

**14th MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE
(IHO IRCC14)
Hybrid Meeting, 6-8 June 2022**

1. Chair

Chair: Vice Admiral Renato Arruda, Brazil, from 3 December 2021 to present
Vice Admiral Edgar Barbosa, Brazil, from 1 March 2021 to 3 December 2021

Vice-Chair: Rear Admiral Rhett Hatcher, United Kingdom, from 1 March 2021 to present

2. Membership

Full Members: Brazil, Colombia, Cuba, Dominican Republic, France, Guatemala, Guyana, Jamaica, Mexico, Netherlands, Suriname, Trinidad and Tobago, UK, USA, Venezuela

Associate Members: Antigua and Barbuda, Barbados, Belize, Costa Rica, El Salvador, Grenada, Haiti, Honduras, Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines

Observer Countries: Dominica, Spain

Observer Organizations: AMEXCID, CDEMA, CLIA, COCATRAM, IADB, IALA, IC-ENC, ICG/Caribe EWS, IMarEST, IMO, INEGI, INVEMAR, IOCARIBE, MapAction, Marine Conservation, OECS, THSOA, University of Southern Mississippi, University of the West Indies

Observer Companies: ARGANS, AXYS Technologies, EOMAP, Esri, Fugro, HYPACK, IIC Technologies, iXblue, Kongsberg, OceanWise Ltd, SevenCs, Teledyne CARIS, TCarta

3. Meetings

20th Conference - Santo Domingo, Dominican Republic (4-6 December 2019).

21st Conference - hosted by USA and held in virtual format (November 30 - December 3, 2020).

22nd Conference - hosted by Brazil and held in virtual format (November 30 - December 3, 2021). USA provided the support of the videoconferencing platform.

23rd Conference will be held in the week of November 28 - December 2, 2022 in person or in virtual format. The location is to be determined.

4. Current MACHC Working Groups

- a) Capacity Building Committee (CBC)
- b) MACHC International Charting Coordination Working Group (MICC)

c) MACHC Marine Spatial Data Infrastructure Working Group (MMSDIWG)

5. Status of IRCC Actions and Recommendations to MACHC

a) Status of Actions:

N.	Action	Status
5	IRCC members involved to develop measurements to the SPI allocated to them and report back to IRCC14	MACHC Action 2 nd IRCC Workshop on the Strategic Plan contributed to this development. Ongoing
6	RHCs and WGs to include the measurement of the SPI attributed by IRCC in their annual Work Plans (Permanent)	MACHC Action Ongoing

A Gap Analysis of the IHO Revised Strategic Plan to support the goals of the IHO, analogous to one carried out by SWPHC, is being conducted with MACHC Members.

b) Status of Recommendations:

N.	Recommendation	Status
1	Upon the recommendations based on the proposals made by the NCWG on the Future of the Nautical Paper Chart, RHC to encourage Member States to focus on ENC Schemes, but still follow applicable IHO Resolutions and Standards for any continuing INT chart production.	Previous MACHC Action. Attended.
2	RHCs to recommend Member States to Note the information on ECDIS anomalies and support the implementation of the recommendations given by the ENCWG.	MACHC Action. Attended.
3	RHC and MS to advise the IHO Secretariat of any update/change to their position in relation with the CSB questionnaire (IHO CL 21/2020).	Action of the MACHC Seabed 2030 Work Plan for 2022. Attended.
4	RHC to identify regional coordinators to act as a point of contact for CSB/Seabed 2030 and to raise the profile of data gather and provision within their respective Region.	MACHC Action. Actions of the MACHC Seabed 2030 Work Plan for 2022. Attended.
5	RHC to encourage MS to participate in the Empowering Women in Hydrography project.	MACHC Action. Activity of the MACHC Capacity Building Plan 2022-2024. Attended.
6	RHC to encourage MS to submit Articles and Notes for publication in the IHR.	MACHC Continuous Action. Attended.

7	RHCs to consider extend the role of Charting Regional Coordinators for the implementation of the S-100 Implementation Roadmap.	MACHC Action. Attended.
8	RHCs to try to plan at least one face-to-face meeting between the 2 nd and the 3 rd Session of the IHO Assembly.	MACHC held two Conferences already and will hold another this year. Attended.
9	RHCs to coordinate the efforts on the implementation of S-100 and promote the cooperation and exchange of experiences.	MACHC held a Workshop on S-100 in November 2021. MACHC Actions. Attended.
10	RHCs to apply Resolution 1/2005 in case of disasters occurred to support the affected States in their regions.	The MACHC Disaster Response Framework developed by MACHC, considering the IHO Resolution 1/2005, was incorporated into the Statutes of the MACHC. Attended.
11	RHCs to invite relevant Member States to report to the IMO Secretariat and the Chair of the EGC Coordinating Panel on the progress and status of implementation of newly recognized mobile satellite services by MSI providers.	Dependent on IMO decision about the implementation of newly recognized mobile satellite services by MSI providers.
12	Member States and submitting institutions are encouraged to engage with the IHO Secretariat early in the process of them preparing submissions for programme recognition.	MACHC Continuous Action. Attended.
13	Member States and submitting institutions are encouraged to consult the Guidelines, the FAQs and the White Paper early in the process of preparing submissions for programme recognition.	MACHC Continuous Action. Attended.
14	RHCs to encourage all Member States to actively contribute with new data to GEBCO and to discuss how MS can share existing data.	MACHC Actions Action of the MACHC Seabed 2030 Work Plan for 2022. Attended.
15	Encourage RHCs and relevant Bodies to contribute to the recommendations provided by Shell to increase the cooperation between HO's and Natural source Regulators and reduce permitting requirements for transits through countries EEZ's.	Action of the MACHC Seabed 2030 Work Plan for 2022. Attended.

6. Agenda Items

Maritime Safety Information (MSI) / World-Wide Navigational Warning Service (WWNWS)

The MACHC MSI Status Matrix and MACHC MSI Training Status Details on the MACHC Initiative website provide a color-coded representation that describes the level of MSI support National Coordinators provide to NAVAREA IV, NAVAREA V and NAVAREA XII. This matrix is used to identify and prioritize future MSI training and support within the MACHC.

NAVAREA IV/XII Coordinator informed how the Commission will measure the Strategic Performance Indicator 3.1.1 “Percentage of Coastal States that are capable to provide marine safety information (MSI) according to the joint IMO/IHO/WMO manual on MSI”. He reported that in 2020, NAVAREA IV/XII received MSI from 54% of National Coordinators and confirmed satisfactory coordination with 69%, and in 2021, NAVAREA IV/XII received MSI from 52% of National Coordinators and confirmed satisfactory coordination with 65%.

A MSI Course is scheduled to be held in Colombia in 2022.

Although 5 Associate Members and one Observer State made their points of contact available, there are still some points of contact remaining.

Capacity Building

MACHC Members have contributed to the last editions of the International Hydrographic Review (IHR).

In November 2021, a Webinar on S-100 was held via VTC for the MACHC and neighboring RHCs. The Webinar was supported by the IHO S-100 Working Group and IALA who discussed the development of the new standards and the opportunities that they present. MACHC Members shared their plans for S-100 development and production and the challenges that they face with the transition from S-57 to S-100.

The candidates from Colombia, Dominican Republic and Guyana who were selected for the 2021 Category “B” level Geospatial Marine Analysis and Cartography course, funded by the Nippon Foundation and hosted by the United Kingdom have successfully completed the course.

Due to the impact of COVID the IHO funded face-to-face Capacity Building Activities from the 2021 work plan could not be completed and it was requested that the funding for these be carried into 2022 so that these important opportunities were not lost. Scheduled for delivery this year are the High-Level Technical Visit to the Dominican Republic, the High-Level Technical Visit to Jamaica, the Technical Visit to Honduras, the Technical Visit to Belize, the Seminar on Raising Awareness of Hydrography, MSI Course and the Tides Workshop for Spanish Speakers. In recognition that the IHO CB funding resources are not enough to meet the regional demand, the MACHC is actively seeking and leveraging CB partnerships with other regional organizations and stakeholders who have common capacity building needs. These include the Central American

Commission for Maritime Transport (COCATRAM), Inter-American Development Bank (IADB), the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS), IALA, IMO, IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) and neighboring RHCs (SEPRHC, SWAtHC). The Tides Workshop for Spanish Speakers is an excellent example of these efforts and is supported both through IHO funding and through co-sponsorship by multiple regional partners (COCATRAM, ICG/CARIBE EWS, SEPRHC, SWAtHC and the MACHC).

As part of the Empowering Women in Hydrography initiative a number of internships have been offered to provide opportunities to engage in international forums and to gain leadership skills and experience. The USA offered space for 2-3 women a year on NOAA hydrographic vessels starting in 2022 for which a candidate from Suriname has been successful in gaining a place. The International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) offered 4 internships; the USA was successful in being selected for one.

A candidate from Guatemala was selected for the 2022-2023 session of the Category "A" Master of Science in Hydrographic Science at the University of Southern Mississippi (USM), USA.

The "Assessment of Capacity Building Phases of Coastal States" based on IHO CB Procedure 11 is constantly updated. It will be used to better evaluate, prioritize and focus future capacity building training.

The importance of keeping the IHO Publication C-55 current, as this is utilized in the IMO audit, has been highlighted to MACHC Members.

Nautical Charts and Publications

The availability of ENC's and of INT Charts in Region B stands at 1,465 (52% increase compared to 2020) and 54, respectively. There was a huge increase of Usage Band 4 ENC cells from 300 in 2020 to 950 in 2021. There are still 30 INT Charts schemed for Region B.

MACHC regularly performs Cruise Ship Ports Gap Analysis to identify gaps added anchorage areas to list of ports, identifying 207 ports and anchorage areas with only 17 not covered by nautical cartography.

MICC sub-working group is still working on a MACHC ENC Scheme for Usage Band 1. UK presented the gridded scheme built by the UKHO to GB ENC's. USA presented the NOAA approach for ENC re-scheme plan. There is still no consensus in the MACHC for the adoption of a regular grid scheme for the MACHC ENC Scheme.

Testbeds for S-100 series products by MACHC Members were reported to be in progress: S-102 (Bathymetric Surface) by France, the Netherlands, the UK and the USA; S-111 (Surface Currents) by the USA; and S-122 (Marine Protected Areas) by France.

Survey and Risk

MACHC and IOCARIBE promoted a Webinar on the Seabed 2030 Project in November 2021 on the following subjects: Exploring Applications for the Bathymetric Grid Generation and Remote Bathymetric Data Processing using the Nippon Foundation/GEBCO Training Program Alumni Network.

The Commission approved the MACHC Seabed 2030 Work Plan for 2022, in accordance with the MACHC-IOCARIBE Seabed 2030 Strategy. Actions are in progress to contribute with existing non-public bathymetric data to the IHO DCDB and GEBCO grid, in order to increase data coverage in the MACHC Region and to build capacity for mapping contributions. Polygons with the gaps where no bathymetric data is recorded in the MACHC Region have been sent to the national points of contact to the MACHC CSB/Seabed 2030 Coordinator.

MACHC-IOCARIBE Seabed 2030 Strategy was submitted again to IOC (Call for Decade Actions No. 02/2021) in January 2022 to be considered for endorsement for a transformative Decade Action that contribute to the Ocean Decade vision.

In collaboration with IHO Crowdsourced Bathymetry Working Group Chair, the MACHC Seabed 2030/CSB Coordinator prepared a proposal to IRCC for the establishment of a Seabed 2030/CSB Coordinator Collaboration Team to discuss the past and current updates on Seabed 2030 Project and/or CSB efforts within the RHCs, to update on Coordinator-led efforts within their RHCs, to establish of a cohesive regional approach, to share challenges, issues, successes and lessons learned experienced by Coordinators.

Response to Disasters

A Response to Disasters section has been established since 2019 on the MACHC Initiative website. This section is been filled with more information about National Points of Contact, Disaster Contingency Plans, Response Capabilities and Past Event Responses.

The MACHC Disaster Response Framework is now an annex to the Statutes of the MACHC.

Marine Spatial Data Infrastructure

The MMSDIWG section in the MACHC Initiative website is used as a method for sharing meeting materials and useful links with MACHC Members, contributing organizations, industry partners, academia and potential stakeholders.

MACHC is engaging with multiple stakeholders on MSDI use cases / partnerships in the MACHC region to advance the use and sharing of geospatial information to support improved decision making for sustainable national and regional development. These include: Economic Assessment of Risks in Maritime Navigation across the Greater Caribbean Region Project; Risk Assessment and Mitigation Measures of Maritime Navigation in the Caribbean Sea; Disaster Response Support; Caribbean Marine Atlas (CMA); Caribbean GeoPortal; Caribbean Geospatial

Development Initiative (CARIGEO); European Marine Observation and Data Network (EMODnet); and UN-GGIM/WG-MGI.

A MSDI Inventory survey was conducted in 2020 to help MACHC document the various existing MSDI and SDI web resources within the MACHC Region, the results of which can be found in “MACHC MMSDIWG Inventory Survey Results”. Subsequently, another survey was carried out on the MSDI Inventory for the Additional Layers for the MACHC Region based on the feedback from potential non-navigation users. These layers will support many use cases found in the Region. The results of this survey can be found in “MACHC MMSDIWG Inventory - Additional Layers Results”. Both surveys are still open for new submissions.

A bathymetric data protocols was completed to ensure users, such as CDEMA and MapAction, can more efficiently support disaster relief efforts within the MACHC Region. The protocols define the process for requesting the data, ensure that the data is made available in the appropriate formats, and defining the process for sharing the data with the disaster response organizations.

MACHC began reaching out other RHC MSDI WG to share best practices and knowledge, having met with representatives from SAIHC and SWPHC.

MACHC was introduced to the Operational Framework for Integrated Marine Geospatial Information Management (or Integrated Geospatial Information Framework – Hydro “IGIF-H”) being developed by the UN-GGIM Working Group on Marine Geospatial Information.

7. MACHC cooperation with stakeholders (organizations, industry, academia)

Several partnerships are already being leveraged to advance MACHC capacity building, MSDI, disaster response and Seabed 2030 initiative.

8. Difficulties encountered and Challenges yet to be addressed

a) Difficulties:

None.

b) Challenges:

A key challenge is to get more active participation from most MACHC Members in the Committee/Working Groups.

MACHC held a Workshop on S-100 in 2021 to communicate on this issue, but the challenge is to get engagement from more MACHC Members in testing the implementation of S-100 based products.

MACHC established the MACHC MSDI WG in 2018, but we still face a challenge for most MACHC Members and certain Contributing Organizations to understand how and why it is in their interest to participate and contribute to MSDI.

To implement a GIS-based layer for the MACHC Disaster Response Framework that could most effectively support coordination and communication efforts before and after a disaster event with effects on maritime infrastructures.

While a MACHC Seabed 2030 Strategy has been established in 2020, there is a challenge to motivate, receive support and sustain the engagement of MACHC Members so as to continue receiving bathymetric data contributions to fill gaps in the MACHC Region.

9. Achievements and Lessons Learned

Despite of the Coronavirus pandemic, MACHC arranged to organize virtual meetings of its Committee/Working Groups, a webinar on S-100, a webinar on the Seabed 2030 Project, and the MACHC Conference in virtual format.

The Statutes of the MACHC was revised in order to adapt to the IHO Resolution 2/1997 (“Establishment of Regional Hydrographic Commissions – RHC”) as amended.

The dissemination of IHO-funded trainings and opportunities has certainly benefited the selection of candidates from IHO Member States in the MACHC Region.

There is no consensus yet in the MACHC for the adoption of a regular grid scheme for the MACHC ENC Scheme.

The value of increased collaboration across RHCs and regional partnerships for capacity building training, Seabed 2030/CSB (including the development of a regional Strategy and an annual Work Plan), MSDI and other requires concerted effort to identify the specific activities of common interest and sustain those connections.

10. Conclusions

MACHC, in collaboration with other international, regional and bi-lateral partners, is committed to carrying forward hydrographic, nautical cartography, MSDI and capacity building activities in close alignment with IHO objectives and goals.

11. Actions required of IRCC

The IRCC is invited to take note of this Report.


Vice Admiral Renato Arruda
Chair, Meso American / Caribbean Sea Hydrographic Commission