SOUTH WEST ATLANTIC HYDROGRAPHIC COMMISSION

15TH MEETING, VTC, 31 AUGUST - 01 SEPTEMBER2021

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 South West Atlantic 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 SWAtHC14 Lebanon and Kenya acceded to the IHO Convention and the IHO membership now stands at 95. Unfortunately, Democratic Republic of the Congo, 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 SWAtHC region, Bolivia and Paraguay are still to submit their instrument of accession. The IHO Secretariat, in cooperation with the Department of External Relations of the Government of Monaco, stands ready to assist these non-Member States, through diplomatic or other channels.

IHO Council Activities

3. Due to COVID-19 restrictions, the fourth meeting of the IHO Council (C-4) took place on 19 November 2020 via video conference, just after the 2nd Assembly (A-2). The Council had been tasked with making the Strategic Plan real, a task that must be accomplished quickly to ensure that the IHO reaches its goals. Besides, the A-2 had also tasked the Council with implementation of the S-100 Roadmap, which included S-100 standards and offered increasing safety of navigation by ensuring that the most up-to-date information is available with the vision of its delivery to mariners seamlessly integrated with other data such as navigational aid information and weather. The A-2 had tasked the Council to work through the technical, operation and regulatory challenges associated with the transition from paper-based products and S-57 ENCs to the S-100 suite of standards and services. Summary report of the 4th Meeting of the IHO Council is available at the IHO web site.

4. The fifth meeting of the IHO Council is scheduled to take place in Monaco, from 19 to 21 October 2021 as virtual meeting. The preparation of this meeting has already started (See CCL 01/2021). A revised provisional agenda together with supporting documents is already available on the IHO website.

2nd Session of the IHO Assembly

5. The 2nd IHO Assembly initially scheduled to take place in April 2020, was postponed to November 2020 due to the pandemic situation. For the same reason it was necessary to propose an alternative scenario to conduct the forthcoming Assembly session and Council meeting as remote events. IHO ACL19/2020 informed about the positive vote of the Member States in favour of the proposed scenario on the postponement of the 2nd Session of the IHO Assembly (A-2) and associated activities resulting from exceptional circumstances due to COVID-19 (IHO ACL 17/2020 refers). This

scenario, approved by vote by 21 September 2020, is explained in the Assembly Circular Letter ACL29Rev1/2020.

6. As a consequence, the Secretariat invited Member States to vote by correspondence on proposals submitted for consideration by the 2nd session of the Assembly (IHO ACL 21/2020 and IHO ACL 22/2020). Among other items, IHO ACL 26/2020 reported on the approval of the Revision of the IHO Resolution 2/1997 – Establishment of Regional Hydrographic Commissions (RHC) (Assembly Document A2_2020_PRO3-1_EN_Res_21997_cc_v1). All the documents related to the 2nd Assembly are available at the IHO website.

7. At the A-2 the IHO Member States approved the new IHO Strategic Plan which lays out the organization's priorities for the coming years (2021-2026). The inclusion of Goal 3 related to participation in international initiatives on the sustainable use of the oceans, confirms that the IHO is now, also, clearly committed to reconciling the use and the preservation of the marine environment, in line with the global initiatives, such as UN Decade for Ocean Science and Seabed2030. Assembly participants approved the Roadmap for the implementation of the IHO Universal Data Model (S-100) which can be utilized by all users of ocean data including navigation, marine energy, oceanography etc. The IMO e-navigation Strategy Implementation Plan requires that all Maritime Services be S-100 conformant, as it specifies the method for data modelling and developing product specifications. A-2 also approved the establishment of the joint IHO-Singapore Innovation and Technology Laboratory in Singapore to coordinate and test-bed initiatives under the proposed composition, governance structure and terms of reference for the governing board and the management team.

8. Member States also approved the new project proposed by Canada on Empowering Women in Hydrography - EWH, which aims to increase gender equity and the number of women in leadership positions. The project will include training and communication on different hydrographic careers. With IHO CL 20/2021, the Secretariat encouraged the Member States to consider the recommendation of the 2nd Session of the Assembly (A-2 Decision 36) to take part in the Project, which intends to contribute to reduce the imbalance in the participation of women in Hydrography.

9. Finally, as clear example of how the Hydrographic Community is evolving and dealing with extraordinary circumstances, the Assembly approved the establishment of a new IHO e-learning centre hosted by the Republic of Korea at the Korea Hydrographic and Oceanographic Agency (KHOA). The organization had been wanting to increase the offering in terms of distance training for some time and the current pandemic highlighted the need for this.

10. **Recommendation.** SWAtHC is invited to consider the need to adapt their respective instruments to comply with the recommendations of the IHO Resolution 2/1997 as amended by A-2 as appropriate.

Capacity Building Programme

11. The level of activity of the IHO Capacity Building (CB) Programme was clearly affected in 2020 by the COVID 19 Pandemic. Expenditure in the IHO 2020 CB Work Programme (CBWP) was 42,125.00 Euros, a value that cannot be compared with the previous years. It is also expected that the current year is significantly affected by the COVID 19 Pandemic and that most of the 2021 CBWP projects need to be moved to the 2022CBWP. In the CBSC19 Intersessional Meeting, Decision 5 approved that "Only the 2021CBWP funded activities will be moved to the 2022CBWP…". SWAtHC has three funded CB projects in the 2021CBWP:

- A-09 - Technical Visit to Bolivia (former 2020 A-02);
- P-12 - Seminar on Raising Awareness of Hydrography;
- P-18 - Port and Shallow Water Survey Course.

12. Captain Helber Carvalho (Brazil) is the SWAtHC CB Coordinator for planning and implementing the regional CB activities.

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

Maritime Safety Information Services

14. 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. However, 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, 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.

15. **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.

16. **Recommendations**. The Chair is requested to encourage all SWAtHC members to:

a. 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;
b. Use and follow the guidance provided in S-53 – Joint IMO/IHO/WMO Manual on Maritime Safety Information.

Crowd-Sourced Bathymetry, GEBCO and Seabed2030

17. In accordance with Decision 8 of the EIHC5, IRCC7 established the Crowdsourced Bathymetry Working Group (CSBWG) to develop guidelines on the collection and use of crowdsourced bathymetry (CSB). The CSBWG generated 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 as Edition 2.0.3 was announced in IHO CL 28/2019. Replies to Annex B of IHO CL11/2019 and to CL 21/2020 have been analysed and a table of coastal States indicating positive support for the activity and the provision of data into the public domain 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.

18. The web-based interface portal to the IHO Data Centre 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. The DCDB has developed a geographic filter application, which suppresses embargoed data from public availability and places this data in a separate data store until such time as approval is given for its release into the public domain. The DCDB has also commenced initial discussions with the International Seabed Authority (ISA) on suitable methods for making its data available, either into the

DCDB or directly into the GEBCO grid. The DCDB is also in advanced discussion with a number of commercial shipping companies to extract bathymetric data from their voyage data recorder systems.

19. At the IRCC12 a submission has been made in coordination with GEBCO and Seabed 2030, for RHC to identify regional coordinators to act as a point of contact and to raise the profile of data gather and provision within their respective Region, all with the view of increasing awareness and highlighting the link between gaining a complete picture of the ocean floor with the UN Decade and the SDGs. The regional coordinators would have a key role in assisting the RHC in gathering the evidence and reporting annually on the percentage coverage achieved within their Region. They would also be in a position to assist individual coastal states.

20. A series of meetings related to the GEBCO project were held online from 11 to 20 January 2021. The engagement with the IHO Crowdsourced Bathymetry Working Group (CSBWG) and the various Regional Hydrographic Commissions was noted and a number of regional projects and initiatives were highlighted, including AusSeabed and work with the Schmidt Ocean Institute vessel RV *Falkor* around the Australian coast, various projects in Canada and an initiative to restart the South East Pacific Bathymetric Chart through collaboration between the South East Pacific Regional Hydrographic Commission (SEPRHC) member states. Activities in China, Ireland, USA and Europe under the European Marine Observation and Data Network (EMODnet) were presented.

21. For the thirteenth consecutive year, the GEBCO Project organized a symposium on the theme of 'Map the Gaps'. The symposium was held as a series of webinar sessions and opened by Dr Vladimir Ryabinin, Executive Secretary of the IOC, and Capitaine de vaisseau Pierre-Yves Dupuy, Deputy Director Service hydrographique et océanographique de la Marine (Shom) and Director Public Services and International Relations. The symposium, which included contributions from a broad spectrum of institutions involved in all aspects of ocean mapping, featured 34 presentations on a diverse range of topics and one panel session on Diversity, Equity and Inclusion in Ocean Mapping. The symposium was closed by Director Luigi Sinapi. The associated presentations and session recordings are available from the GEBCO web site at: (https://www.mapthegaps.org/symposium/).

22. **Recommendations**. SWAtHC members are invited to:

a. 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.

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

b. Reply to IHO CL 21/2020;

c. Review national legislation to remove barriers restricting CSB activities within their waters;

d. Actively support the collection of data within their waters.

GEBCO support through Seabed 2030 Project

23. 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 17 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.

24. 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 SWAtHC region is covered by the Atlantic and Indian Oceans Regional Center located at the Lamont-Doherty Earth Observatory, Columbia University, USA; the Arctic and North Pacific Oceans Regional Center co-located at Stockholm University, Sweden, and University of New Hampshire, Durham, USA and the South and West Pacific Ocean located at the National Institute of Water and Atmospheric Research (NIWA), New Zealand are the other Regional Centers. A global centre, established at the National Oceanographic Centre (NOC), UK, merges the regional datasets to generate 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.

25. GEBCO plans to release the updated GEBCO on annual basis now. The 2021 grid was published in May 2021. 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 20,6% in the 2021 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 included the data gathered by the two contracts in the search for MH370, which have been released by the Australian authorities. The 2020 included data from the five deeps project. There remains a considerable quantity of data still held by governments, academic institutes and industry embargoed for a variety of reasons. To avoid wasting scarce resources re-surveying these areas, authorities and organizations are invited to consider whether lower resolution (100m or 200m grid) datasets of these data can be made available rather than the simple 'Yes/No' approach.

26. **Recommendations**. Encourage Members, Associate Members and Observers to:

a. Continue inviting Seabed 2030 project representatives to SWAtHC meetings to discuss options for deepened cooperation and support;

b. Make more detailed and comprehensive seabed data available – in particular deep ocean data from transit or commercial / scientific surveys, in order to increase awareness on the importance of gaining a complete picture of the seabed.

IHO GIS and Databases

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

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

28. 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 SWAtHC 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 SWAtHC Member States, including those provided for C-55 is as follows:

Country	P-5 –Yearbook Last update received	C-55 Last update received
Argentina	February 2020	April 2020
Bolivia	n.d.	May 2019
Brazil	February 2021	March 2021
Paraguay	April 2020	December 2003
Uruguay	April 2020	March 2020

29. 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 have been available to the public in this new environment.

30. 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.

31. **Recommendation.** Countries in the SWAtHC 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

32. Considering the impact of digital outreach, the new IHO website totaled 258,363 page views in 2020. The substantial increase in online communication, including social media, resulted in a 191% increase in followers on the IHO LinkedIn page with a new record of 30,000 total views for June 2020. On Twitter, the account was created at the end of 2019, and recorded 17,200 total views in April 2020. The video on World Hydrography Day had over 16,000 views on the YouTube channel. These initiatives have contributed to raising awareness about the IHO's activities among hydrographers, but also among a wider audience.

<u>IHO Centenary Celebrations (IHO-100)</u>

33. The IHO Centenary celebrations ranging from 2019 to 2021, are important milestones of the IHO. In this respect, a Prestige Book was issued in 2020, and a commemorative stamp was issued by the Principality of Monaco on 26 February 2021 for the IHO Centenary. With the IHO CL 16/2021, it was established that the major focus of the IHO Secretariat's outreach activities for 2021, as reported at the 2nd IHO Assembly, will be the celebration of the 100th anniversary of the creation of the International Hydrographic Bureau on 21 June 1921 – later to become the Secretariat of the International Hydrographic Organization. According to Decision A2/15, the "**Peak-of-the-peak**" event was originally planned for World Hydrography Day (WHD 2021) on 21 June 2021 with Member State representatives coming to participate in person. But, in consideration of the continued travel and physical meeting limitations induced by the COVID19 pandemic, the IHO Secretariat has decided to reformat the celebrations. The "Peak-of-the-peak" event was planned as a hybrid event (cfr. IHO CL 21/2021) and consisted in an initial part at the IHO Secretariat with four speeches, then an exhibition of modern survey technology in Monaco harbour, a visit to the Italian Navy tall ship Amerigo Vespucci, and a panel discussion. The entire event is available in digital format, for the benefit of all the IHO Member States.

International Hydrographic Review (IHR)

34. The IHR is a pdf publication, with peer-reviewed articles, with two editions a year and an annual printed copy consisting of a compilation of the articles. Access to this publication is free via the IHO website and without restriction. Member States are strongly urged to contribute to the Review as an important means of sharing information on their activities and developments within the hydrographic community. Other organizations or individuals working in related hydrographic fields, are also invited to contribute to this publication. Through its 98 years of existence, the IHR has counted on the important collaboration of the worldwide Hydrographers, most from the Member States Hydrographic Offices, and from the members of the IHR Editorial Board that have contributed to the maintenance of this important publication.

35. Capt (ret) Brian Connon (USA) was appointed as new IHR Editor with effect from January 2020. In his first editorial he expressed the intention to continue the evolution of the IHR to "best serve the need of the IHO and the hydrographic community" and be "the journal of choice for hydrographic content". As a sign of the changes that were implemented in 2020, the cover page of the IHR was aligned with the most recent branding image of the IHO. The IHR provides an ideal opportunity for Regional Hydrographic Commissions and Member States to publicise technical and other achievements in the region. An editorial board comprising a representative from each region has been established.

36. At the IHO Secretariat, a dedicated team composed by some IHO staff and the IHR Editor worked on the IHR Website, that was launched in association with the celebrations of the IHO 100th Anniversary and is available in: https://ihr.iho.int/. This new website aims to modernize the issue of the IHR contents in a more attractive and functional way. One important aspect is the classification of the articles by collections, to allow the users to better find the articles by the respective main topics (collections).

37. **Actions Requested of SWAtHC:**

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.