Feb 2014	Nov 2005
Jamaica	Mar 2017	Nov 2017
Mexico	Oct 2017	Nov 2012
Netherlands - Leeward Islands	Nov 2018	Dec 2017
Netherlands - Windward Islands	Nov 2018	Dec 2017
Nicaragua	Apr 2017	No update date
Panama	Sep 2017	Dec 2016
Saint Kitts and Nevis	No update date	May 2007
Saint Lucia	No update date	May 2004
Saint Vincent and the Grenadines	Oct 2014	Nov 2017
Suriname	Mar 2017	Mar 2017
Trinidad and Tobago	Jan 2018	Sep 2017
UK - Anguilla	Oct 2016	Nov 2018
UK - British Virgin Is	Oct 2016	Nov 2018
UK - Cayman Islands	Oct 2016	Nov 2018
UK - Montserrat	Oct 2016	Nov 2018
UK - Turks & Caicos Is	Oct 2016	Nov 2018
USA - INT Region B	May 2018	Dec 2016
USA - Puerto Rico, US Virgin Is. & Navassa Is.	May 2018	May 2007
Venezuela (Bolivarian Republic of)	Aug 2018	Jan 2009

26. 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 on-line GIS options. The IHO ENC Catalogue and the IHO GIS for Antarctica have been transferred to this new environment.

27. 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 (see IHO CL 52/2015), CATZOC data was provided by PRIMAR - on behalf of IC-ENC, PRIMAR and Canada, Singapore, Sweden and Thailand. Useful options for visualizing the data in the IHO C-55 GIS are being investigated.

28. The IHO Secretariat is developing an online form to allow Member States to input data to the Yearbook and to C-55. A CL will be issued to provide instructions on its use.

**29. Recommendations.** Countries in the MACHC 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.

## **IHO Outreach**

World Hydrography Day

30. The WHD theme for 2018, as announced by IHO CL 52/2018, is **“Bathymetry - the foundation for sustainable seas, oceans and waterways”**. This theme was intended to raise awareness for a better understanding of the depth and shape of the seafloor, which is key to a broader understanding of the natural processes and the success of all human activities in, on or under the sea.

31. Taking into account the discussions at the first IHO Council meeting held in Monaco in October 2017, the proposed theme of the World Hydrography Day for 2019 is (CL 52/2018 refers):

**“Hydrographic information to drive Marine knowledge”**

32. Following comprehensive redesign, the IHO website, including GIS-services will be renewed on 21 June 2019 coincides with WHD-2019. The new website, which would have versions in both English and French, would have a functional but creative design that paid respect to tradition and was fit for modern technology. The IHO emblem had also been slightly modified and will be in effect at the WHD-2019.

33. It has been considered that the current IHO communication strategy is completely lacking the provision of social media. The Secretariat therefore gladly accepted the temporary secondment of the social media expert through NOAA (USA) to assist the future set up and maintenance of such a component.

### **International Hydrographic Review**

34. 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. MACHC is represented by Mr. Chris Thorne (UK).

35. Papers for consideration for publication in the IHR should be forwarded directly to the editor (ihreview@iho.int, copy to ian.halls1@defence.gov.au). The deadlines are:

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

36. 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>.

37. Based on the considerations raised in the course of the communication overhaul discussions (paragraph 33), the Secretariat proposes a digital revamp of the International Hydrographic Review (IHR). First consultations were held with the Editor in Chief of the IHR, Mr Ian Halls. The following principal changes are proposed jointly:

- Design and building new separate website [www.ihr.iho.int](http://www.ihr.iho.int) using the new corporate design.
- Design the International Hydrographic Review as online publication and printable version (PoD).
- Facilitate technical options to create customized topical compilations from the digital repository of IHR articles for pdf-download and print.

38. Further and more detailed information was presented at and endorsed by the second IHO Council meeting in London in October (Decision C2/46 refers).

**39. Recommendations.** MACHC Members are invited to submit papers for publication in the IHR.

### **IHO Centenary Celebrations (IHO-100)**

40. The years 2019 and 2021 will be important in the history of the International Hydrographic Organization. 2019 will mark the centenary of the 1<sup>st</sup> 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.

41. The IHO Secretariat has already undertaken the preparations for the centenary celebrations of the International Hydrographic Organization ranging from 2019 to 2021 as important milestones of the IHO. In this respect, it is planned to organize workshops, exhibitions, outreach events and similar activities from 2019 to 2021, either independently or jointly with sister institutions and agencies. **The” peak-of-the-peak” will be World Hydrography Day (WHD) on 21 June 2021.** 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.

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

- To hold an exhibition on "*Historical Nautical Charts and Mediterranean*" which will be displayed at the Monaco Yacht Club from 1 to 13 April 2019,
- To organize an international Symposium on "*A Historical Approach for Measurements and Protection of Oceans and World Waters*" is scheduled to be held at the Oceanographic Museum of Monaco from 20 to 21 June 2019 (in conjunction with the World Hydrography Day), Call for Papers of this Symposium has already been circulated.
- To highlight the centenary celebrations as part of the media and press-campaign associated the Council meetings in 2019 and 2021.
- To organize a half day special session on IHO-100 at the 2<sup>nd</sup> 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*".

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.

**Action Requested of MACHC:**

- a) **Note** this report
- b) **Consider** the recommendations on Council/Assembly interactions as presented in **Paragraph 3**
- c) **Consider** the recommendations on Charting as presented in **Paragraph 12**
- d) **Consider** the recommendations on MSI as presented in **Paragraph 14**
- e) **Consider** the recommendations on Capacity Building in **Paragraph 17**
- f) **Consider** the recommendations on Crowd Sourced Bathymetry in **Paragraph 20**
- g) **Consider** the recommendations on Seabed 2030 collaboration in **Paragraph 23**
- h) **Review** entries related to IHO C-55 and P-5 (Yearbook) at least annually (**Paragraph 29**)
- i) **Consider** submitting papers for publication in the International Hydrographic Review (**Paragraph 39**)
- j) **Take any other actions** as considered appropriate