

**Seminar on “Raising Hydrographic Awareness” &**  
**26<sup>th</sup> Meeting of Meso-American and Caribbean Sea Hydrographic Commission**  
**(MACHC26) - Niteroi, Brazil – 8-12 December 2025**

Contribution to the IHO Work Programme 2025

Task 3.2.1.5

MACHC – Meso-American - Caribbean Sea Hydrographic Commission.

**High level summary**

- The seminar on “Raising Hydrographic Awareness” highlighted the need to invest in Seabed Mapping via global initiatives like GEBCO and Seabed2030, due to varying hydrographic capabilities in the region.
- The Bahamas joined the IHO as the 102<sup>nd</sup> Member State and became the 16<sup>th</sup> MACHC member.
- Consider developing a MACHC Hydrographic Leadership Program (HLP), exploring participation in future SWPHC HLP cohorts.
- MACHC makes extensive use of IHO Capacity Building programme offers, with over 30% of hydrography and cartography training courses’ positions filled by MAC Region students in 2025.
- The MACHC International S-100 Coordination Working Group (MISC WG) was established, chaired by Venezuela.
- IC-ENC presented the MACHC it’s S-100 Implementation & Benefits Realization Plan; Commission members were also encouraged to use PRIMAR’s e-learning courses.
- A Technical Visit to Panama was planned for 2026 to assess hydrographic capacity.
- Progress made on S-124 Navigational Warnings, including a MACHC implementation plan and upcoming MSI training material on the IHO e-learning portal.
- National reports showed challenges with S-100 implementation, a need for regular S-57 to S-101 conversion training, and more investment in surveys and technology.
- The IHO Director’s visit to Panama helped finalize steps for Panama’s IHO membership, develop legislation for a national hydrographic service, and define Panama’s participation in IHO forums (Assembly and Council) and regional meetings (MACHC and SEPRHC).

**Details:**

On 8<sup>th</sup> December, a seminar titled “Raising Hydrographic Awareness” was conducted as an integral component of the 2025 IHO Capacity Building programme for the MACHC region. The event was attended in person by seventy stakeholders, including representatives from MACHC region States, industry, intergovernmental organisations (IGOs), and observers. The seminar, delivered remotely by Dr Vicki Ferrini and her team from the University of New Hampshire, focused on the technical significance of seabed mapping, specifically through the Nippon Foundation GEBCO-Seabed2030 Project. The presentation highlighted the exponential increase in global interest and activity related to seabed exploration and mapping in recent years. Notably, the Seabed2030 initiative has functioned as a key accelerator for GEBCO, driving the proportion of mapped seabed from 6% in 2016 to 27.3% in 2025, thereby more than quadrupling the documented area of the seafloor.

**26<sup>th</sup> Meeting of the Meso-American and Caribbean Sea Hydrographic Commission – MACHC26** was held at the Directorate of Hydrography and Navigation (DHN) in Niteroi, Brazil, from 9 to 12 December, under the auspices of the Brazilian Navy. The session was chaired by Suriname. Eighty participants attended in person and remotely, representing sixteen IHO Member States (The Bahamas, Brazil, Colombia, Dominican Republic, France, Guatemala, Guyana, Mexico, Netherlands, New Zealand, Spain, Suriname, Sweden, United Kingdom, United States of America, and Venezuela), seven non-IHO Member States (Antigua and Barbuda, Belize, El Salvador, Grenada, Panama, St Kitts and Nevis, and Turks and Caicos), as well as delegates from IALA, IC-ENC, PRIMAR and industry stakeholders. Twelve MACHC member states were represented. The IHO Secretariat was represented by Director Luigi Sinapi.

*The Delegation of The Bahamas with the IHO Director*

The MACHC26 meeting was formally opened by Vice Admiral Ricardo Jaques Ferreira, Director of DHN, IHO Director and Ms Bernice Mahabier, Chair of MACHC. All emphasised the meeting's critical role in enhancing navigational safety within the region and facilitating the coordinated implementation of S-100 standards among regional states. The Commonwealth of The Bahamas was congratulated on its recent accession to the IHO in May 2025 (see article issued on the webpage of the Minister of Foreign Affairs of The Commonwealth of The Bahamas at the link: <https://mofa.gov.bs/the-bahamas-joins-machc/> ).



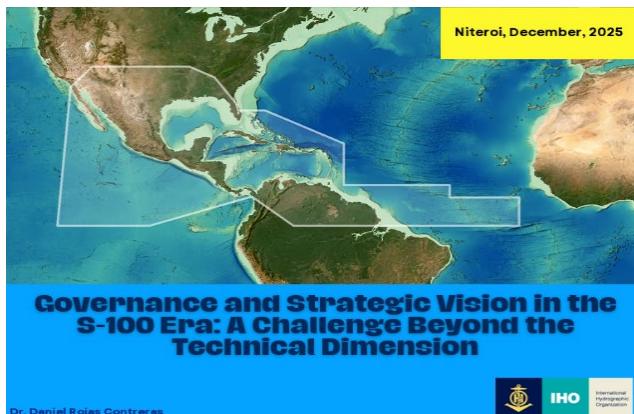
During the presentation of the IHO Secretariat Report, Director Sinapi underscored the necessity of expanding IHO membership and enhancing hydrographic awareness, particularly through high-level visits within the MACHC Region. It was noted that the MACHC26 meeting coincides with a pivotal period for the IHO, marked by new operational challenges such as the commencement of S-100 data service deployment under Roadmap Phase 1, significant progress in seabed mapping and GEBCO initiatives.

The USA, as chair of the SPRWG, presented on the IHO Strategic Plan Review for 2027-2032, explaining that the new Strategic Plan draft was presented to Council-9 in October 2025 and endorsed to be submitted to the Assembly for approval, in April 2026.

France and the UK delivered presentations on new opportunities for automated production of traditional paper charts, utilizing specialized commercial software solutions. This shift is driven by the persistent decline in sales of conventional nautical products in favor of digital alternatives and aims to optimize associated production costs.

The following main topics were discussed alongside the presentation of the National reports, divided into Achievements (A), Challenges (C) and Plans (P) affecting MACHC region's Countries:

- Automated production of new nautical charts (A)
- Use of new technologies and transformation of the hydro-oceanographic capacities (A)
- New opportunities within the EWH project and the UK "*Improving Gender Balance Fund*" (A)
- Increasing the surveys' coverage of waters under national jurisdictions (C)
- Need of more Capacity Building investments, more educational (Hydrography and Nautical Cartography Cat A & B courses) and training (on new technology and S-100) opportunities
- Establishing / improving national MSDI portals (C)
- Increasing data sharing (C)
- Implementation of S-100 based products, achieving a consistent gridded scheme and a full transition from S-57 to S-101 (C)
- Contribution to CSB, Seabed2030 and GEBCO via the delivery of depth data to DCDB (C)
- Increasing the investments into Hydrography (funds and human resources) (C)
- Increasing the PCA support to the PCA Countries in seabed mapping (P)
- Investment in new equipment, survey vessels, new technology and autonomous and uncrewed vehicles to employ in hydrography (P).



### SIMBR (S-100 Implementation, Maintenance, and Benefits Realization Plan)

Venezuela, elected by the Commission as Chair of the MACHC International S-100 Coordination Working Group (MISCWG), gave a presentation on SIMBR (S-100 Implementation, Maintenance, and Benefits Realization Plan). The implementation of the S-100 standard is not only a technical task, but a process of institutional transformation and regional integration, to consolidate intelligent and sustainable governance.

The SIMBR constitutes a strategic architecture designed by IC-ENC to guide, coordinate, and ensure an orderly transition toward the S-100 product ecosystem among its Member States. Its nature is programmatic, evolutionary, and operational, aligned both with the IHO S-100 Roadmap 2020–2030 and with the IMO's regulatory obligations (2026+). SIMRB align the adoption of S-100 with regional and national strategic priorities, and justify the financial, technical, and organizational investment.

The General Managers of IC-ENC and PRIMAR gave presentations about the latest developments, projects, and initiatives within the RENCs. They emphasized their ongoing work to implement new S-100 products and provide related training opportunities. In addition, they highlighted the financial support made available to MAC region States to help fund IHO Capacity Building activities.

Regional Capacity Building activities, implemented, ongoing, and scheduled, were detailed, emphasizing the critical role of inter-regional coordination and the necessity for investment in S-100 implementation. The overview included MSI courses, online training modules, High-Level Visits, and Technical Visits, all aimed at enhancing hydrographic awareness within MACHC region States and evaluating national hydrographic capabilities. Hydrography Category A & B and Nautical Cartography Category B courses are provided by the IHO, supported by substantial contributions from the Republic of Korea and Nippon Foundation. A Technical Visit to Panama is planned for 2026 to evaluate the country's hydrographic capacity status as part of the regional Capacity Building agenda. The exceptional nature of 2025 was also underscored, as it marks the first time in IHO history that 100% of Capacity Building activities requested by Regional Hydrographic Commissions (RHCs) through Capacity Building coordinators have been fully funded.

Industry presentations on the state-of-the-art Technology, Geo-data and Education, and IALA representative's presentation on the development of the new S-200 series products, completed the agenda of the conference.

### Photo



*MACHC26 participants – Niteroi, Brazil*

**Upcoming meetings:**

The next meeting is scheduled to take place from 30 November to 5 December 2026 (venue to be determined). An official letter has been sent to the Ministry of Foreign Affairs of the Commonwealth of The Bahamas for consideration as the host country for MACHC27. For 2027 and 2028, offers have been received from Mexico and the Dominican Republic respectively, with both awaiting internal ministerial confirmation.