

**16<sup>th</sup> Eastern Atlantic Hydrographic Commission Plenary (EAtHC16)**  
**29<sup>th</sup> of September to 1<sup>st</sup> of October 2021 – Hybrid (Lisbon, PT)**  
**Plenary Report (Final)**

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## 1. Opening

The Chair and Secretariat formally greeted all participants with a warm welcome to Lisbon, the Instituto Hidrográfico (IHPT) and the 16<sup>th</sup> Eastern Atlantic Hydrographic Commission Plenary (EAtHC16) in hybrid format.

Minutes Note:

On this document,

Considering the agenda, the agenda number is placed in brackets ex:(00.0X) after each topic title.

References are used for each topic, according to the following:

- Doc EAtHC16-xx, corresponds to a document in appendix of the minutes.
- Ref EAtHC16-xx, corresponds to a document available on the EAtHC webpage of IHO website.

## 2. Opening Remarks by the Chair of the EAtHC

(Doc EAtHC16-01 – Chair Opening Remarks)

RAdm Carlos Ventura Soares, Director General of IHPT and currently the Chair of EAtHC, started with a brief statement (Doc EAtHC16-01) welcoming all the participants and thanking all for their attendance. The Chair focused his words on the hybrid format adopted for the meeting which allows a wider attendance along with the required safety measures imposed by the COVID-19 pandemic. The importance of a continuous effort on EAtHC works throughout all members was also highlighted.

## 3. Address by Vice Chair

RAdm Laurent Kerleguer, from *Service hydrographique et océanographique de la Marine* (Shom), head of the French delegation and currently Vice Chair of EAtHC, addressed the participants congratulating the fact that this meeting is a comeback to the so needed in person meetings, now in an hybrid format. In line with the French delegation, a reference was made to the preparation for S100 and the new Electronic Navigation Chart format, and the importance of EAtHC being aligned with the IHO objectives and performance measures.

## 4. Address by the IHO Director

Mr. Abri Kampfer, IHO Director, addressed the participants on behalf of the Secretariat of IHO. Mr. Abri stressed out the importance of Regional Hydrographic Commissions on hydrographic activities which are established for coordination and cooperation on this specific region, It was emphasized that IHO is celebrating this year its 100 anniversary, completing a century of international cooperation in hydrography, making it a successful organization on the basis of having political differences put aside when working together for the benefit of all mankind and particularly the ones that make use of the sea.

It is a legacy to be continued, focused on the issues that can be changed, for the benefit of the region and all mariners navigating on this region. Mr. Abri mentioned, as well, the importance of continuing to have this meeting for this region.

## 5. Round Table Presentations

### (Doc EAtHC16-02 – List of Participants)

The Chair welcomed everyone once again and proposed a round table presentation for each element in the Room and VTC, with RAdm Laurent Kerleguer from Shom presenting himself and France objectives for the future; followed by Ms. Joana Carvalho President of the Board of Directors, and Captain Raul Soulé both from the Maritime Port Administration of Cape Verde – “Instituto Marítimo Portuário” (IMP); Commander Francisco Almeida, from the Ministry of Defence (MDN), Direção-Geral de Política de Defesa Nacional (DGPDN); Dr. José Rosa, from the Portuguese Ministry of Foreign Affairs (MNE), Commander Alberto Tipote, from the harbour administration of Guiné Bissau (APGB), Commodore Khalid Loudiyi, Head of the *Division de l’Hydrographie, de l’Océanographie et de la Cartographie de la Marine Royale du Maroc* (DHOC); Mr. Abri Kampfer Director of IHO; Mr. Yves Guiliam, Assistant Director of IHO; Captain Jose Gonzalez-Aller Lacalle Director of Instituto Hidrográfico De La Marina (IHM) Spain, Commander Salvador Moreno Soba Head of Institutional Relations of IHM Spain; Mr. Nathanael Knapp Head of Partnering and Engagement from the United Kingdom Hydrographic Office (UKHO), Ms. Cathy Tunks Geographic Technical Manager from the UKHO; Eng. Carlos Amaro Fernandes, from São Tomé and Príncipe; Commander Øystein Aasbø, Senior Sales Manager - Sensors & Robotics – Europe, Africa and Russia from Kongsberg Maritime (KM); Mr. Nicola Scotto di Vettimo, Regional Sales Manager from Teledyne Caris; Ms. Gerardine Delanoye, Capacity Building and Resources Manager World-Wide Academy from International Association of Lighthouse Authorities (IALA); Ms. Paula Sanchez, Cartography Advisor from IHPT ; Lt Commander Gerald Dias, Head of the Technical Scientific Data Center of IHPT ; Captain Miguel Bessa Pacheco, Technical Director of IHPT ; Commander Carlos Videira Marques, Hydrography advisor of IHPT and EAtHC16 rapporteur; Commander João Delgado Vicente, Head of Hydrographic Division of IHPT and at the EAtHC Secretariat.

The Chair asked for a *tour de table* to the other participants in Video teleconferencing (VTC) mode. The presentation started with Mr. Mika Odido Coordinating the programs of the Oceanography commission of United Nations Educational, Scientific and Cultural Organization (UNESCO) in Africa followed and finalising with Dr. Knut Hartmann representing EOMAP private Satellite Derived Bathymetry (SDB) Company.

## 6. Administrative Arrangements

### *(Ref EAtHC16-01 – Chair Report)*

Cdr João Delgado Vicente provided the meeting participants with the required housekeeping details including the ones for the VTC provided by Cdr Carlos Marques.

## 7. EAtHC Administration/organisational issues (1.0)

### A. Agenda (01.1A)

*(Doc EAtHC16-03 - Agenda)*

*(Ref EAtHC16-01 – Chair Report)*

The Chair introduced the Provisional Agenda (doc. EAtHC16-03). Members were invited to comment and adopt the document. As there were no additional items proposed for discussion, the meeting adopted the agenda. The Agenda was approved by all EAtHC members.

**EAtHC16 Decision 1:** Approve the Agenda of the EAtHC16 Meeting (doc. EAtHC16-03).

### B. Chair/Vice-Chair Nomination (01.1B)

*(Ref EAtHC16-01 – Chair Report)*

On the first point on the agenda, the Chair explained that EAtHC previously to 2018 would convene every two years. Due to the COVID19 Pandemic the expected meeting was cancelled. Later, the commission set an intersectional meeting in Sept 2020, where Portugal took over the Chair. Next EAtHC meeting will take place in Sept 2022, where a new Chair and Vice Chair will be assigned. Traditionally, the EAtHC Vice-Chair takes over the Chair. That implies France to become the next Chair. For Vice Chair all member states are invited to volunteer until the EAtHC17.

### C. Matters arising from Minutes of EAtHC15 (Blank intentionally) (01.1C)

*(Ref EAtHC16-01 – Chair Report)*

Matters arising from the Minutes of EAtHC15 were published online.

### D. Review of EAtHC15 Actions List (01.1D)

*(Ref EAtHC16-01 – Chair Report)*

Next Agenda Item was presented by Cdr João Vicente.

Cdr João Vicente pointed out that there are 41 actions from the last conference (EAtHC15): 34 permanent (continuous) and 7 completed or overdue. Considering this, it was proposed to remove continuous items that are procedural/standing items, with these being addressed at every EAtHC Conference. Also considering the Statutes revision, the ICCWG TOR and the proposal of some MSDIWG permanent actions could be transferred for the mentioned documents.

Reviewing the actions list, it was suggested that it should be more task effective, with goals well defined and focused on things to be done rather than general regulations. A proposed organization of the Actions List was presented with actions being identified by "EAtHC"xx with xx being the Conference number (16 for the current one), followed by the sequential number, adding sub group identification in brackets if needed, as presented next:

- EAtHC16-XX – only for general matters
- EAtHC16(MSDI) – for MSDI matters

Actions were organized and presented using the proposed labelling.

Following this, a revision of current actions list was done, pointing the development and status of each action.

Before moving to the next agenda item, the Chair opened the floor for any comments with the Vice Chair mentioning that France agrees with the proposed revision and also the naming proposal. All members agreed on approving the new actions list format.

### **EAtHC16 Decision 2:** Approve actions list review proposal

**EAtHC16 Action 1:** Representatives of the EAtHC non-members coastal States are requested to contact their national authorities to encourage the signing of the EAtHC Statutes, and report to Chair.

**EAtHC16 Action 2:** Member States, Associate Members, Observers are invited to review their entry in the P5 - IHO Yearbook and C55 and to provide the IHO Secretariat with the appropriate updates or to report no change (CL 20/2019 refers) at least annually.

**EAtHC16 Action 3:** Provide IHO SECRETARIAT and EAtHC Chair with official documents related to national hydrographic committees (NHC), national hydrographic coordination committees and general procedures, to be considered for inclusion in C-16 (National Hydrographic Regulations).

**EAtHC16 Action 4:** Coastal States to make the transmission of survey data to their cartographic authority mandatory when contracting surveys with third parties (other HOs, private companies), in order to enable swift updating of nautical documents and charts, either by themselves providing the necessary data and documents to the charting authority or by authorising third parties to transmit these elements.

**EAtHC16 Action 5:** Coastal States are encouraged to formalize the fulfilment of their SOLAS obligations by making official agreements with their Primary Charting Authority (PCA), in accordance with the chapter V of the SOLAS Convention.

### **E. Actions and Recommendations arising from IRCC13 (Blank intentionally)** (01.1E)

*(Ref EAtHC16-01 – Chair Report)*

The Chair proposed to discuss this on agenda item 2.1B. moving on to next point.

### **F. Review of the current EAtHC Statutes** (01.1F)

*(Ref EAtHC16-01 – Chair Report)*

The Chair explained there is a need to revise the Statutes as the last update was made in 2006. Adding to several changes in IHO organization, all urging the update of the EAtHC Statutes and a need to comply with all the recommendations of IHO.

The proposal of the Statutes changes was previously put in discussion among all Member States and fruitfully discussed by the Chair and Vice Chair.

According to the amount and level of proposed alterations it was necessary to decide if these were to be considered an amendment or a change of the Statutes. The proposal was presented as an amendment, with Member States agreeing to it.

After Cdr João Vicente read the revised statutes, the Chair explained some of the changes, specifically that meetings will be held in person or VTC, something to be proposed and decided on the previous meeting.

Finally, the Chair proposed the Statutes to be carefully appreciated by all Member States until the end of EAtHC16 and approved on the final day with Mr. Yves Guiliam from IHO pointing some minor comments for changes that should be considered for the revised Statutes.

**EAtHC16 Decision 3:** Approve on following the statutes amendment proposal procedure.

## 8. IHO Matters (2.0)

### A. IHO Secretariat Report (02.1A)

*(Ref EAtHC16-02 – IHO Report)*

Mr. Abri Kampfer (IHO Director) presented the IHO Secretariat Report which included topics on Regional and IHO membership, the outcomes of the 2nd IHO Assembly, IHO GIS and Databases, IHO Outreach and actions requested of EAtHC. An overview of the Region Members was shown, with EAtHC Region being a region with high potential to become a single important voice on the hydrographic community. A special focus was given to Democratic Republic of Congo being reinstated as a Full Member State since 16 September 2021. IHO is available for helping the non-member countries to go through the integration process.

A synopsis on the 2nd IHO Assembly was given, presenting the IHO strategic Plan and mentioning the IHO CL34/2021 – IRCC Workshop on the strategic plan, by 7 October 2021, as a proper time to raise each countries' concerns on its content.

On the IHO outreach, it was put on display the World Hydrographic Day and the International Hydrographic Review (IHR) importance for worldwide hydrographers, inviting all EAtHC members to submit papers for publication in the IHR.

**EAtHC16 Decision 4:** Note the IHO Secretariat Report.

**EAtHC16 Recommendation 1:** In accordance with the EAtHC Statutes in force, the DRC is now invited to consider the possibility of signing the EAtHC Statutes to become a full Member of the EAtHC.

**EAtHC16 Recommendation 2:** As planned under agenda item 1.6, the EAtHC is invited to consider the need to adapt its respective instruments to comply with the recommendations of the IHO Resolution 2/1997 as amended by A-2 as appropriate.

**EAtHC16 Recommendation 3:** With the possible development of INToGIS III to encompass S-100 services, EAtHC members are invited to consider the future role of the International Charting Coordinator for Region G.

**EAtHC16 Recommendation 4:** EAtHC members are invited to continue to follow and evaluate the possibility to contribute to the CB Program.

**EAtHC16 Recommendation 5:** The Chair is requested to encourage all EAtHC 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) Establish and support, within their relevant maritime administrations, individual national structures with responsibility for the gathering and communication of MSI;
- c) Establish and maintain effective communications with the relevant NAV and MET Area Coordinators to ensure the timely provision of MSI;
- d) Use and follow the guidance provided in S-53 – Joint IMO/IHO/WMO Manual on Maritime Safety Information – to ensure the necessary facilities and capabilities are provided and maintained for the gathering and communication of MSI within their area of national responsibility;
- e) Identify suitable individuals to undertake both the online e-learning modules and the physical MSI training course, and ensure their subsequent continued relevant employment within the national structure.

**EAtHC16 Recommendation 6:** Encourage Members, Associate Members and Observers to:

- a) Make data openly 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 and become actively involved in the GEBCO program and its subordinate projects;
- e) Continue inviting GEBCO program and Seabed 2030 project representatives to EAtHC meetings to discuss options for deepened cooperation and support;
- f) Encourage Members to make more detailed and comprehensive seabed data available – in particular deep ocean data from transit or commercial / scientific surveys;
- g) Make more people aware of the importance of gaining a complete picture of the seabed:

**EAtHC16 Action 6:** Representatives of EAtHC Costal States IHO non-members are invited to contact their national authorities to encourage to become IHO members.

## **B. Highlights of Inter-Regional Coordination Committee - IRCC13 Report** (02.1B)

*(Ref EAtHC16-03 – IRCC13 Report)*

The Chair introduced the next agenda item. Cdr João Vicente presented on the IRCC13 Report. The most important topics highlighted were the IHO Revised Strategic Plan, including the Strategic Performance Indicators (SPIs) and gap analysis, the S-100 Implementation Strategy, the WEND100 Principles, the IHO e-Learning Center, the qualification of personnel, the cooperation in R&D, the IHO-Singapore Innovation Lab, the Seabed 2030 project and related geospatial data retrieval and management, and the Regional and inter-regional cooperation.

A list of IRCC recommendations were shown, and the actions relevant to EAtHC were highlighted. From this actions, new actions were proposed for EAtHC. It was also recommended that EAtHC members should attend IRCC Workshop on the Strategic plan on October 7<sup>th</sup>, 2021.

The Chair mentioned most recommendations are important for EAtHC area countries and invited all members to share any comments. No comments were noted.

**EAtHC16 Decision 5:** Note the IRCC Report and recommendations

**EAtHC16 Recommendation 7:** At least IRCC members (from EAtHC) should attend IRCC Workshop on the strategic Plan - 7 October 2021, VTC event IOT prepare the following discussions and analysis gaps.

**EAtHC16 Action 7:** EAtHC Members are invited to submit papers for publication in the IHR and through their representative to the IHR Board. Cdr Sunday ATA KPA (Nigeria) is representing EAtHC on the IHR Editorial Board

<https://ihr.iho.int/submit-an-article/>.

**EAtHC16 Action 8:** Member States to advise the IHO Secretariat of any update/change to their position in relation with the CSB questionnaire (IHO CL 21/2020).

[https://iho.int/uploads/user/Inter-Regional%20Coordination/CSBWG/MISC/B-12\\_2020\\_EN\\_Acceptance\\_of\\_CSB\\_Data\\_in\\_NWJ\\_v3.0.pdf](https://iho.int/uploads/user/Inter-Regional%20Coordination/CSBWG/MISC/B-12_2020_EN_Acceptance_of_CSB_Data_in_NWJ_v3.0.pdf)

**EAtHC16 Action 9:** Member States are invited to participate in the Empowering Women in Hydrography project. CL 35/2021: Joint CANADA-IHO Project Empowering Women in Hydrography.

<https://iho.int/en/basic-cbsc-ewh>

**EAtHC16 Action 10:** Member States and submitting institutions are encouraged to engage with the IHO Secretariat early in the process preparing submissions for (CAT A & B) programme recognition.

<https://iho.int/en/education-programme-recognition-0>

**EAtHC16 Action 11:** 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 (CAT A & B) programme recognition.

<https://iho.int/en/education-programme-recognition-0>

**EAtHC16 Action 12:** EAtHC to include the measurement of the SPI attributed by IRCC and requested by HSSC in the annual Work Plans (Permanent).

### C. Highlights of Hydrographic Services and Standards Meeting - HSSC13 Report (02.1C)

*(Ref EAtHC16-04 HSSC Report)*

Ms. Nathalie Leidinger, from Shom - France, and Vice Chair of HSSC, presented the Highlights of HSSC13. A Brief description on the implementation of the SPIs, the experimentation on the application of ISO9001 principles on the development of S-101, the S-100 decade, and a special remark on the options for HOs for the future production of S-100 ENC's in conjunction with S-57.

The S-100 implementation priorities were listed, as well as the timeline for the implementation of S-100. HSSC prepared a diagram for the options HOs would have on producing S-57 and S-101. Showing that software could be used to produce S-101 from S-57 conversion, with the final option being to produce S-57, and RENC and later convert S-57 to S-101.



The Future of S-100 ECDIS and the dual-fuel concept, where ECDIS would read both S-57 and S-101 were also discussed. The establishment of new project teams was highlighted, namely the Baseline Symbology PT, a subgroup of NCWG, the S-130 PT and the Maritime Autonomous Surface Ships (MASS PT). Finally, it was noted that the Hydrographic Surveys Working Group (HSWG) was established.

The chair considered the potential options for HOs for production of S-101 ENC's in conjunction with S-57 as a very important topic, and after the Chair enquired for comments, France made note of the slide that showed the potential options for HOs for production of S-101 ENC's in conjunction with S-57. France made the point that the parallel production of S-57 and S-101 is difficult to envisage because of the resources required and HOs must have the option of either producing in S-101 with the possibility of conversion to S-57 or continuing production in S-57 with the possibility of conversion to S-101. Portugal shares the concerns of France and emphasizes that there should be a common approach from all members of EAtHC.

Mr. Yves Guilliam, from IHO, asserted on the opportunity and challenge for all the EAtHC members to catch up with the development of new standards, as S-131 is an example, underlining that S-100 world map integrates all S-100 products to become interoperable.

Mr. Abri Kampfer added that the road map is set, but the technical solutions still need to be developed.

Mr. James Harper from IC-ENC questioned whether there was any emerging preference from the options proposed at HSSC13 for the S-101/ S-57 production, and what would happen if a third party would like to produce ENC on behalf of a national HO.

At this point it was explained by Mr. Abri Kampfer that the issues presented for the S-57 / S-101 production are mostly focused on showing and identifying possible options, and not as a standard or recommendation. Technical solutions still need to be found. The liability will also be an issue to discuss.

**EAtHC16 Decision 6:** Note the HSSC Report and recommendations

**EAtHC16 Decision 7:** Note the proposed metrics for the SPIs and target values for 2026, consider the contribution of EAtHC Members to the SPIs under HSSC

**EAtHC16 Decision 8:** Note the potential options for future production of S-101 ENC in conjunction for S-57

**EAtHC16 Decision 9:** Note the establishment of the new PTs and encourage Member States to participate, namely Baseline Symbology PT (subWG of NCWG), S-130 PT (PT of HSSC), Maritime Autonomous Surface Ships (MASS PT) (PT of HSSC).

**EAtHC16 Action 13:** Member States are encouraged to participate in the WG and PT of the IRCC and HSSC. EAtHC may appoint from among its Member States, Representatives to IHO instances, or international or regional committees. The designated Representatives of the Commission shall report to the Commission on any action or subject of interest.

**(to be continued in 12.)**

## 9. Relevant International and Regional Organizations' Report (7.0)

**EAtHC16 Action 14:** Associated Member States are encouraged to participate in international or regional organizations and should share experiences, knowledge and POC.

### A. International Association of Lighthouse Authorities (IALA) (07.1A)

*(Ref EAtHC16-05 – IALA Report)*

Moving on to the next agenda item, Ms. Gerardine Delanoye presented the IALA Report, showing that missions were conducted in several countries, highlighting that IALA conducts review or technical missions for assisting coastal states worldwide. It was asserted that expenses for travel and accommodation on such missions are supported by Academia and not the countries itself. Ms. Gerardine Delanoye stated that IALA has a *Youtube* channel available for help, –provides micro seminars upon request, and works closely together with IHO and some Hos. It was also pointed out that IALA has changed its status from non-governmental into an inter-governmental organization, has signed MoUs with several organizations, and that the new IALA International convention is now open for signing and ratification.

The Chair thanked the presentation and noted the importance of IALA's cooperation with members on EAtHC area.

### B. IOC Sub Commission for Africa & the Adjacent Island States (IOCAFRICA) (07.1B)

*(Ref EAtHC16-06 – IOCAfrica Report)*

Mr. Mika Odido, briefly described IOC with its major programs in Education, natural Sciences, Social and Human Sciences, Culture and Communication and information sectors, and having 3 Regional Sub Commissions, IOC-WESTPAC, IOCARIBE, IOCAFRICA. IOC is now focused on the Decade of the Oceans objectives and the Africa Blue Economy Strategy.

The Chair stated that EAtHC is perfectly aligned with the United Nations 2030 agenda and the Decade of Ocean Science and Sustainable Development.

### C. Support to West Africa Integrated Maritime Security (SWAIMS) (07.1C)

*(Ref EAtHC16-07 – SWAIMS Report)*

Commodore Rodrigues Campos, presented the Support to West Africa Integrated Maritime Security (SWAIMS) program and Camões Implementation Unit. A brief introduction on the Gulf of Guinea Region (GoG) was given, pointing maritime piracy as one of the greatest challenges to maritime security, and showing data from IMB for 2020 with ranked threats in the Region.

The EU is committed to improving maritime security on the GoG with several programs being implemented with focus on legal framework, training and operating. The SWAIMS program was briefly explained, with two specific goals, a) Strengthen institutional governance and law enforcement frameworks and more success in prosecuting and punishing maritime crimes, b) Strengthen law enforcement operational and response capacities, each divided into several components, with the Operational Response and Management of the Rule of Law at Sea delegated to Camões, I.P., which is conducted in part by the

Portuguese Navy. The Planning and Budget was depicted, and the main challenges were highlighted. Commodore Rodrigues Campos finalized by sharing the deliverables expected from this program.

**(to be continued in 11.)**

## **10. EAtHC Committees and Working Groups** (3.0)

### **A. ICCWG** (03.1A)

*(Ref EAtHC16-08 – ICCWG Report)*

On this agenda Item, Lt Cdr Julien Smeekaert presented on the ICCWG. The evolution of the regional INT catalogue was depicted with a proposal to update the INT scheme. The status of the ENC's was shown with the implementation of an ENC scheme for the Region proposed. On GIS usage, a port index layer was exhibited, as well as a traffic density layer. The ToR and RoP for ICCWG are available for approval. Finally, an overview of EAtHC actions related with ICCWG was shown. The proposed priorities were agreed by all.

**EAtHC16 Decision 10:** Note ICCWG report.

**EAtHC16 Decision 11:** Agree to accept ICCWG proposed priorities.

**EAtHC16 Decision 12:** Approve the ICCWG proposal to update the INT scheme with modification on Spanish INT chart INT1903.

**EAtHC16 Recommendation 8:** To implement the S-57 ENC scheme via INTtoGIS and to maintain it with planned and produced ENC's (deadline for implementation: December 2022).

**EAtHC16 Recommendation 9:** To follow the relevant (ongoing) work of the WENDWG on the implementation of the S-101 ENC scheme and on the application of some or all of the S-101 principles to other S-1xx products.

**EAtHC16 Recommendation 10:** To develop S-100 training in the framework of EAtHC Capacity Building and to benefit from S-100 training opportunities with IHO (other RHCs webinars...) and RENCs.

**EAtHC16 (ICC) Action 1:** INT & ENC Chart producers to check the consistency of the existing set of ENC with NGA's list of ports (Pub 150). To provide the regional charting coordinator with a set of proposals to complete large scales ENC schemes.

**EAtHC16 (ICC) Action 2:** INT chart producers to provide first editions and details of the new editions of INT charts to the INT Chart Coordinator (or ICCWG) at least three months prior to every EAtHC or ICCWG meeting in accordance with S-11 (3.14.1 – c).

**EAtHC16 (ICC) Action 3:** The newly adopted INT charts, with the agreement of the INT Chart Producer Nation to be subsequently transferred to the IHO SECRETARIAT for its chartroom reference collection and internal use (database validation, consultation, etc.).

**EAtHC16 (ICC) Action 4:** Chart producers to provide the regional charting coordinator with an update of the list of on-line chart catalogues, either directly or systematically when updating the Yearbook.

**EAtHC16 (ICC) Action 5:** Chart producers to update INT chart details (limits, scale, format) using INTtoGIS 'web manager' interface.

**EAtHC16 (ICC) Action 6:** Regional Charting Coordinator to submit the new INT proposals/ major updates to the approval of the region G ICCWG in accordance with the ICCWG ToRs & RoPs and using the form made available.

**EAtHC16 (ICC) Action 7:** Regional G ICCWG to validate ENC schemes for UB1/2/3 and report back to the IHO SECRETARIAT. RCC to study with IHO Secretariat the possibility to copy the ENC catalogue in the ENC scheme.

**EAtHC16 (ICC) Action 8:** Specify how to manage ENC schemes (proposals for new cells, scheduled cells) with INTOGIS II.

**EAtHC16 (ICC) Action 9:** ENC producers to enter their ENC projects via the "manager" interface of the INTOGIS II portal. WHEN OPERATIONAL.

**EAtHC16 (ICC) Action 10:** ENC producers to send their ENC projects (production plan in shape format) to the charting coordinator.

**EAtHC16 (ICC) Action 11:** Upon the recommendations based on the proposals made by the NCWG on the Future of the Nautical Paper Chart, Member States should focus on ENC Schemes, but still follow applicable IHO Resolutions and Standards for any continuing INT chart production.

**EAtHC16 (ICC) Action 12:** Member States to note the information on ECDIS anomalies and support the implementation of the recommendations given by the ENCWG.

**EAtHC16 (ICC) Action 13:** Member states ENC producers to populate the CATZOC values (1 to 5) of their ENC cells

## **B. Approval of ICCWG TOR** (03.1B)

Following the next item, Lt Cdr Julien Smeekaert presented the ICCWG ToR and RoP for approval. ICCWG ToR were approved by unanimity.

**EAtHC16 Decision 13:** Approve ICCWG ToR.

## **C. Report on GDMSS, MSI and NAVAREA Coordination** (03.1C)

*(Ref EAtHC16-09 – NAVAREA III Report)*

Next agenda item was presented by Lt Cdr Julien Smeekaert, highlighting the importance of having the member States' Points of Contact up to date for the coordinator. The NAVTEX coverage was also depicted and MSI and CB current situation. It was also pointed out that IHO's country information system should be updated by all countries and used within regional conferences and working groups.

**EAtHC16 Decision 14:** Note GDMSS, MSI and NAVAREA Coordination report.

**EAtHC16 Recommendation 11:** Have awareness-raising actions for decision-makers in order to set up an efficient and sustainable organization for the collection and dissemination of MSI, as well as training actions for operators are necessary in almost all Western and Central African coastal states.

**EAtHC16 Recommendation 12:** Update Country information system, maintained by the IHO, and use relevant information for POC when needed.

**EAtHC16 (MSI) Action 1:** To the NAVAREA II Coordinator to check on a regular basis the MSI Points of Contact (at least every 3 months).

**EAtHC16 (MSI) Action 2:** National MSI correspondents to report any change of contact point to the NAVAREA II coordinator without delay.

**EAtHC16 (MSI) Action 3:** To the NAVAREA II Coordinator to write to MSI POCs an official letter requesting that oil platform operators provide to the MSI POC:

- updates on platforms locations and moving forecasts.
- POCs for liaison related to future movements.

**EAtHC16 (MSI) Action 4:** 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.

#### **D. Capacity Building Plan** (03.1D)

*(Ref EAtHC16-10 – CB Report)*

Lt Cdr Julien Smeekaert showed the data on EAtHC CB activities since last conference. Attention was called out on the Technical Visits to Togo, Côte d'Ivoire. A brief explanation on the impact of the COVID19 pandemic on CB activities was done, with several activities postponed to 2022 while it was possible to maintain Congo Technical Visit for 2021. The CB program and work plan for 2022 was presented.

To finalize, some considerations from the last CBSC19 were presented, as the establishment of an IHO e-Learning Center, the Empowering women in hydrography project, the revision of CB strategy and Development of Webinars with opportunities for other RHC members to attend.

The CB work plan was approved unanimously.

**EAtHC16 Decision 15:** Note regional CB coordinator report.

**EAtHC16 Decision 16:** Approve the CB working plan.

**EAtHC16 Recommendation 13:** Member States are invited to consider actively sharing contents, resources and experiences with the E-learning PT.

**EAtHC16 (CB) Action 1:** Coastal States seeking CB assistance (including IMO audit preparation) to liaise, annually, with the regional CB coordinator not later than March 1st to be considered by the CBSC for CB work programme (CBWP).

**EAtHC16 (CB) Action 2:** Provide the regional CB Coordinator with the direct CB in-kind contribution made in the region.

**EAtHC16 (CB) Action 3:** Coastal states to make the IMO Member State Audit Scheme (IMSAS) conclusions relating to hydrographic services available to the IHO Secretariat and the CB coordinator in order to propose possible actions.

#### **E. Open Discussion in Assistance, Training and Education** (03.1E)

*(Ref EAtHC16-11 – Open Discussion)*

The Chair opened the discussion mentioning that technical visits do not seem to be enough for the CB needed. Portugal is currently working with Mozambique in a different approach, with technical personal embedded in local teams for local training and accomplish a real capacity for that country to evolve.

After a swift discussion the Chair resumed the results mentioning online face to face training and on job training as being of good value, with on job training being the most valuable at this point. A key aspect at the present time is how to articulate the CB IHO resources with bilateral cooperation, with this coordination making it easier and more productive on CB. This cooperation does depend on each country's effort on CB. EAtHC member states should focus on on-job training and sharing education and training programs.

**EAtHC16 Recommendation 14:** Member States should share their education and training programs and focus on on-job training (ex: onboard hydrographic survey training, in-office chart production training, etc.).

**EAtHC16 Recommendation 15:** Member states should articulate the IHO CB initiatives with national initiatives IOT have coastal state on-job training and add real value to the coastal states.

**EAtHC16 Action 15:** Member States to share their training programmes and focus on on-job training (ex: on board hydrographic survey training, in-office chart production training, etc.).

#### **F. MSDI** (03.1F)

*(Ref EAtHC16-12 – MSDI Report)*

At this agenda item, Lt Cdr Geraldés Dias, presented MSDI describing it and its benefits and advantages. A specific view on HOs approach on MSDI was given, as well as its alignment with IHO strategic Plan, targeting on Goals 1, 2 and 3 of this plan. An MSDI WG review from IRCC and its recent work and actions was presented. The example of Portuguese MSDI was shown highlighting Hidrografico+ project. A survey about MSDI on EAtHC members was shown and the results described, with recommendations following the conclusions of the survey. An Action list for a future MSDI WG was shown.

The Chair referred the need for a new WG the MSDI WG and offered Portugal as Chair, with support from France and UK. All EAtHC agreed to establish MSDI WG with Portugal as Chair.

**EAtHC16 Decision 17:** Note MSDI report.

**EAtHC16 Decision 18:** Agree to establish EAtHC MSDI WG.

**EAtHC16 Decision 19:** Agree to have Portugal leading MSDIWG. Portugal must propose the ToRs NLT December 31 2021.

**EAtHC16 Decision 20:** EAtHC MSDIWG to be responsible for the support to Seabed 2030, Crowdsourced Bathymetry and other programs/projects related with managing and sharing marine spatial data and for support of disaster response framework if required.

**EAtHC16 Recommendation 16:** Member States should consider being members of the MSDIWG.

**EAtHC16 (MSDI) Action 1:** Review the procedures for the transmission of survey data, making sure that all relevant national organisations can access the survey data covering their national waters.

**EAtHC16 (MSDI) Action 2:** Identify further potential sources of bathymetric measurements and survey data providers to facilitate the further completion of the Data Center for Digital Bathymetry (DCDB) data holdings.

**EAtHC16 (MSDI) Action 3:** Enrol as members in EAtHC MSDI WG.

**EAtHC16 (MSDI) Action 4:** Propose the terms of reference (ToR) and rules of procedure (RoP) of the EAtHC MSDI WG.

**EAtHC16 (MSDI) Action 5:** Create a web app with: 1.supporting documents and MSDI information; 2. common/base layers to MSDI projects (bathymetry, shoreline, maritime boundaries, etc.) and 3. Support disaster response framework.

**EAtHC16 (MSDI) Action 6:** Build an inventory (with links) of existing MSDI in the EAtHC region.

## **G. Regional projects** (03.11)

*(Ref EAtHC16-13 - EMODnet)*

This discussion was anticipated for schedule reasons.

Mr. Thierry Schmitt from Shom presented the EMODNet Project, starting by a short description of the Project and the EMODnet Bathymetry DTM characteristics and quality layer. Finally, a special attention was given to the international collaboration among IHO, GEBCO and EMODnet.

Mr. José Moutinho from the Air Centre presented the Air Centre to EAtHC focusing on the need for science information on the Atlantic and showing the Air Centre organization and emphasizing its recent work.

**EAtHC16 Decision 21:** Note the EMODNet and Air Centre reports.

**(to be continued in 13.)**

## 11. Relevant International and Regional Organizations' Report (continuation of 9.) (7.0)

### D. Seabed 2030 Project (07.1D)

*(Ref EAtHC16-14 Seabed 2030)*

This discussion was anticipated for schedule reasons.

Dr. Vicki Ferrini from Columbia University presented the Seabed 2030 project report from the Regional Center for the Atlantic and Indian Oceans. A brief explanation was given on the Seabed 2030 project and its connection with GEBCO Ocean Map. The existing and missing bathymetric data was shown on a GEBCO Map. The focus was made on cooperation and effort from all introducing a regional approach with regional centers RDACC and a Global Centre GDACC. The concept of 100% coverage was described, with the expected resolution being the core of the explanation. Several examples of GEBCO Products were shown, including a map of the EAtHC region. Several forms of contribution were shown and a rough calculus of 1000 years was pointed out as the time necessary for surveying the remaining unsurveyed area.

**EAtHC16 Decision 22:** Note all reports from agenda item 7 (Relevant International and Regional Organizations' Report):

- International Association of Lighthouse Authorities (IALA)
- IOC Sub Commission for Africa & the Adjacent Island States (IOCAFRICA)
- Support to West Africa Integrated Maritime Security (SWAIMS)
- Seabed 2030 Project.

## 12. IHO Matters (continuation of 8.) (2.0)

### D. Crowd Sourced Bathymetry Report (CSB) (02.1F)

*(Ref EAtHC16-15 CSB Report)*

Ms. Jennifer Jencks, from NOAA's National Centers for Environmental Information, explained the IHO CSB initiative, pointing that CSB is not about systematic surveying, and showing the value of CSB within several different aspects. A point was made that on IHO CL 11/2019 35 Member states out of 38 replies, approved the adoption of Publication B-12, however the acceptance of CSB activities in National Water had pretty much less positive response. To CL 21/2020 at least 30 Coastal states have replied positively to the Provision of CSB data within National Waters and a description on the CSB questionnaire on the CL was shown. The CSB data current status was displayed with a brief description on trusted nodes and their support to CSB acquisition and the Seabed 2030 program. The presentation ended describing the CSBWG and its focus and planning for the future, emphasizing HOs may be involved in CSB.

**EAtHC16 Decision 23:** Note the CSB Report

**EAtHC16 Recommendation 17:** All Coastal States are now requested to indicate their position on the provision of CSB data from ships within waters subject to their national jurisdiction into the public domain.



**EAtHC16 Recommendation 18:** Offer a positive response to the IHO CL 21/2020 & IRCC CL 01/2020.

**EAtHC16 Recommendation 19:** Consider joining and/or attending the CSBWG.

### 13. EAtHC Committees and Working Groups (continuation of 10.) (3.0)

#### G. Disaster Response Framework proposal and approval (03.1G)

*(Ref EAtHC16-16 Disaster Response)*

On Disaster Response Framework Cdr João Vicente presented a plan for disaster response for EAtHC, detailing on the proposed activities for preparation and implementation. Preparation was detailed explaining the Contingency framework and pointing out the importance of POC for the plan to work. Implementation activities were also summarized and a proposal for Actions and decisions for the EAtHC was presented. The plan was prepared following similar documents from other hydrographic commissions and all information will be shared following EAtHC. The plan was approved, and a disaster response section will be created on the website.

**EAtHC16 Decision 24:** Approve the disaster response framework with one recommendation from UKHO (include PCA in the framework).

**EAtHC16 Recommendation 20:** EAtHC coastal States should inform the EAtHC Chair on points of contact (POC) and the means of communication.

**EAtHC16 Recommendation 21:** EAtHC coastal States should prepare a list of (possibly) available assets that impacted coastal States may consider requesting via diplomatic channels to the neighboring States.

**EAtHC16 Recommendation 22:** The Chair should ensure a permanent agenda item on RHC meetings to monitor the readiness of the Commission to respond to disasters and conducting regular table-top exercises to evaluate the procedures.

**EAtHC16 Recommendation 23:** Create a section for disaster response in the EAtHC webpage.

**EAtHC16 Action 16:** Coastal States to inform the EAtHC Chair on points of contact and the means of communication, prepare and keep updated a National Communication Plan, identify appropriate contacts in the National Foreign Ministry IOT respond to Disaster Response Framework.

**EAtHC16 Action 17:** Coastal States to prepare a list of (possibly) available assets that impacted coastal States can consider requesting via diplomatic channels to the neighbouring States IOT respond to Disaster Response Framework.

**EAtHC16 Action 18:** The Chair should ensure a permanent agenda item on RHC meetings to monitor the readiness of the Commission to respond to disasters and conduct regular table-top exercises to evaluate the procedures.

#### H. Open discussion about Bilateral and Regional Cooperation Agreements. (03.1H)

*(Ref EAtHC16-17 Bilateral Agreements)*

On this agenda item the Chair mentioned that EAtHC tried to contact MOWCA, PMAWCA and AMSSA without success. The information from Ghana is that Ghana has an active position on MOWCA. The Chair mentioned further contacts will be made through Ghana to try to reach MOWCA and PMAWCA.

**EAtHC16 Recommendation 24:** EAtHC Chair should continue engaging MOWCA and PMAWCA (& other regional organizations) to participate in the Plenary's.

**EAtHC16 Recommendation 25:** Coastal States should share experiences and POCs at regional level.

**EAtHC16 Action 19:** Chair must continue engaging MOWCA and PMAWCA (& other regional organizations) to participate in the Plenary's.

## 14. S100 implementation in the region (4.0)

### A. S100 Roadmap (04.1A)

*(Ref EAtHC16-18 S100 Roadmap)*

The S100 Roadmap was presented by Ms. Paula Sanches giving a brief explanation on S-100, its Benefits, opportunities and Challenges. The roadmap is available in IHO website, and Ms. Paula Sanches highlighted the S-100 ENCs and the additional S-1xx PS. The main concerns in EAtHC S-100 implementation were enumerated and the recommendations of IRCC and HSSC were shown and considered.

### B. WEND (04.1A)

*(Ref EAtHC16-19 WENDWG Report)*

Radm Laurent Kerleguer presented the WENDWG report, starting by the past activities since EAtHC15 focusing on the main activity, development of the IHO WEND principles for S-1xx products. The adoption of IHO resolution of WEND-100 principles was emphasized with IHO Resolution 1/2021 and showing the baseline principles for the Resolution, the products availability principles, the responsibilities and coordination. The presentation ended with the WENDWG work in progress.

On an open discussion about S57 and S100 transition UK mentioned it is focused on several S-1xx, anticipating its launch on 2024. It was also mentioned by France that the intention is to avoid the simultaneous production of S57 and S101, considering the migration to S-101 format will be done aiming for a specific date and in the shortest time possible. The S57 still needs to be available, but there is the intention to delegate the conversion from S101 to S57 to the RENC (PRIMAR). The Shom responsibility will be to make sure the delegated entity uses tools certified for the conversion, nevertheless the official product remains S-101.

The Chair considered a new Action, and challenges industry to invest on developing software to work on this conversion. On a regional level there is no need to engage on this issue at this moment, however PCA that have bilateral agreement with member states should prepare the countries for the new standard.

IHO mentioned the 12th meeting of WENDWG should be attended by all, as it will be reviewing the guidelines for the implementation of the new S-101 ENC schemes.

**EAtHC16 Decision 25:** Note the WENDWG report.

**EAtHC16 Decision 26:** EAtHC Member states to coordinate the efforts on the implementation of S-100 and promote the cooperation and exchange of experiences.

**EAtHC16 Recommendation 26:** Note the adoption the IHO Resolution - Principles of the WEND for S-1XX Products (WEND-100 Principles) – CL 37/2021.

**EAtHC16 Recommendation 27:** Note the S-100 concerns at regional level (transition from S-57 to S-101; S-101 ENC Scheme; Production/publication of S-101 ENCs; Coordination; cooperation between HOs; PCA role; RENCs involvement/participation (ex: seminars; training etc); Other applicable S-100 products; Other national authorities where HOs are not the data owners).

**EAtHC16 Recommendation 28:** Member States be engaged in the WG working on S-100 and should attend next WENDWG meeting.

**EAtHC16 Action 20:** PCA in the region should review agreements/MoUs with coastal states IOT adapt to the S-100 products/services and to promote bathymetric data sharing both to Chart and ENC production and IHO DCDB/GEBCO.

## 15. IHO Revised Strategic Plan. (05.1A)

*(Ref EAtHC16-20 IHO Strategic Plan)*

The IHO strategic Plan for 2021-26 was presented by Ms. Paula Sanches describing its structure in Goals, focusing on Goal 1, 2 and 3 identifying targets to be reached by 2026, with the progress to these standards measured by strategic performance indicators. A summary on the 3 goals was shown and the main concerns were identified, stressing out the need for guidance on the determination of SPI values at regional level reported to IRCC13. The attendance to IRCC workshop on 7th October was suggested. A concise description of the SPI was shown. Some work needs to be done in the Region, in cooperation and on a shared approach.

**EAtHC16 Decision 27:** EAtHC Member States agree to participate on IRCC WORKSHOP ON THE IHO STRATEGIC PLAN IOT contribute to SPI and develop the Analyses Gap.

**EAtHC16 Decision 28:** EAtHC Member States to be involved to develop measurements to the SPI allocated to them and report back to IRCC14 and consider the contribution to the SPIs under HSSC.

## 16. National Reports (6.0)

### A. France (06.1B)

*(Ref EAtHC16-21 France National Report)*

France Report was presented by Radm Laurent Kerleguer showing the achieved surveys, the equipment improvement, the INT chart and ENC status, MSDI, and ending with a view on the planned future for the next 2-3 years.

## **B. Ghana** (06.1C)

*(Ref EAtHC16-22 Ghana National Report)*

Ms. Marilyn Eghan from Ghana mentioned that the Country has established a national HO, the Centre of Hydrography, comprising the most relevant government organizations, as ports and harbours authority (GPHA), Environmental Protection Agency (EPA), Ghana National Petroleum Corporation (GNPC), Ghana Meteorological Agency (GMet), academic institutions, etc., hosted by the head office of the Ghana Maritime Authority (GMA), the IHO's representative organization. Ghana has described the hydrography history in Ghana, focusing on the IHO interaction throughout the years, and the achievements since EAtHC15 were pointed out, with the establishment of the NHO, the survey of a new port and a tide gauge network installation. The challenges were also presented and the plan for the future years was summarized. Ghana also mentioned that is currently working with UKHO and Southern Mississippi University for approving the CAT B Course initiated in 2005, with the submission to IHO to happen soon.

## **C. Morocco** (06.1D)

*(Ref EAtHC16-23 Morocco National Report)*

Commodore Khalid Loudiyi, presented Morocco National Report, describing the DHOC as the National HO. A summary of the personal and equipment was shown and the main achievements since EAtHC15 were identified. The main challenges were mentioned and the action plan was presented.

## **D. Nigeria** (06.1E)

The National Report from Nigeria was presented by RAdm Chukwuemeka Ebenezer Okafor starting by introducing the Hydrography in Nigeria and its progress since EAtHC15, pointing out the modest progress in hydrographic activities and nautical charting/publications. Major Surveys were described and the new Charts and publications enumerated. Nigeria reported the acquisition of NNS Lana with state of the art equipment/software, as well as the scheming of Nigeria's inland waters for systematic survey ops which has started in October 2021. CB activities were briefly outlined, with the indication for the critical need on the NNHO capacity building in cartography with the support from EAtHC in chart production. Additionally, the challenges were highlighted and the top issues affecting the region were pointed out, emphasising on the future plan on the establishment of the horizontal and vertical controls network, and auto tide gauge installation along the Nigeria's coast.

## **E. Portugal** (06.1F)

*(Ref EAtHC16-24 Portugal National Report)*

Navy Captain Miguel Bessa Pacheco presented Portugal's National Report, starting with a brief presentation on the Hydrographic Institute (IHPT), IHPT technical areas and the main programs active at the present time. The Seamap 2030 program, with about 55% high resolution coverage of the Portuguese seabed, feeding Seabed 2030 project was detailed as well as the current national cartographic coverage. MSDI was outlined, highlighting IHPT new applications for data sharing. Top achievements and top issues were depicted and the plans for next year were pointed out with the transition from S-57 to S-100 being

the main focus, as well as new technologies and MSDI. Portugal is currently doing the rescheming in collaboration with other countries on the same area.

#### **F. Spain** (06.1G)

*(Ref EAtHC16-25 Spain National Report)*

Cdr Salvador Moreno Soba presented Spain's National Report, with a short presentation of Instituto Hidrográfico de la Marina (IHM), its responsibilities and relevant relationship with IHO. Top achievements and challenges, since EAtHC15, were displayed with a special focus on Hydrography courses and MSDI. Finally, the plans and main future challenges were depicted.

#### **G. Cabo Verde** (06.1H)

*(Ref EAtHC16-26 Cabo Verde National Report)*

Ms. Joana Morais de Carvalho, presented the Cabo Verde National Report, describing Instituto Marítimo Portuário (IMP) at the start followed by its relationship with IHO. The Top achievements were detailed together with the cooperation with Portugal on many fields of work. Issues were also presented and finished with the Plans and Challenges for the future focusing on becoming an active EAtHC and IHO member. Last, IALA and Worldwide Academy and Cabo Verde agreed in a review mission to start early next year, focused on VTS.

#### **H. UK** (06.1I)

*(Ref EAtHC16-27 UK National Report)*

Mr. Nathanael Knapp presented the UK National Report, starting with a video by UKHO, and following with the top achievements since EAtHC 15, focusing on the INT chart improvement, the training and admiralty Blue Data Conference. Top Issues were detailed and plans and challenges for the future summarized.

#### **I. Guine Bissau** (06.1J)

Cdr Alberto Tipote from Port Administration at Guiné-Bissau, explained the Hydrographic situation in Guiné-Bissau and understands the importance of hydrography and cartography for maritime safety. Guiné-Bissau has a general preoccupation to update national cartography, to insure good data and the safety of navigation, and as it is a small country (with over 90 islands), it has a huge need for hydrography. Guiné-Bissau has the support from IHPT to improve the hydrography in the country. IHPT has the means to improve Guiné-Bissau technical capacity, and so Guiné-Bissau asks the support from EAtHC through IHPT to launch the necessary support in CB. The country is really interested in improving and EAtHC can play a very important role. CB from IHPT has allowed to greatly improve the charting situation. Guiné-Bissau would like to ask IHPT to aid formalize Guiné-Bissau to become a member of EAtHC. The Chair thanked the presentation, making a point that the declaration is very positive and the commission is open to help on this formalization.

## **J. Democratic Republic of Congo** (06.1J)

The Chair welcomed the Presence of Democratic Republic of Congo and invited for its intervention o EAtHC. Mr. Patrick Itakala Hydrographic Division Chief, thanked IHO and IHPT for the welcome on EAtHC.

## **K. São Tomé e Príncipe** (06.1J)

Eng. Carlos Fernandes, mentioned São Tomé does not have a report as it is still too “young” in this area and still learning. São Tomé e Príncipe hopes to be better prepared in the next years. Chair thanked and hopes this integration will help São Tomé to come up to date on Hydrography.

## **L. Gambia** (06.1J)

Mr. Dominic Correa, from Gambia Ports Authority, described the achievements since EAtHC15, the new equipment and focused that Gambia will continue using Single Beam sounders to acquire new data. Gambia is also initiating the process within the government to become an IHO member.

**EAtHC16 Decision 29:** Note all reports from agenda item 6 (France, Ghana, Morocco, Nigeria, Portugal, Spain, Cabo Verde, United Kingdom).

**EAtHC16 Decision 30:** Note all statements from agenda item 6 (Guiné-Bissau, São Tomé e Príncipe and Gambia).

## **17. Industry/ Expert Contributors** (8.0)

### **A. Kongsberg** (08.1A)

Cdr Øystein Aasbø Senior Sales Manager for Europe, Africa and Russia, from Kongsberg Maritime (KM), presented on Kongsberg’s main business areas, and KM organization and products. Current systems and recent activities were depicted. Several examples of systems and data acquired with KM systems was shown. Cdr Øystein Aasbø ended with a brief characterization of KM intervention in Africa.

### **B. EOMAP** (08.1B)

Dr Knut Hartman presented on EOMAP’s objectives and SDB and SLB technology. He also gave an overview on why and where to use SDB technology as well as the limitations of this technology. A concise explanation on the software solution was presented. Finally, a brief presentation was given on 4S – Satellite Seafloor Survey Suite an EU innovation Project, and HSWG - SDB Best Practice PT. About the resolution of LDB, Dr Knut Hartman explained that satellite Lidar is very sparse when compared to regular bathymetric Lidar.

### **C. Teledyne – Caris** (08.1C)

Dr. Nicola Scotto di Vettimo presented on Teledyne Caris current software. He briefly introduced S-101 charting standard and S102 Bathymetric Surface Standard, as well as the geospatial solutions for S-100. Next a synopsis was displayed on present software solutions, training and support focused especially on S-100 standards.

### **D. ESRI Inc.** (08.1D)

Mr. Rafael Ponce presented on ESRI developments and products available. A brief introduction on GIS was given, followed by Hydro spatial data integration and data management. ESRI solutions were shown and shortly described. Mr. Rafael Ponce explained ESRI is supporting S-101 in all its features, however ESRI is not converting S57 to S101 conversion, instead ESRI uses a single data base to produce either S-57 or S-101.

### **E. IC-ENC** (08.1E)

*(Ref EAtHC16-28 IC-ENC)*

Mr. James Harper, General Manager of IC-ENC, presented IC-ENC (International Centre for Electronic Navigational Charts). A brief description on IC-ENC structure was given. Followed by an explanation on the IC\_ENC Services, the production support, validation, distribution and revenue. Mr. James Harper gave a quick overview on S-100 work plan with an outline of the services and products that can be delivered. Before concluding, the Co-operation arrangement was pointed out as a key IC-ENC governance document.

### **F. PRIMAR** (08.1F)

*(Ref EAtHC16-29 PRIMAR)*

Mr. Hans Christoffer Lauritzen, director of Primar, presented Primar and its current updates, focusing he's presentation on S-100. S-101 developments have been shown and PRIMAR's user interface and training portal was detailed.

## **EAtHC16 Decision 31:** Note all reports from agenda item 8:

- [KONGSBERG Maritime](#)
- [EOMAP](#)
- [Teledyne Caris](#)
- [ESRI Inc.](#)
- [IC-ENC](#)
- [PRIMAR](#)

## 18. Democratic Republic of Congo enrolled EAtHC as a member state (09.1A)

Democratic Republic of Congo, by Mr. Patrick MUSITUMBU ITAKALA, has signed the EAtHC Statutes together with the EAtHC Chair RAdm Carlos Ventura Soares and the IHO Director Mr. Abri Kampfer.

## 19. EAtHC Statutes amendments approval (09.1A)

As previously agreed, the Chair restarted the Statutes amendment discussion, and with the contribution of all. A final Statutes document was agreed and approved with IHO congratulation for all the hard work.

France mentioned the French translation will still need to be done later.

Statute amendments were approved unanimously.

**EAtHC16 Decision 32:** [Approve the statutes amendments.](#)

## 20. Review of the Actions and Decisions (09.1B)

*(Doc EAtHC16-04 – List of Decisions)*

*(Doc EAtHC16-05 – List of Recommendations)*

*(Doc EAtHC16-06 – List of Actions)*

The Actions, Decisions and recommendations were reviewed and agreed unanimously.

**EAtHC16 Decision 33:** [Approve the list of Decisions.](#)

**EAtHC16 Decision 34:** [Approve the list of Recommendations.](#)

**EAtHC16 Decision 35:** [Approve the list of Actions.](#)

## 21. Date and Venue of EAtHC17 (09.1C)

The Chair started by explaining Cape Verde is willing to host next EAtHC meeting, and Ms. Joana Helena Morais de Carvalho, from Cabo Verde, took the floor to say Cabo Verde is looking forward to hosting EAtHC17 and will confirm it before January 2022. France noted its contentment on Cabo Verde offer and will remain as a second option for hosting EAtHC17. Portugal congratulated on Cabo Verde decision to be the next host for the EAtHC meeting.

Morocco have volunteered to be next Vice Chair with France showing support on this.



IHO suggested EAtHC to decide on the date as soon as possible. With EAtHC planning for 26 to 30 September of 2022.

**EAtHC16 Decision 36:** Note Morocco volunteered to be next EAtHC Vice Chair.

**EAtHC16 Recommendation 29:** Cabo Verde to decide viability to hold the next EAtHC, NLT 31 DEC 2021. France still in stand-by.

**EAtHC16 Action 21:** Provide the EAtHC Chair with a date and location for the 17th EAtHC conference to be held in 2022.

## **22. Closing Remarks (09.1D)**

The Chair closed the meeting thanking the participants and emphasizing that all should be proud of the works, where several relevant goals were achieved. The presence and enrolling on the EAtHC by the Democratic Republic of Congo was remarkable. The Chair asserted it is fundamental to have “face to face” conferences as all can network and discuss issues in a more focused and easy way. This meeting was successful on this hybrid format. The Chair hopes that significant improvements can be achieved in the next months. Portugal as Chair and France as Vice Chair are fully committed in this mission. It is fundamental for all members to be engaged in hydrographic related actions in a daily basis. The presence of Industry was acknowledged and always appreciated as fundamental. The Chair finalized thanking the support of IHO in the meeting where their guidance and wise advice were fundamental for the results.

## **23. Annexed - Glossary**

## **24. Annexed - Documents**

Doc EAtHC16-01 – Chair Opening Remarks

Doc EAtHC16-02 – List of Participants

Doc EAtHC16-03 – Agenda

Doc EAtHC16-04 – List of Decisions

Doc EAtHC16-05 – List of Recommendations

Doc EAtHC16-06 – List of Actions

## **25. Annexed - Documents in external reference (IHO’s EAtHC website)**

## Glossary

**AMSSA** - African Maritime Safety and Security Agency

**APGB** - harbour administration of Guiné Bissau

**CB** – Capacity Building

**CBSC** - Capacity Building sub Committee

**CBWP** - Capacity Building work Program

**Cdr** – Commander

**CSB** – Crowdsourced Bathymetry

**DCDB** - Data Centre for Digital Bathymetry

**DGPDN** - Direção-Geral de Política de Defesa Nacional

**DHOC** - *Division de l'Hydrographie, l'Océanographie et de la Cartographie de la Marine Royale de Morocco*

**DTM** – Digital Terrain Model

**EAtHC** - Eastern Atlantic Hydrographic Commission

**EAtHC15** - 15<sup>th</sup> Eastern Atlantic Hydrographic Commission Plenary

**EAtHC16** - 16<sup>th</sup> Eastern Atlantic Hydrographic Commission Plenary

**ECDIS** - Electronic Chart Display and Information System

**ENC** - Electronic Navigation Charts

**EU** - European Union

**GEBCO** - General Bathymetric Chart of the Oceans

**HO** – Hydrographic Office

**HSSC** - Hydrographic Services and Standards Committee

**HSWG** - Hydrographic Surveys Working Group

**IALA** - International Association of Lighthouse Authorities

**ICCWG**- International Charting Coordination Working Group

**IHM** - Instituto Hidrográfico De La Marina

**IHO** - International Hydrographic Organization

**IHPT** - Instituto Hidrográfico – Portugal

**IHR** - International Hydrographic Review

**IMO** - International Maritime Organization

**IMP** - Maritime Port Administration of Cape Verde – “Instituto Marítimo Portuário”

**IOC** - Intergovernmental Oceanographic Commission – UNESCO

**IOT** – in order to

**IRCC** - Inter-Regional Coordination Committee

**IRCC13** – 13<sup>th</sup> Inter-Regional Coordination Committee Conference

**KM** - Kongsberg Maritime

**Lt Cdr** – Lieutenant Commander

**MACHC** - MesoAmerican-Caribbean Sea Hydrographic Commission

**MASS** - Maritime Autonomous Surface Ships

**MDN** - Ministry of Defence

**MNE** - Portuguese Ministry of Foreign Affairs

**MoU** – Memorandum of Understanding

**MOWCA** - Maritime Organisation of West and Central. Africa

**MSDI** - Marine Spatial Data Infrastructures

**MSDIWG** - Marine Spatial Data Infrastructures Working Group

**MSI** - Maritime Safety Information

**NCWG** - Nautical Chart Working Group

**NHC** - National Hydrographic Committees

**NLT** – Not later than

**PCA** - Primary Charting Authority

**PMAWCA** - Port Management Association of Western and Central Africa

**POC** – Point of Contact

**PT** – Project Team

**R&D** - Research and development

**RAdm** – Rear Admiral

**ROP** – Rules of Procedures

**SDB** - Satellite Derived Bathymetry

**SHOM** - *Service hydrographique et océanographique de la Marine*

**SOLAS** - International Convention for the Safety of Life at Sea

**SPI** - Strategic Performance Indicators

**SWAIMS** - Support to West Africa integrated Maritime Security

**TOR** – Terms of Reference

**UKHO** - United Kingdom Hydrographic Office

**UNESCO** - United Nations Educational, Scientific and Cultural Organization

**VTC** - Video teleconferencing

**WEND** – World Wide ENC Database

**WG** – Working Group



**WMO** - World Meteorological Organization

## Doc EAtHC16-01

"Ladies and Gentlemen

I'm Rear Admiral Carlos Ventura Soares, Director General of the Portuguese Hydrographic Institute, and currently Chair of this commission.

I must say I am extremely delighted and honoured to have taken over the role as chair of the East Atlantic Hydrographic Commission last year.

Now, please accept my apologies for the tight timings we had while organizing EAtHC 16, with all the uncertainties of COVID19, but surely worthwhile.

Almost one year ago, we had the opportunity to meet on a VTC (Video Tele-Conferencing), as a result of the COVID19 pandemic, and this was the conceivable form of reunion to guarantee the safety of all. Today, one year later, we are gathered here in a hybrid fashion, undoubtedly a new approach to consider, and as we all believe, the best current solution for guaranteeing assurance of all. Nevertheless, a paramount note is this is the coming back to the essential proceeding of live, on-site meetings as it is an established fact that face-to-face conferences are the foundation for establishing and sealing relations.

Here and now, and regardless of all the adversities, I can assure this EAtHC 16 has all the conditions to be successful, having the participation of XX delegates of YY countries, and ZZ delegates of other international organizations, academia, industry, etc ... All EAtHC is to be congratulated, as it is outstanding the high level of attendance on this 16<sup>th</sup> edition, considering the crisis we are all facing throughout the world.

Ladies and Gentlemen, I am cognizant of all the effort required to all delegations in order to make it possible to travel to Portugal, however, I am also confident this effort is the motto for a conference which will allow the reinforcement of this Region's commitment to Hydrography along with the mutual support of all partner Hydrographic Offices (HO's).

IHO is a profoundly appreciated representative of the international maritime community. Our commitment, this mutual cooperation, along with the expertise, the capacity of all members, it has been crucial to our continued support to mariners in the Region, and any others that may need our data and knowledge.

We must all reflect on the importance of sharing collective experience and maximizing the opportunities and benefits while minimizing duplicate effort. One must highlight the importance of maintaining communications beyond this formal sessions, on the perseverance of continuing the collaboration advancing, and enduring the connection and work among us all.

Finally, I look forward to the active participation of all on this meeting.

Portugal is strongly, firmly committed in the institutional collaboration, with all the countries in the Region, and especially with the Portuguese speaking African countries. Solely following this course will we be capable of achieving the later objectives of IHO's strategic plan and the United Nations Decade of Ocean Science for Sustainable Development

I expect to see EAtHC endeavor preeminent in the Region's evolution and in the global ocean concept as support for sustainable development."

## Doc EAtHC16-02

### List of All Participants

EAtHC Status		Name	Organization	Country
	<b>Participants (total)</b>			19
IHO Representative	Mr.	Abri KAMPFER	IHO	
IHO Representative	Mr.	Yves GUILLAM		
IHO Council Chair	Ms.	Geneviève BÉCHARD	IHO	
IHO CSBWG Chair	Ms.	Jennifer Jenckens	NOAA's National Centers for Environmental Information	
Member	Mr.	Laurent Onyemba Djongandeke	Ministère des Transports	Democratic Republic of the Congo
Member	Mr.	Patrick MUSITUMBU ITAKALA	DIRECTION DE LA MARINE ET DES VOIES NAVIGABLES	
Member	Mr.	Marc BAZONGA BAZA	Port de Banana	
Member	Mr.	Bibiche BOKONDO ALEMUA		
Member	RAdm	Laurent Kerleguer	SHOM	France
Member	Lt Cdr	Julien Smeeckaert		
Member	Captain	Pierre-Yves Dupuy		
Member	Ms.	Amandine Lefrançois		
Member	Mr.	Henri Dolou		
Member	Ms.	Nathalie LEIDINGER		
Member	Mr.	Thierry Schmitt	Ghana Maritime Authority	Ghana
Member	Ms.	Marilyn Eghan		
Member	Mr.	Isaac Oppong		
Member	Captain	Johnson Adjetey		

Member	Mr.	Sebastian Botsyo		
Member	Mr.	Darlington Newton Akrofi		
Member	Ing..	Isaac Yirenyi	Ghana Ports and Harbours Authority	
Member	Commodore	Khalid LOUDIYI	Division de l'Hydrographie, de l'Océanographie et de la Cartographie de la Marine Royale	Morocco
Member	Lt	Abdallah HADOU		
Member	RAdm	Chukwuemeka Ebenezer OKAFOR	Nigerian Navy Hydrographic Office	Nigeria
Member	Commander	AS IDRIS		
Member	RAdm	Carlos Ventura Soares	Instituto Hidrográfico	Portugal
Member	Captain	Miguel Bessa Pacheco		
Member	Cdr	João Vicente		
Member	Ms.	Paula Sanches		
Member	Lt Cdr	Geraldes Dias		
Member	Cdr	Videira Marques		
Member	Captain	JOSE D. GONZÁLEZ-ALLER LACALLE	INSTITUTO HIDROGRÁFICO DE LA MARINA	Spain
Member	Commander	SALVADOR MORENO SOBA		
		ABKANLOU Yezid	Direction de la Marine Marchande	Benin
Associated Member	Ms.	Joana Helena Morais de Carvalho	Instituto Marítimo Portuario	Cabo Verde
Associated Member	Mr.	Raúl J. Vitória Soulé		
Associated Member	Mr.	Manuel Monteiro		
Associated Member	Mr.	Vlademiro Pires		
Associated Member	Mr.	Zeferino Fortes		
Associated Member	Mr.	Tchiss Ambov AMBANA-WINTHER-GRENIER	PORT AUTONOME DE POINTE-NOIRE	Congo

Associated Member	Mr.	Seydou SANGARE	Port Autonome d'Abidjan	Côte d'Ivoire
Associated Member	Mr.	KOUADIO ANDRE N'DOLI		
Associated Member	Mr.	Siga Batista	Instituto Marítimo e Portuário	Guiné-Bissau
Associated Member	Mr.	Alberto Tipote	Administração dos Portos da Guiné Bissau	
Associated Member	Mr.	Pathe Yero Thioye	Port Autonome de Dakar/Phares et Balises	Senegal
Associated Member		David AKODA	Ministry of Maritime Economy, Fisheries and Coastal Protection	Togo
Associated Member		Kpatcha M. Florent GNAMA	Ministère de l'Économie maritime, des Pêches et de la Protection Côtière	
coastal states non-members	Mr.	Antonio NGOMO EKIRI	General Direction of Safety and Aids to Navigation	Equatorial Guinea
coastal states non-members	Mr.	Dominic Correa	Gambia Ports Authority	Gambia
coastal states non-members		Wandifa Saidyleigh	Gambia Ports Authority	
coastal states non-members		D. Colliyea Gayan	Liberia Maritime Authority	Liberia
coastal states non-members	Comandante	Manuel Diogo do Nascimento	ENAPORT	São Tomé e Príncipe
coastal states non-members	Eng.º	Carlos Amaro Fernandes		
other states non-members	Ms.	Cathy Tunks	United Kingdom Hydrographic Office	UK
other states non-members	Mr.	Nathanael Knapp		
Organizations	Ms.	Gerardine Delanoye	International Association of Lighthouse Authorities (IALA)	
Organizations	Mr.	Jacques Manchard		



Organizations	Commodore	Rodrigues Campos	Support to West Africa Integrated Maritime Security (SWAIMS) – Camões Implementation Unit	
Organizations	Captain	Rodeia Ribeiro		
Organizations	Captain	Palhas Ezequiel		
Organizations	Commander	Cardoso da Silva		
Organizations	Commander	Nunes Ferreira		
Organizations	Mr.	José Luiz Moutinho	Air Centre	
Organizations	Ms.	Vicki FERRINI	Seabed 2030 Project	
Organizations	Mr.	John Ndarathi	IOC Sub Commission for Africa & the Adjacent Island States (IOCAFRICA)	
Organizations	Mr.	Mika Odido		
Organizations	Mr.	Douglas Roush	Maritime Safety Office National Geospatial-Intelligence Agency (NGA)	
Industria & RENCs	Cdr	Øystein Aasbø	Kongsberg Maritime AS	
Industria & RENCs	Mr.	Nicola Scotto di Vettimo	Teledyne Caris	
Industria & RENCs	Mr.	James HARPER	IC-ENC	
Industria & RENCs	Mr.	Hans Christoffer Lauritzen	PRIMAR	
Industria & RENCs	Mr.	Knut Hartmann	EOMAP	
Industria & RENCs	Mr.	Rafael Ponce Urbina	ESRI Inc.	
Portuguese Representatives	Commander	Calisto de Almeida	DGPDN	
Portuguese Representatives	Dr.	José Eduardo Rosa	MNE	

## Doc EAtHC16-03

16<sup>th</sup> Eastern Atlantic Hydrographic Commission Plenary  
 Portuguese Hydrographic Institute (Instituto Hidrográfico - IHPT), Lisbon, Portugal  
 From September 29<sup>th</sup> to October 1<sup>st</sup> 2021.

VTC ( ZOOM Link: <https://videoconf-colibri.zoom.us/j/82936785266?pwd=MTYxZUtdbDVPeGVvQTNkWTVtNUptZz09>)

All times: Lisbon time (UTC+1)

EAtHC16 Tuesday 28 September 2021 Day 0			
Time (UTC+1)	Item	Description	Responsible
1400		VTC test	
1800		Registration and COVID19 test	
1900		Ice-breaker at Instituto Hidrográfico (Casual)	
EAtHC16 Wednesday 29 September 2021 Day 1 - Plenary			
Time (UTC+1)	Item	Description	Responsible
0800 0915		In-person Administrative Registration and COVID19 test VTC Login	EAtHC16 Secretariat
0930		Opening Remarks Short introduction of the Heads of delegation	Chair Vice-Chair IHO Director
1000	1.0	<b>EAtHC Administration/organisational issues</b>	
5 mins	01.1A	Approval of agenda	Chair
10 mins	01.1B	Chairmanship/Vice-Chairmanship	Chair Vice-chair
	01.1C	Matters Arising from Minutes of EAtHC15 <b>Blank intentionally</b>	Chair
20 mins	01.1D	Review of 15th EAtHC Actions List Action items about ICC, MSI, NAVAREA, MSDI will discussed in the EAtHC subgroups	EAtHC16 Secretariat
	01.1E	Actions and Recommendations arising from IRCC13 <b>Blank intentionally</b>	IHO/Chair
25 mins	01.1F	Review of the current EAtHC Statutes (If necessary) Create a WG to work on this, Thursday afternoon, IOT eventual approval on Friday)	Chair Open discussion

<b>1100</b>		<b>Coffee</b>	
<b>1130</b>	<b>2.0</b>	<b>IHO Matters</b>	
15 mins	02.1A	IHO Secretariat Report	IHO
15 mins	02.1B	IRCC13 Report (include 01.5A) Actions and Recommendations arising from IRCC13	Chair supported by IHO
15 mins	02.1C	HSSC13 Report	France (HSSC Vice-chair) supported by IHO
<b>1215</b>	<b>7.0</b>	<b>Relevant International and Regional Organizations' Report</b>	
12 mins	07.1A	International Association of Lighthouse Authorities (IALA)	Gerardine Delanoye
12 mins	07.1B	IOC Sub Commission for Africa & the Adjacent Island States (IOCAFRICA)	Mika Odido
12 mins	07.1C	Support to West Africa Integrated Maritime Security (SWAIMS)	Rodrigues Campos
<b>1300</b>		<b>Lunch</b>	
<b>1415</b>		<b>EAtHC Committees and Working Groups</b>	
20 mins	03.1A	ICCWG	Julien Smeekaert
5 mins	03.1B	Approval of ICCWG TOR	Julien Smeekaert
10 mins	03.1C	Report on GDMSS, MSI and NAVAREA Coordination	France
15 mins	03.1D	Capacity Building Plan	Julien Smeekaert
10 mins	03.1E	Open discussion in assistance, training and education: offers and needs	Chair All
20 mins	03.1F	MSDI (include 02.1E) HSSC MSDI WG Report Answers to the MSDI questionnaire Creation of EAtHC MSDI WG proposal Presentation about IHPT MSDI infrastructure	Chair LtCdr Geraledes Dias All
<b>1545</b>		<b>Coffee</b>	
<b>1615</b>		<b>EAtHC Committees and Working Groups (cont.)</b>	
15 mins	03.1G	Disaster Response Framework proposal and approval	Chair
12 mins	03.1H	Open discussion about Bilateral and Regional Cooperation Agreements. Examples of initiatives, support from: <ul style="list-style-type: none"> <li>Maritime Organization of West and Central Africa (MOWCA)</li> <li>Ports Management Association of West and Central Africa (PMAWCA)</li> <li>African Maritime Safety and Security Agency (AMSSA)</li> </ul>	Chair ALL

18 mins	03.1I	Regional projects: <ul style="list-style-type: none"> <li>• EMODNet, other EU support, other projects</li> <li>• Air Centre</li> </ul>	Chair supported by France (EU Support) Eng. José Moutinho
<b>1700</b>	<b>7.0</b>	<b>Relevant International and Regional Organizations' Report</b>	
15 mins	07.1D	Seabed 2030 Project	Vicki FERRINI
<b>1715</b>	<b>2.0</b>	<b>IHO Matters</b>	
15 mins	02.1F	Crowd Sourced Bathymetry Report (CSB)	Jennifer Jenckens
<b>1730</b>		<b>End of Day 1</b>	

<b>EAtHC16</b>			
<b>Thursday 30 September 2021 Day 2 - Plenary</b>			
Time (UTC+1)	Item	Description	Responsible
0830		Administrative Issues, VTC login	EAtHC16 Secretariat
<b>0900</b>		Welcome	Chair
<b>0910</b>	<b>4.0</b>	<b>S-100 implementation in the Region</b>	
	04.1A	S-100 Roadmap WENDWG Report (02.1D) Open discussion: <ul style="list-style-type: none"> <li>• PCA and relationship with S-1XX products and services</li> <li>• Capacity building (what is the best method? Seminars, e-learning, training, other)</li> <li>• Etc...</li> </ul>	Chair France supported by IHO All
<b>0935</b>	<b>5.0</b>	<b>IHO Revised Strategic Plan 2021-2026</b>	
	05.1A	Brief summary about IHO Strategic Plan, IRCC position Divulgate of IRCC WORKSHOP ON THE STRATEGIC PLAN 7 October 2021, Video teleconference (VTC) Event Open discussion: Issues and ideas to the workshop	Chair supported by IHO
<b>1000</b>	<b>6.0</b>	<b>National Reports (max: 12 minutes each)</b>	
	06.1B	France	
	06.1C	Ghana	
	06.1D	Morocco	
	06.1E	Nigeria	
<b>1100</b>		<b>Coffee</b>	
<b>1130</b>	<b>6.0</b>	<b>National Reports (max: 12 minutes each)</b>	
	06.1F	Portugal	
	06.1G	Spain	
	06.1H	Cabo Verde	
	06.1I	United Kingdom	
	06.1J	Open discussion to others	
<b>1245</b>		<b>Photo &amp; Lunch</b>	
<b>1415</b>	<b>8.0</b>	<b>Industry and other organizations (max: 12 minutes each)</b>	
	08.1A	KONGSBERG Maritime	Miguel Angel Lleches Sempere
	08.1B	EOMAP	Knut Hartmann
	08.1C	Teledyne Caris (In-person)	Nicola Scotto di Vettimo
	08.1D	ESRI Inc.	Rafael Ponce Urbina
	08.1E	IC-ENC	James HARPER

	08.1F	PRIMAR	Hans Christoffer Lauritzen
<b>1545</b>		<b>End of Day 2 / Coffee</b>	
<b>1615</b>		Bilateral / multilateral meetings if needed <b>Live Industry presentations and/or demonstrations</b> EATHC WG on Statutes Decisions and Action list work	
<b>1930</b>		<b>Dinner at Clube Militar Naval (with traditional Portuguese song: FADO) SMART CASUAL</b>	

EAtHC16 Friday 01 October 2021 Day 3 - Plenary			
Time (UTC+1)	Item	Description	Responsible
0830		Administrative Issues VTC login	EAtHC16 Secretariat
<b>0900</b>		Welcome	Chair
<b>0910</b>	<b>9.0</b>	<b>Closure</b>	
	09.01A	Any other business (IHO Council...) <b>Approval of statutes if quorum exists</b>	Chair with support of IHO
	09.01B	Review of Actions and Decisions	
	09.01C	Details for the next meeting	
	09.01D	Closing remarks	
<b>1100</b>		<b>Coffee</b>	
<b>1130</b>		<b>Visit to Hydrographic Office</b>	
<b>1300</b>		<b>Lunch</b>	

## Doc EAtHC16-04

### List of Decisions

**EAtHC16 Decision 1:** Approve the Agenda of the EAtHC16 Meeting (doc. EAtHC16-03).

**EAtHC16 Decision 2:** Approve actions list review proposal

**EAtHC16 Decision 3:** Approve on following the statutes amendment proposal procedure.

**EAtHC16 Decision 4:** Note the IHO Secretariat Report.

**EAtHC16 Decision 5:** Note the IRCC Report and recommendations

**EAtHC16 Decision 6:** Note the HSSC Report and recommendations

**EAtHC16 Decision 7:** Note the proposed metrics for the SPIs and target values for 2026, consider the contribution of EAtHC Members to the SPIs under HSSC

**EAtHC16 Decision 8:** Note the potential options for future production of S-101 ENC in conjunction for S-57

**EAtHC16 Decision 9:** Note the establishment of the new PTs and encourage Member States to participate

**EAtHC16 Decision 10:** Note ICCWG report.

**EAtHC16 Decision 11:** Agree to accept ICCWG proposed priorities.

**EAtHC16 Decision 12:** Approve the ICCWG proposal to update the INT scheme with modification on Spanish INT chart INT1903.

**EAtHC16 Decision 13:** Approve ICCWG ToR.

**EAtHC16 Decision 14:** Note GDMSS, MSI and NAVAREA Coordination report.

**EAtHC16 Decision 15:** Note regional CB coordinator report.

**EAtHC16 Decision 16:** Approve the CB working plan.

**EAtHC16 Decision 17:** Note MSDI report.

**EAtHC16 Decision 18:** Agree to establish EAtHC MSDIWG.

**EAtHC16 Decision 19:** Agree to have Portugal leading MSDIWG. Portugal must propose the ToRs NLT December 31 2021.

**EAtHC16 Decision 20:** EAtHC MSDIWG to be responsible for the support to Seabed 2030, Crowdsourced Bathymetry and other programs/projects related with managing and sharing marine spatial data and for support of disaster response framework if required.

**EAtHC16 Decision 21:** Note the EMODNet and Air Centre reports.

**EAtHC16 Decision 22:** Note all reports from agenda item 7 (Relevant International and Regional Organizations' Report):

- International Association of Lighthouse Authorities (IALA)



- IOC Sub Commission for Africa & the Adjacent Island States (IOCAFRICA)
- Support to West Africa Integrated Maritime Security (SWAIMS)
- Seabed 2030 Project.

**EAtHC16 Decision 23:** Note the CSB Report

**EAtHC16 Decision 24:** Approve the disaster response framework with one recommendation from UKHO (include PCA in the framework).

**EAtHC16 Decision 25:** Note the WENDWG report.

**EAtHC16 Decision 26:** EAtHC Member states to coordinate the efforts on the implementation of S-100 and promote the cooperation and exchange of experiences.

**EAtHC16 Decision 27:** EAtHC Member States agree to participate on IRCC WORKSHOP ON THE IHO STRATEGIC PLAN IOT contribute to SPI and develop the Analyses Gap.

**EAtHC16 Decision 28:** EAtHC Member States to be involved to develop measurements to the SPI allocated to them and report back to IRCC14 and consider the contribution to the SPIs under HSSC.

**EAtHC16 Decision 29:** Note all reports from agenda item 6 (France, Ghana, Morocco, Nigeria, Portugal, Spain, Cabo Verde, United Kingdom).

**EAtHC16 Decision 30:** Note all statements from agenda item 6 (Guiné-Bissau, São Tomé e Príncipe and Gambia).

**EAtHC16 Decision 31:** Note all reports from agenda item 8:

- KONGSBERG Maritime
- EOMAP
- Teledyne Caris
- ESRI Inc.
- IC-ENC
- PRIMAR

**EAtHC16 Decision 32:** Approve the statutes amendments.

**EAtHC16 Decision 33:** Approve the list of Decisions.

**EAtHC16 Decision 34:** Approve the list of Recommendations.

**EAtHC16 Decision 35:** Approve the list of Actions.

**EAtHC16 Decision 36:** Note Morocco volunteered to be next EAtHC Vice Chair.

## Doc EAtHC16-05

### List of Recommendations

**EAtHC16 Recommendation 1:** In accordance with the EAtHC Statutes in force, the DRC is now invited to consider the possibility of signing the EAtHC Statutes to become a full Member of the EAtHC.

**EAtHC16 Recommendation 2:** As planned under agenda item 1.6, the EAtHC is invited to consider the need to adapt its respective instruments to comply with the recommendations of the IHO Resolution 2/1997 as amended by A-2 as appropriate.

**EAtHC16 Recommendation 3:** With the possible development of INTogIS III to encompass S-100 services, EAtHC members are invited to consider the future role of the International Charting Coordinator for Region G.

**EAtHC16 Recommendation 4:** EAtHC members are invited to continue to follow and evaluate the possibility to contribute to the CB Program.

**EAtHC16 Recommendation 5:** The Chair is requested to encourage all EAtHC 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) Establish and support, within their relevant maritime administrations, individual national structures with responsibility for the gathering and communication of MSI;
- c) Establish and maintain effective communications with the relevant NAV and MET Area Coordinators to ensure the timely provision of MSI;
- d) Use and follow the guidance provided in S-53 – Joint IMO/IHO/WMO Manual on Maritime Safety Information – to ensure the necessary facilities and capabilities are provided and maintained for the gathering and communication of MSI within their area of national responsibility;
- e) Identify suitable individuals to undertake both the online e-learning modules and the physical MSI training course, and ensure their subsequent continued relevant employment within the national structure.

**EAtHC16 Recommendation 6:** Encourage Members, Associate Members and Observers to:

- a) Make data openly 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 and become actively involved in the GEBCO program and its subordinate projects;
- e) Continue inviting GEBCO program and Seabed 2030 project representatives to EAtHC meetings to discuss options for deepened cooperation and support;
- f) Encourage Members to make more detailed and comprehensive seabed data available – in particular deep ocean data from transit or commercial / scientific surveys;
- g) Make more people aware of the importance of gaining a complete picture of the seabed:

**EAtHC16 Recommendation 7:** At least IRCC members (from EAtHC) should attend IRCC Workshop on the strategic Plan - 7 October 2021, VTC event IOT prepare the following discussions and analysis gaps.

**EAtHC16 Recommendation 8:** To implement the S-57 ENC scheme via INTOGIS and to maintain it with planned and produced ENCs (deadline for implementation: December 2022).

**EAtHC16 Recommendation 9:** To follow the relevant (ongoing) work of the WENDWG on the implementation of the S-101 ENC scheme and on the application of some or all of the S-101 principles to other S-1xx products.

**EAtHC16 Recommendation 10:** To develop S-100 training in the framework of EAtHC Capacity Building and to benefit from S-100 training opportunities with IHO (other RHCs webinars...) and RENCs.

**EAtHC16 Recommendation 11:** Have awareness-raising actions for decision-makers in order to set up an efficient and sustainable organization for the collection and dissemination of MSI, as well as training actions for operators are necessary in almost all Western and Central African coastal states.

**EAtHC16 Recommendation 12:** Update Country information system, maintained by the IHO, and use relevant information for POC when needed.

**EAtHC16 Recommendation 13:** Member States are invited to consider actively sharing contents, resources and experiences with the E-learning PT.

**EAtHC16 Recommendation 14:** Member States should share their education and training programs and focus on on-job training (ex: onboard hydrographic survey training, in-office chart production training, etc.).

**EAtHC16 Recommendation 15:** Member states should articulate the IHO CB initiatives with national initiatives IOT have coastal state on-job training and add real value to the coastal states.

**EAtHC16 Recommendation 16:** Member States should consider being members of the MSDIWG.

**EAtHC16 Recommendation 17:** All Coastal States are now requested to indicate their position on the provision of CSB data from ships within waters subject to their national jurisdiction into the public domain.

**EAtHC16 Recommendation 18:** Offer a positive response to the IHO CL 21/2020 & IRCC CL 01/2020.

**EAtHC16 Recommendation 19:** Consider joining and/or attending the CSBWG.

**EAtHC16 Recommendation 20:** EAtHC coastal States should inform the EAtHC Chair on points of contact (POC) and the means of communication.

**EAtHC16 Recommendation 21:** EAtHC coastal States should prepare a list of (possibly) available assets that impacted coastal States may consider to request via diplomatic channels to the neighboring States.

**EAtHC16 Recommendation 22:** The Chair should ensure a permanent agenda item on RHC meetings to monitor the readiness of the Commission to respond to disasters and conducting regular table-top exercises to evaluate the procedures.

**EAtHC16 Recommendation 23:** Create a section for disaster response in the EAtHC webpage.

**EAtHC16 Recommendation 24:** EAtHC Chair should continue engaging MOWCA and PMAWCA (& other regional organizations) to participate in the Plenary's.

**EAtHC16 Recommendation 25:** Coastal States should share experiences and POCs at regional level.

**EAtHC16 Recommendation 26:** Note the adoption the IHO Resolution - Principles of the WEND for S-1XX Products (WEND-100 Principles) – CL 37/2021.

**EAtHC16 Recommendation 27:** Note the S-100 concerns at regional level (transition from S-57 to S-101; S-101 ENC Scheme; Production/publication of S-101 ENCs; Coordination; cooperation between HOs; PCA role; RENCs involvement/participation (ex: seminars; training etc); Other applicable S-100 products; Other national authorities were HOs is not the data owners).

**EAtHC16 Recommendation 28:** Member States be engaged in the WG working on S100 and should attend next WENDWG meeting.

**EAtHC16 Recommendation 29:** Cabo Verde to decide viability to hold the next EAtHC, NLT 31 DEC 2021. France still in stand-by.

## Doc EAtHC16-06

### List of Actions

#### EAtHC Members and Chair

**EAtHC16 Action 1:** Representatives of the EAtHC non-members coastal States are requested to contact their national authorities to encourage the signing of the EAtHC Statutes, and report to Chair.

**EAtHC16 Action 2:** Member States, Associate Members, Observers are invited to review their entry in the P5 - IHO Yearbook and C55 and to provide the IHO Secretariat with the appropriate updates or to report no change (CL 20/2019 refers) at least annually.

**EAtHC16 Action 3:** Provide IHO SECRETARIAT and EAtHC Chair with official documents related to national hydrographic committees (NHC), national hydrographic coordination committees and general procedures, to be considered for inclusion in C-16 (National Hydrographic Regulations).

**EAtHC16 Action 4:** Coastal States to make the transmission of survey data to their cartographic authority mandatory when contracting surveys with third parties (other HOs, private companies), in order to enable swift updating of nautical documents and charts, either by themselves providing the necessary data and documents to the charting authority or by authorising third parties to transmit these elements.

**EAtHC16 Action 5:** Coastal States are encouraged to formalize the fulfilment of their SOLAS obligations by making official agreements with their Primary Charting Authority (PCA), in accordance with the chapter V of the SOLAS Convention.

**EAtHC16 Action 6:** Representatives of the EAtHC Coastal States IHO non-members are invited to contact their national authorities to encourage to be IHO members.

**EAtHC16 Action 7:** EAtHC Members are invited to submit papers for publication in the IHR and through their representative to the IHR Board. Cdr Sunday ATA KPA (Nigeria) is representing EAtHC on the IHR Editorial Board

<https://ihr.iho.int/submit-an-article/>.

**EAtHC16 Action 8:** Member States to advise the IHO Secretariat of any update/change to their position in relation with the CSB questionnaire (IHO CL 21/2020).

[https://iho.int/uploads/user/Inter-Regional%20Coordination/CSBWG/MISC/B-12\\_2020\\_EN\\_Acceptance\\_of\\_CSB\\_Data\\_in\\_NWJ\\_v3.0.pdf](https://iho.int/uploads/user/Inter-Regional%20Coordination/CSBWG/MISC/B-12_2020_EN_Acceptance_of_CSB_Data_in_NWJ_v3.0.pdf)

**EAtHC16 Action 9:** Member States are invited to participate in the Empowering Women in Hydrography project. CL 35/2021: Joint CANADA-IHO Project Empowering Women in Hydrography.

<https://iho.int/en/basic-cbsc-ewh>

**EAtHC16 Action 10:** Member States and submitting institutions are encouraged to engage with the IHO Secretariat early in the process preparing submissions for (CAT A & B) programme recognition.

<https://iho.int/en/education-programme-recognition-0>

**EAtHC16 Action 11:** 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 (CAT A & B) programme recognition.

<https://iho.int/en/education-programme-recognition-0>

**EAtHC16 Action 12:** EAtHC to include the measurement of the SPI attributed by IRCC and requested by HSSC in the annual Work Plans (Permanent).

**EAtHC16 Action 13:** Member States are encouraged to participate in the WG and PT of the IRCC and HSSC. EAtHC may appoint from among its Member States, Representatives to IHO instances, or international or regional committees. The designated Representatives of the Commission shall report to the Commission on any action or subject of interest.

**EAtHC16 Action 14:** Associated Member States are encouraged to participate in international or regional organizations and should share experiences, knowledge and POC.

**EAtHC16 Action 15:** Member States to share their training programmes and focus on on-job training (ex: on board hydrographic survey training, in-office chart production training, etc.).

**EAtHC16 Action 16:** Coastal States to inform the EAtHC Chair on points of contact and the means of communication, prepare and keep updated a National Communication Plan, identify appropriate contacts in the National Foreign Ministry IOT respond to Disaster Response Framework.

**EAtHC16 Action 17:** Coastal States to prepare a list of (possibly) available assets that impacted coastal States can consider to request via diplomatic channels to the neighbouring States IOT respond to Disaster Response Framework.

**EAtHC16 Action 18:** The Chair should ensure a permanent agenda item on RHC meetings to monitor the readiness of the Commission to respond to disasters, and conduct regular table-top exercises to evaluate the procedures.

**EAtHC16 Action 19:** Chair must continue engaging MOWCA and PMAWCA (& other regional organizations) to participate in the Plenary's.

**EAtHC16 Action 20:** PCA in the region should review agreements/MoUs with coastal states IOT adapt to the S-100 products/services and to promote bathymetric data sharing both to Chart and ENC production and IHO DCDB/GEBCO.

**EAtHC16 Action 21:** Provide the EAtHC Chair with a date and location for the 17th EAtHC conference to be held in 2022..

## **EAtHC ICCWG**

**EAtHC16 (ICC) Action 1:** INT & ENC Chart producers to check the consistency of the existing set of ENC with NGA's list of ports (Pub 150). To provide the regional charting coordinator with a set of proposals to complete large scales ENC schemes.

**EAtHC16 (ICC) Action 2:** INT chart producers to provide first editions and details of the new editions of INT charts to the INT Chart Coordinator (or ICCWG) at least three months prior to every EAtHC or ICCWG meeting in accordance with S-11 (3.14.1 – c).

**EAtHC16 (ICC) Action 3:** The newly adopted INT charts, with the agreement of the INT Chart Producer Nation to be subsequently transferred to the IHO SECRETARIAT for its chartroom reference collection and internal use (database validation, consultation, etc.).

**EAtHC16 (ICC) Action 4:** Chart producers to provide the regional charting coordinator with an update of the list of on-line chart catalogues, either directly or systematically when updating the Yearbook.

**EAtHC16 (ICC) Action 5:** Chart producers to update INT chart details (limits, scale, format) using INTOGIS 'web manager' interface.

**EAtHC16 (ICC) Action 6:** Regional Charting Coordinator to submit the new INT proposals/ major updates to the approval of the region G ICCWG in accordance with the ICCWG ToRs & RoPs and using the form made available.

**EAtHC16 (ICC) Action 7:** Regional G ICCWG to validate ENC schemes for UB1/2/3 and report back to the IHO SECRETARIAT. RCC to study with IHO Secretariat the possibility to copy the ENC catalogue in the ENC scheme.

**EAtHC16 (ICC) Action 8:** Specify how to manage ENC schemes (proposals for new cells, scheduled cells) with INTOGIS II.

**EAtHC16 (ICC) Action 9:** ENC producers to enter their ENC projects via the "manager" interface of the INTOGIS II portal. WHEN OPERATIONAL.

**EAtHC16 (ICC) Action 10:** ENC producers to send their ENC projects (production plan in shape format) to the charting coordinator.

**EAtHC16 (ICC) Action 11:** Upon the recommendations based on the proposals made by the NCWG on the Future of the Nautical Paper Chart, Member States should focus on ENC Schemes, but still follow applicable IHO Resolutions and Standards for any continuing INT chart production.

**EAtHC16 (ICC) Action 12:** Member States to note the information on ECDIS anomalies and support the implementation of the recommendations given by the ENCWG.

**EAtHC16 (ICC) Action 13:** Member states ENC producers to populate the CATZOC values (1 to 5) of their ENC cells

## **EAtHC MSIWG**

**EAtHC16 (MSI) Action 1:** To the NAVAREA II Coordinator to check on a regular basis the MSI Points of Contact (at least every 3 months).

**EAtHC16 (MSI) Action 2:** National MSI correspondents to report any change of contact point to the NAVAREA II coordinator without delay.

**EAtHC16 (MSI) Action 3:** To the NAVAREA II Coordinator to write to MSI POCs an official letter requesting that oil platform operators provide to the MSI POC:

- Updates on platforms locations and moving forecasts.
- POCs for liaison related to future movements.

**EAtHC16 (MSI) Action 4:** 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.

### **EAtHC CBWG**

**EAtHC16 (CB) Action 1:** Coastal States seeking CB assistance (including IMO audit preparation) to liaise, annually, with the regional CB coordinator not later than March 1st to be considered by the CBSC for CB work programme (CBWP).

**EAtHC16 (CB) Action 2:** Provide the regional CB Coordinator with the direct CB in-kind contribution made in the region.

**EAtHC16 (CB) Action 3:** Coastal states to make the IMO Member State Audit Scheme (IMSAS) conclusions relating to hydrographic services available to the IHO Secretariat and the CB coordinator in order to propose possible actions.

### **EAtHC MSDIWG**

**EAtHC16 (MSDI) Action 1:** Review the procedures for the transmission of survey data, making sure that all relevant national organisations can access the survey data covering their national waters.

**EAtHC16 (MSDI) Action 2:** Identify further potential sources of bathymetric measurements and survey data providers to facilitate the further completion of the Data Center for Digital Bathymetry (DCDB) data holdings.

**EAtHC16 (MSDI) Action 3:** Enrol as members in EAtHC MSDI WG.

**EAtHC16 (MSDI) Action 4:** Propose the terms of reference (ToR) and rules of procedure (RoP) of the EAtHC MSDI WG.

**EAtHC16 (MSDI) Action 5:** Create a web app with: 1.supporting documents and MSDI information; 2. common/base layers to MSDI projects (bathymetry, shoreline, maritime boundaries, etc.) and 3. Support disaster response framework.

**EAtHC16 (MSDI) Action 6:** Build an inventory (with links) of existing MSDI in the EAtHC region.



## Documents in external reference (IHO's EAtHC website)

Doc Ref	Description	Doc at IHO website	Minutes Topic	Agenda item
Ref EAtHC16-01	EAtHC Chair Report	EAtHC16_2021_01_EN_20210921-EAtHC16-agenda-item01.pdf	6 7 (A,B,C,D,E,F)	1.0 (01.1A, 01.1B, 01.1C, 01.1D, 01.1E, 01.1F)
Ref EAtHC16-02	IHO Report	EAtHC16_2021_02.1A_Presentation_IHO_Sec_Report_v1.2.pdf	8. A.	02.1A
Ref EAtHC16-03	IRCC Report	EAtHC16_2021_02.1B_EN_20210923-IRCC-Report.pdf	8. B.	02.1B
Ref EAtHC16-04	HSSC Report	EAtHC16_2021_02.3A_EN_Report_HSSC_13_V2.pdf	8. C.	02.1C
Ref EAtHC16-05	IALA Report	EAtHC16_2021_07.1A_EN_IALA_WWA_GD_20210924.pdf	9. A.	07.1A
Ref EAtHC16-06	IOC Sub Commission for Africa & the Adjacent Island States	EAtHC16_2021_07.1B_EN_IOCAFRI CA and the UN Decade of Ocean Science.pdf	9. B.	07.1B
Ref EAtHC16-07	Support to West Africa Integrated Maritime Security (SWAIMS)	EAtHC16_2021_07.1C_EN_SWAIMS_Camões IU_IH_29SET.pdf	9. C.	07.1C
Ref EAtHC16-08	ICCWG	EAtHC16_2021_03.1A_EN_ICCWG_report_V4.pdf	10. A.	03.1A
Ref EAtHC16-09	Report on GDMSS, MSI and NAVAREA Coordination	EAtHC16/EAtHC16_2021_03.1C_NAVAREAIL_report.pdf	10. C.	03.1C
Ref EAtHC16-10	Capacity Building Plan	EAtHC16_2021_03.1D_CB_presentation.pdf	10. D.	03.1D
Ref EAtHC16-11	Open Discussion in Assistance, Training and Education	EAtHC16_2021_03.1E_EN_20210923-training and education.pdf	10. E.	03.1E
Ref EAtHC16-12	MSDI Report	EAtHC16_03.1F_EN_20210929_MS DI_Presentation.pdf	10. F.	03.1F

Ref EAtHC16-13	EMODnet Project	EAtHC16_2021_03.1I_EN_emodnet bathy_CHATO.pdf	10. G.	03.1I
Ref EAtHC16-14	Seabed 2030	EAtHC16_2021_07.1D_EN_Seabed2030.pdf	11. D.	07.1D
Ref EAtHC16-15	CSB Report	EAtHC16_2021_02.1F_EN_CSB.pdf	12. D.	02.1F
Ref EAtHC16-16	Disaster Response	EAtHC16_2021_03.1G_EN_Presentation_20210923_disaster-response.pdf	13. G.	03.1G
Ref EAtHC16-17	Bilateral and Regional Cooperation Agreements	EAtHC16_2021_03.1H_EN_20210923-bilateral.pdf	13. H.	03.1H
Ref EAtHC16-18	S100 Roadmap	EAtHC16_2021_04.1A_Rev1_EN_20210930 - S-100_EAtHC-16_Agenda Item 4-v1.pdf	14. A.	04.1A
Ref EAtHC16-19	WENDWG Report	EAtHC16_2021_02.1D_EN_WENDWG-report_v4.pdf	14. B.	04.1A
Ref EAtHC16-20	IHO Strategic Plan 2021-2026	EAtHC16_2021_05.1A_Rev1_EN_20210930 - SPI_EAtHC-16_Agenda Item 5-v1.pdf	15	5.0 05.1A
Ref EAtHC16-21	<i>France National Report</i>	EAtHC16_2021_06.1B_EN_Presentation_National_Report_France-v2.pdf	16. A.	06.1B
Ref EAtHC16-22	<i>Ghana National Report</i>	EAtHC16_2021_06.1C_EN_Presentation_Ghana_Report.pdf	16. B.	06.1C
Ref EAtHC16-23	<i>Morocco National Report</i>	EAtHC16_2021_06.1D_Rev1_EN_Presentation_Morocco.pdf	16. C.	06.1D
Ref EAtHC16-24	<i>Portugal National Report</i>	EAtHC16_2021_06.1F_EN_Presentation_Portugal-National_Report_rev_final.pdf	16. E.	06.1F
Ref EAtHC16-25	<i>Spain National Report</i>	EAtHC16_2021_06.1G_EN_Presentation_National_Report.pdf	16. F.	06.1G
Ref EAtHC16-26	<i>Cabo Verde National Report</i>	EAtHC16_2021_06i_Presentation_Cabo Verde.pdf	16. G.	06.1H
Ref EAtHC16-27	<i>UK National Report</i>	EAtHC16_2021_06.1H_Presentation_UK National Report.pdf	16. H.	06.1I



<i>Ref EAtHC16-28</i>	IC-ENC	EAtHC16_2021_08.1E_EN_IC-ENC.pdf	17. E.	08.1E
<i>Ref EAtHC16-29</i>	PRIMAR	EAtHC16_2021_08.1F_Rev1_PRIMAR.pdf	17. F.	08.1F