Paper for Consideration by
16th SAIHC 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 Southern African and Islands Hydrographic Commission.

Preparation of the 2nd IHO Assembly

1. The 2nd IHO Assembly is scheduled to take place from 21 to 24 April 2020. The announcement and draft agenda of the A-2 (See ACL 01) and some additional ACLs have already been issued. The IHO Work Programme and budget for the next 3 years (2021-2023) will be prepared for approval of the Assembly.

Outcomes of the 2nd Meeting of the IHO Council

2. The main outcomes of the 2nd meeting of the IHO Council were reported in IHO CL51/2018. The 3rd meeting of the IHO Council is scheduled to take place in Monaco, from 15 to 17 October 2019. The preparation of this meeting has already started (See CCL 01/2019). It can be noted that in accordance with the Rules of Procedures of the Council, the deadline for submission of proposals by IHO Member States was 15 July 2019, while comments on proposals to be included in the Red Book for the Council was expected by 6 August 2019.

Status of Membership of the IHO

3. 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 SAIHC Conference **Guyana and Solomon Islands** acceded to the IHO Convention and became the 90th and 91st Member States of the IHO respectively. On 1 January 2018 **Dominican Republic** was reinstated as Member State, suspended since 1983. Unfortunately Democratic Republic of the Congo, Serbia and Syria remain suspended from Member States rights.

Regional Applications for Membership of the IHO

3. The non-IHO Member States of the SAIHC region are Angola, Comoros, Kenya, Madagascar, Malawi, Namibia and Tanzania. All are Member States of the IMO and need to be encouraged to become IHO members.

4. The IHO Secretariat, in cooperation with the Department of External Relations of the Government of Monaco, stands ready to assist non-member States in the SAIHC region with the application process for membership of the IHO.

INT Chart and ENC Production Coordination Region H

5. Mr Alfons van Craeynest is the designated INT Chart / ENC Coordinator for Region H.

6. The status of the INT chart scheme for Region H is contained in Edition 3.0.7 of S-11 Part B which was made available in August 2019. According to the S-11 Part B Web Catalogue, there are 125 INT charts in the scheme, from which 103 have been produced and published; although not all details in IHO publication C-55 are current. All SAIHC members and associates are requested to

check their individual entries and provide updated information as appropriate.

7. 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). INToGIS Phase II aims to provide a very useful scheming tool, putting together ENC and INT charts, new base maps and also includes some useful tools that enable more efficient and consistent INT chart and ENC scheming (AIS data base, overlap checker, etc.). As agreed at the WENDWG meeting, some Chart Coordinators are now experimenting with INToGIS II before it is commissioned and made available to all.

8. At its 14th meeting in Monaco (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 SAIHC ENC Producers provide their guidelines to the DQWG. So far inputs from Norway, France and UK have been received.

9. **Recommendation.** SAIHC to consider providing regional CATZOC practices to the DQWG.

Maritime Safety Information Services

10. Inmarsat – stated coverage 76°N - 76°S via three geo-stationary I4 satellites, although up to 78°N has been achieved.

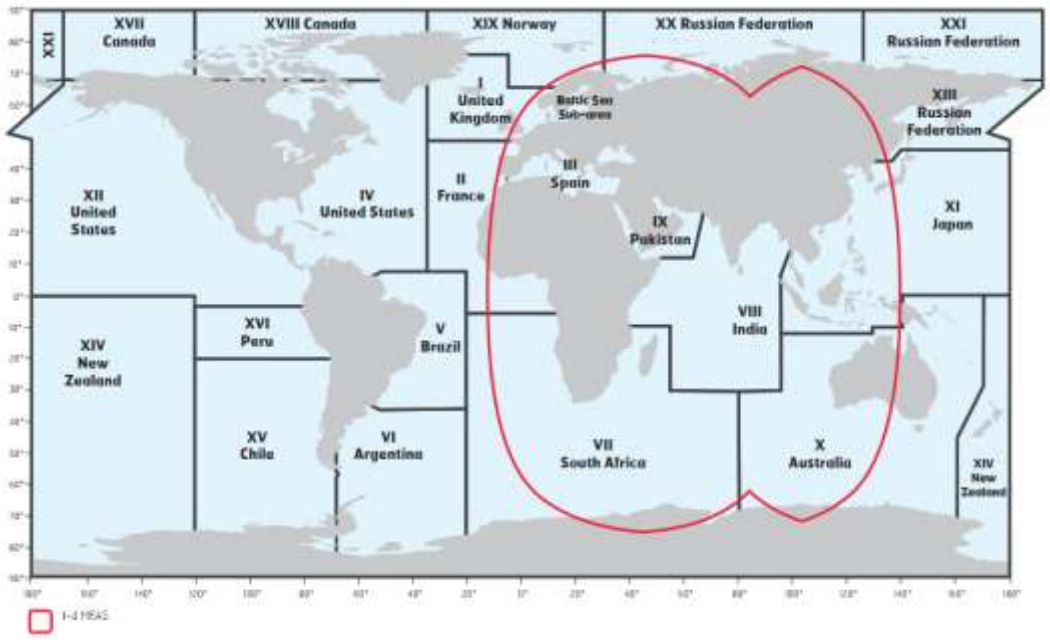
SafetyNET Services. Two systems are now available and in use by all information providers (NAV and MET Area Coordinators and RCCs):

SafetyNET – SafetyNET messages are submitted by registered information providers for promulgation to the appropriate satellite Ocean Region(s) via an Inmarsat C Land Earth Station (LES) through the I4 satellites to vessels at sea.

SafetyNET II – provides an interactive web portal for MSI providers to promulgate their MSI messages over the Inmarsat EGC system direct to I4 satellites via web interface. SafetyNET II messages are submitted by registered information providers via a secure interface to the Inmarsat network.

Fleet Safety –MSC 101 approved MSC.1/Circ.1611 on *Interim guidance on technical requirements for Fleet Safety*, which will remain in force until such time as the information is included in MSC.1/Circ.1364/Rev.1 on *Amendments to the Revised International SafetyNET Manual*.

Fleet Safety is the digital satellite communications system comprising of a FleetBroadband Ship Earth System, (SES) and type approved Maritime Safety Terminal (MST) for use within the GMDSS, enabling ships to meet the majority of the satellite communications requirements of the GMDSS including distress alerting, reception of MSI and SAR related information, voice distress and general communications.



Fleet Safety GMDSS approved area until Inmarsat 6 satellite constellation deployed

11. <u>Iridium – global coverage through constellation of low orbiting satellites</u>.

MCS 99 adopted resolution MSC.451(99) on *Statement of Recognition of the Maritime Mobile Satellite Services provided by Iridium Satellite LLC*, recognized the maritime mobile satellite services provided by the Iridium Safety Voice, Short-Burst Data and enhanced group calling services, for use in GMDSS, now called generically Iridium SafetyCast services. The constellation is complete with spare satellites.

MSC 101 approved MSC.1/Circ.1613 on *Interim Iridium SafetyCast service manual,* which will be made available in its current draft state to support the initial operational capability phase, when an increasing number of NAV and MET Areas and RCCs will engage with Iridium and test the Iridium SafetyCast Service. This process will continue until all NAV and MET Areas and RCCs are fully operational and all the necessary Full Operational Certificates have been issue by the IMO EGC Coordinating Panel; at which point the Chair will advise the IMO MSC and which then will request the International Mobile Satellite Organization to issue the final letter of compliance to Iridium. At this point Iridium SafetyCast Service will be an operational part of the GMDSS.

The necessary SOLAS amendments are planned to come into force on 1 January 2020, however this will only mean that a ship carrying Iridium SafetyCast Service equipment will be SOLAS compliant, it will not mean that the system is operational..

All NAV and MET Area Coordinators and RCCs will be required to provide MSI and SAR services via all recognized mobile satellite service providers, a point which will be included in the new FOCs issued by the IMO Enhanced Group Call (EGC) Coordinating Panel (formerly the International SafetyNET Coordinating Panel).

12. <u>BeiDou</u> – MCS 99 considered an application by China for the recognition of the BeiDou

Message Service System (BDMSS) and use in GMDSS. The Committee referred the application to the NCSR Sub-Committee for evaluation of the detailed information, to be provided to the Sub-Committee in due course, and authorized the Sub-Committee to invite IMSO to conduct the Technical and Operational Assessment, as appropriate. BeiDou is the Chinese developed version of Inmarsat and Iridium, intended to provide GMDSS services as well as other communications capabilities in the same manner that Inmarsat and Iridium do.

13. All information providers will be required to transmit their messages via both Inmarsat and Iridium, and in the future via all other IMO appropriate recognized mobile satellite service providers, global or regional coverage, such as BeiDou and the UAE based Thuraya satellite system, which has applied for recognition for the Gulf region. Note at present, unlike GNSS, there are no multi-system capable ship receivers available.

Capacity Building Programme

14. The level of activity of the IHO Capacity Building (CB) Programme increased in 2018. Expenditure in the IHO 2018 CB Work Programme (861 000 Euros) was 37% bigger 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 2018, 81% of the budgeted work program was executed and paid for.

15. The SAIHC Member States have benefited from CB activities under the IHO CB Work Programme (CBWP).Currently, Ms Lucy Fieldhouse (UK) is the SAIHC CB Coordinator for planning and implementing the regional CB activities.

16. Recommendations. SAIHC to consider:

The SAIHC Members are invited to consider (discuss) how they can engage with their national funding agencies or directly contribute to the CB Programme and determine what needs to be changed in the current IHO CB approach to have better effect in the region.

Crowdsourced Bathymetry

17. 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 IHO publication B-12 – *IHO Guideline on Crowdsourced Bathymetry*. Edition 2.0.0 was circulated under IHO CL 11/19 and its approval was announced in IHO CL 28/2019. Replies to Annex B of IHO CL 11/2019 have been analysed 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 circulated under IHO CL xx/2019 as well as being published on the IHO website for the guidance of the wider maritime community. 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.

18. The web-based interface portal to the IHO Data Center for Digital Bathymetry, 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 concept. This will enable an IHO-led CSB infrastructure to be established and promoted in the IMO and across the wider maritime community.

19. **Recommendations.** SAIHC 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

20. 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.

21. Seabed 2030 has established a network of 4 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 Atlantic and Indian Oceans are covered by the centre located at the Lamont Doherty Earth Observatory (LDEO). 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 data based there.

22. GEBCO released the GEBCO 2019 grid in March. 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.

23. **Recommendations.** SAIHC members are invited to consider the future invitation of Seabed 2030 project representatives to SAIHC 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 SAIHC 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 SAIHC Countries, including those provided for C-55, is as follows:

Country	C-55 Last update received	P-5 Yearbook Last update received
Angola	May 2016	September 2018
Australia - Heard I	February 2018	-
Comoros	June 2017	December 2016
France	June 2017	July 2019
Kenya	September 2014	September 2018
Madagascar	June 2017	August 2018
Malawi	May 2008	August 2014

Country	C-55 Last update received	P-5 Yearbook Last update received
Mauritius	March 2019	March 2019
Mozambique	May 2016	September 2018
Namibia	November 2012	August 2014
Norway - Bouvet Island	April 2019	September 2017
Seychelles	February 2019	April 2019
South Africa	September 2014	September 2017
South Africa - Prince Edward Is.	May 2011	-
United Kingdom - Ascension Island	July 2019	-
United Republic of Tanzania	September 2014	August 2014

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 has developed an online form to allow Member States to input data to the Yearbook and to C-55. The online forms also allow Member States to vote in response to CLs.

29. **Recommendations.** Countries in the SAIHC 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

30. World Hydrography Day: Taking into account the discussions at the first IHO Council meeting held in Monaco in October 2017, the theme of the World Hydrography Day for 2019, as announced by IHO CL 52/2018, is:

"*Hydrographic information driving marine knowledge*"

31. As part of the report on the 2019 Work Programme that was proposed at the 2nd Council, the Secretary-General introduced the priorities, which he had defined with the associated issues and risks, for Work Programme 1 (Corporate Affairs). One of the priorities was to plan and start a complete overhaul of the IHO website including incorporation of GIS-services.

32. The Secretariat conducted an internal workshop in December 2017, to assess the deficiencies of the IHO website in place, the up-to-dateness of the underlying technology and future requirements. The workshop resulted into a comprehensive list of topics to be addressed by an overhaul of the IHO website. In the course of the workshop it turned out that the new design should not be limited to the establishment of a newsfeed mechanism, to the website structure and design only. Instead, a holistic approach covering IHO´s corporate design of all media channels in digital and print was concluded as the appropriate scope of action. A report was presented at the second IHO Council in London in October (doc. C2/7.2 refers).

33. It was concluded further 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 with the future set up and maintenance of such a component.

International Hydrographic Review (IHR)

34. 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 and expert contributors has been established. However, some of the members of the editorial board need to be updated due to change of the roles of the board members. SAIHC is represented by RAdm Tim LOWE. Papers for consideration for publication in the IHR should be forwarded directly to the Editor. Unfortunately, Mr Ian HALLS, the Editor of IHR passed away on 28 May 2019. For the interim period, papers for the IHR should be forwarded to the acting Editor, Assistant Director Alberto Costa Neves at ihreview@iho.int, copy to alberto.neves@iho.int. The deadlines are:

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

35. 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 collection (1923 to 2018) and other relevant information are available online at the newly created web address: http://review.iho.int.

36. **Recommendations.** SAIHC Members are invited to submit papers for publication in the IHR.

IHO Centenary Celebrations (IHO-100)

37. The years 2019 and 2021 will be 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.

38. The IHO Secretariat has commenced with the preparations for the centenary celebrations of the International Hydrographic Organization with activities 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.

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

- To hold an exhibition on "Historical Nautical Charts and Mediterranean". This event, which was held at the Monaco Yacht Club from 1 to 13 April 2019, was a resounding success.

- To organize 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 the Council meetings in 2019 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 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.

Action Requested of SAIHC:

a) **Note** this report

b) **Consider** the recommendations on provision of CATZOC information as presented in **Paragraph 9**

c) **Consider** the recommendations on Capacity Building in **Paragraph 16**

d) **Consider** the recommendations on Crowdsourced Bathymetry in **Paragraph 19**

e) **Consider** the recommendations on Seabed 2030 collaboration in **Paragraph 23**

f) **Review** entries related to IHO C-55 and P-5 (Yearbook) at least annually (**Paragraph 29)**

g) **Consider** submitting papers for publication in the International Hydrographic Review (**Paragraph 36**)

h) **Take any other actions** as considered appropriate