

14th Eastern Atlantic Hydrographic Commission Conference Minutes

Cádiz (Spain), 18th – 20th October 2016

List of Acronyms

AO	Angola
ARSTM	Académie Régionale des Sciences et Techniques de la Mer (Abidjan, CI)
CB	Capacity Building
CD	Democratic Republic of the Congo
CG	Republic of the Congo
CHAtO	Commission hydrographique de l'Atlantique oriental
CI	Côte d'Ivoire
EAtHC	Eastern Atlantic Hydrographic Commission
ES	Spain
EU	European Union
FR	France
GH	Ghana
GN	Guinea
GW	Guinea Bissau
IAEA	International Agency of Atomic Energy
IALA	International Association of Lighthouse Authorities
IGA	Ingénieur Général de l'Armement
IHB	International Hydrographic Bureau
IHM	Instituto Hidrográfico de la Marina (ES)
IHO	International Hydrographic Organization
IHPT	Instituto Hidrográfico (PT)
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Organization
IODE	International Oceanographic Data and Information Exchange
MIO	Marine Information Overlays
MOWCA	Maritime Organization of Western and Central Africa
MSI	Maritime Safety Information
NG	Nigeria
NNHO	Nigerian Navy Hydrographic Office
ODINAFRICA	Ocean Data and Information Network for Africa
PMAWCA	Port Management Association of West and Central Africa
PT	Portugal

RA	Rear Admiral (Contre-Amiral)
RHC	Regional Hydrographic Commission
RMU	Regional Maritime University, Accra (Ghana)
SDB	Satellite derived bathymetry
SHOM	Service Hydrographique et Océanographique de la Marine (FR)
SN	Senegal
SOLAS	Safety Of Life At Sea
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
US	United States of America

Date and place

The Conference took place at the Naval Club in San Fernando (Cádiz, Spain) during the days 18th to 20th October 2016 and was hosted by Instituto Hidrográfico de la Marina (IHM), the Spanish hydrographic office. Due to the absence of the Director of the Department of Surveying, Oceanography and Charting of the Royal Navy of Morocco (DHOC), the Conference was chaired by Commander Hassan Ouahid, Head of the Hydrographic Section of DHOC. The IHO was represented by Director Gilles Bessero and Assistant Director Yves Guillam

1. Opening session

The conference was opened, after a brief introduction given by the Chairman, by Rear Admiral Ricardo Atanasio Hernández López, Chief of the Staff of the Spanish Fleet, who welcomed all the participants and highlighted the importance of the Hydrography for ensuring the safety of navigation and supporting the national security and maritime defense. Also, Admiral Hernández stressed the significance of this Commission as the drive for cartographic coordination in the Region.

After these introductory words and speeches given by the Chairman and IHB Director Bessero, there was a coffee break and the group moved to the lobby to take the picture of the meeting.

1.1. Designation of vice chair and acceptance of the agenda

The chairman proposed Captain Juan Aguilar to act as the vice chair of the meeting, proposal that was accepted.

Then SHOM proposed to add an item to the agenda, to talk about the safety of navigation in the Africa region. This was also accepted as well as the rest of the agenda.

1.2. Chairman report

The Chairman gave an overview of the main goals achieved since the last meeting, as well as the meeting attended by different Member States (HSSC 6 & 7, IRCC 7 & 8 and WEND 5 & 6), acting as representatives of EAtHC, noting that their reports would be presented later during this meeting. The main points of his presentation were:

- Liberia has expressed its intention to become an associate member of EAtHC.
- The Chairman talked about the upcoming new IHO and the consequent new organization, and stressed the steps that this Commission would have to take in the near future.

- Also noted the presence of France as the representative of EAtHC in the Working Group of the IHO-EU Network, and that on 15 July 2016, the IHO signed a Memorandum of Understanding with the West and Central African Maritime Organization (MOWCA).

- Then gave an exposition of the IHO indicators noting that those rates should not hide the fact that the hydrographic data from which the ENC's of the region were compiled might be old and incomplete on African coasts.

- He subsequently cited the countries whose effectiveness of the coastal state's promulgation of navigational warnings, dangers and aids to navigation, and the provision of hydrographic services had been audited in 2016 and those that were expected to be audited in 2017

- The presentation ended covering topics about CB (especially the HydroMAOC project, Internet course "e-learning"; High level visits and techniques) and, again, stressing the important events about the representatives of the Commission to the IHO Council, the participation in the 1st Assembly in Monaco in April 2017 and the IHO membership (associate members and observers).

1.3. List of actions from the last meeting

An update of the Action list from the last Conference was given. Here they are summarized:

- EAtHC 3-1, 2, 3, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20: are to be considered as Permanent
- EAtHC13-4, 5, 6, 32 (to be held during this meeting), 35, 36: To close
- EAtHC13-15, 21, 23, 25, 27, 29, 31, 33: have been already Done
- EAtHC13-22, 30: are still in progress
- EAtHC13-24, 26, 28, 34: No action has been taken

1.4. Bureau report

IHB Director Bessero gave an extensive presentation in which he described in detail the steps that are going to take place within the IHO in the coming dates, once the new organization comes into force. He talked about the changes in the governance, the new and simplified way to become a new member and the main dates.

After that he spoke about the state of the IHO SIG, Country Information Database, ENC catalogue and C-55 developments particularized in the countries of this Commission.

Then he went to enumerate the different stages of the programs of CB and Crowded source bathymetry.

In the IHO outreach Director Bessero emphasized the cooperation with regional organizations as the Protocole d'accord OHI-OMAO and the Memorandum of Understanding IHO-MOWCA, highlighting the impact on the relations of the IHO with MOWCA's specialized organs.

To conclude he encouraged the Member States to review entries related to IHO Publications, catalogues and databases at least annually, to report to the IHO Secretariat on the status and description of the ENC schemes in the Region, to consider ways and means to consolidate the liaison between national MSI Coordinators and the NAVAREA II Coordinator, to invest in the preparation of candidates for Master of Science Programme in Hydrographic Surveying at the University of Southern Mississippi, and to consider appropriate arrangements to prepare the 1st IHO Assembly.

2. States reports

2.1. France report

France's report was focused on the normal topics, i.e., achieved surveys (both, the French Atlantic and the EAtHC areas for which SHOM is responsible), the INT and ENC production status and MSDI.

France highlighted the role played by LIDAR surveys in the acquisition of new data, and that these data could be comparable with data acquired for S-44 1B order.

Finally France presented two project in which they are involved: HOMONIM, an extension of real time se level observation capacities used for the production of a range of multi-scale DTM that will improve the sea state and surge modeling, and the COASTVAR project, whose goal is to understand the dynamics of tropical coastal systems, focusing on extreme events and their long-term effects.

2.2. Morocco report

Morocco's report was also driven mainly by the normal outline, a presentation of the equipment available at their Hydrographic Service used for the surveys, the studies being carried out.

It was announced that hydro-oceanographic vessel is under construction in France, and is expected to be commissioned in 2019, as well as a rigid hull inflatable boat, whose delivery is planned for a very near future.

The new editions of nautical charts and other publications, the oceanographic activities and the updating of the IHO c-55 were also presented.

Morocco gave an extensive part of the presentation talking about the CB and all the courses that their personnel are attending in countries as Italy, France, Spain and the UK. Finally he listed all the conferences and meetings attended by their personnel since the last EAtHC meeting.

2.3. Nigeria report

Nigeria's report started listing the Organizations involved in hydrography in the country and then showing an organization chart of the NNHO.

The second part of the report was focused on the coverage of new surveys, most of which have been conducted by NNHO, like routine surveys and maintenance dredging of the Lagos and Bonny Channels. Then highlighted that a total of 88 critical wrecks were removed from both Channels during the period under review. Furthermore, the NNHO surveyed parts of Apapa harbour up to Break Waters as well as other minor surveys for naval operations.

It was announced that a new MSI portal is currently under development, established in NIMASA (Nigerian Maritime Administration and Safety Agency)

Talking about CB, Nigeria listed the students that are currently doing their training in different countries, as well as those who have finished since the last meeting.

In the local training Nigeria announced that the NN had initiated efforts to commence a Pre Basic Hydrographic Course at the NNHS, which is intended to serve as a precursor to an IHO accredited Cat "B" Hydrographic Course.

To conclude the presentation it was stressed that despite the progress made so far, the NNHO still lacks nautical cartographers, oceanographers and database managers.

2.4. Portugal report

Portuguese presentation started with an overview of the main surveys carried out since the last meeting. These included Continental Portugal (rivers included) and Azores Archipelago, as well as surveys for the project related to the proposal of extension of the Portuguese continental shelf.

Portuguese representative stressed the collaborations with other countries like Republic of Cape Verde and Democratic Republic of São Tomé and Príncipe. Those collaborations ended up with the publication of new editions of nautical charts and ENC.

In terms of CB, IHPT announced that had contacts with the Angolan Hydrographic Office related to the future collaboration between IHPT and IHSMA that might include formation in hydrography and cartography.

Finally IHPT said that they had been performing studies in SDB in order to evaluate the amount of changes since the last survey.

2.5. Spain report

In their report Spain gave an overview of the main surveys carried out during this period between EAtHC meetings, stressing those in the Guadiana and Miño rivers estuarine, both in collaboration with IHPT.

The next point of the presentation was focused on the acquisition of new equipment (two latest technology hull mounted echo sounders, two portable phase differencing bathymetric sonar system and one side scan sonar) and the implementation of new technologies (the use of GPS RTK for surveying).

Then a list of new paper nautical charts, ENCs, updates of the INT catalogue and nautical publications was shown, emphasizing the lack of new data for the western African coast charts which are Spain responsibility.

To end the report, Spanish representative gave a list of the foreign students that have received training in Hydrography and Nautical Cartography since the last EAtHC meeting, especially stressing the students from countries of the region.

2.6. Ivory Coast report

In the report, the Côte d'Ivoire representative said that the practice of hydrography in this country is provided by the autonomous ports. It was stressed that almost all inland waters are not covered by surveys. Hence the immense need for hydrography and now the authorities are starting to become aware of it, so initiatives are under way to establish at least one National Hydrographic Commission.

The country hosted a mission on April 2015 to assess the security needs of navigation, conducted by IALA, as well as the mandatory IMO audit on Hydrographic Capabilities. Compliance of aids to navigation was confirmed by this visit technical.

Ivory Coast emphasized that, as in most southern countries, the first challenge is the lack of training. Currently the country does not have a training or recycling structure in hydrography, so is done outside. So for Ivory Coast the training carried out by the Regional Academy of Marine

Science and Technology (ARSTM) of Abidjan, is viewed as an opportunity for them and all African countries to host degree programs more often or in a permanent way.

2.7. Guinea Conakry report

In their report Guinea informed that, although there is no a National Hydrographic Service, the Hydrographic Service of the Autonomous port of Conakry assumes all the responsibilities for the safeguarding of the safety of the navigation in the Port and in the surroundings.

Since the last conference the Service has carried out two bathymetric surveys of the access channel and the port basin for the certificate of completion of the maintenance dredging works for the restoration of the dimensions required for the exploration of the port and the control of the sedimentation. The first of these surveys was reported to the NAVAREA II for the inclusion in the nautical cartography

No new equipment has been acquired, however the project of supply of High Visibility Poly Ethylene buoys by the French company GISMAN has been realized, and has been reported to NAVAREA II.

The need for training is still one of the main objectives. In this sense it was noted that two managers of the Harbor Master's Office benefited from training on Maritime Safety in Accra under the aegis of EAtHC, and the Chief of the Hydrographic Service received from ARSTM of Abidjan an RSM course organized by the IHO.

2.8. Senegal report

The Senegalese report started with an explanation of the Maritime Security Service of Senegal, which nowadays merges with the Subdivision of Lighthouses and Beacons, and it is an establishment under the Ministry of Fisheries and Maritime Affairs whose management is entrusted to the Director General of the National Society of the Port Autonome de Dakar.

The main surveys carried out since the last CHAtO meeting were for the verification of the dredging coast of the mouth of the Casamance and Saloum rivers, hydrographic on the river Senegal and in the Inland harbour of Dakar.

The next part was a list of the equipment to be acquired in the near future in order to improve the quality of the surveys.

In terms of CB, it was stressed the close collaboration between France and Senegal, based on a bilateral agreement that allows SHOM to access relevant hydrographic data for the

maintenance and updating of nautical documents when surveys are carried out in the waters under Senegalese courts, particularly in its exclusive economic zone.

2.9. UK report

UK started talking about the chart and ENC production, as well as their hydrographic activity and the Publications that affect this area of the World. And then continued with a list of 17 new Port Approach Guides (PAGs) that have been produced for the East Atlantic region.

UK representative stressed the importance of the deployment of RFA Argus that joint the fight against the Ebola crisis.

In terms of CB, the UK listed the meetings attended by them since the last EAtHC, emphasizing the visit to Liberia in 2016 and the visit to Ghana in support of the EAtHC's Hydro Maritime West and Central Africa Project.

3. Other Conferences, Organizations and Industry reports

3.1. IRCC7 & 8 reports.

A joint presentation of both meetings was shown, highlighting the most relevant aspects of these two Conferences.

IRCC7 had taken place in Mexico in 2015 and the main topics discussed were the creation of the Crowded Source Bathymetry WG (CSBWG) and four new WWGG inside the HSSC (S-100WG, ENCWG, NIPWG and TECWG). Another interesting topic was the inclusion of the satellite bathymetry theme as a standing item on the agenda in all future IRCC meetings.

IRCC8 took place in Abu Dhabi in 2016, and the point that most could affect the CHAtO were the approval of the continuation of the WG on the global ENC database, the Marine Spatial Data Infrastructure WG and the IHO-EU Network WG, under their current mandates and proposed work plans; also the approval of the continuation of the Participatory Bathymetry WG, and the approval of S-5A Publication 1.0.0 (Competency Standards for Hydrographic Category "A").

3.2. WENDWG report

France, acting as EAtHC representative to WENDWG, was in charge of this presentation, and started the report listing the main issues faced by this WG, especially the overlapping ENC, the harmonization of RENC, and the implementation of the principles WEND and MIO.

The actions requested to CHAtO are to review WENDWG Membership and instruct the EAHC representative prior to WENDWG-7, the INT Chart / ENC Coordinator for Region G to define an ENC Scheme for UB1, UB2, UB3, in liaison with INT Charts and ENCs Producers and to report to the WENDWG Chair on ENC coverage issues vs. maritime shipping routes.

3.3. IHO-EU Network report

This report was also presented by France, who started the presentation speaking about the MoU between EU and the IHO signed in 2012, and whose main objectives and works are to investigate common interest for high resolution coastal mapping and to harmonize policy of the different HO on the participation of EMODNet.

He talked about the other main project, which is Coastal Mapping Project. The purpose of this is to develop a seamless topography of the littoral under an interoperable portal and data centre, and able to address discontinuities and the best survey strategy. The next Coastal Mapping milestone would be the propositions for an EU-wide coastal data acquisition program under the sponsorship of the EU

3.4. HSSC report

IHO Director Bessero was the one to present this report in which he summarized the main topics covered in the last two meetings that took place since the last CHAtO Conference (HSSC6 in Chile in 2014 and HSC7 in Republic of Korea in 2015)

He gave an overview of the new HSSC structure adopted in 2014, and talked about the main work items, that are to develop de S-100 series of new standards and to keep the current IHO standards fit to purpose.

He listed some matters about ECDIS and S-100 (production of a coherent set of revised editions of the key ECDIS, the requirement to revisit the ECDIS check dataset for ships, and the development of S-100 interoperability specification for ECDIS among others)

He also mentioned as a priority the preparation of the IHO Assembly A-1 through the Chair group, and stressed the need to establish a Hydrography Surveys WG.

In the relations with stakeholders, he said that there was a strategic issue (as several WG rely on expertise from industry) and that there is an establishment of relations with the International Cable Protection Committee.

Finally Director Bessero encouraged this Commission to support HSSC activities in which we are not involved yet.

3.5. RENCs presentations

PRIMAR an IC-ENC gave both presentations to talk about their activities in the cooperation, technical support and services to work with HOs to produce quality control and derived harmonized ENC.

PRIMAR talked about their validation times (10 minutes for an update, 10-20 for a new edition and 2 hours for a new ENC), then shown an slide with the distribution process and another one with the value chain

In terms of CB PRIMAR had delivered 6 training courses in ENC production support, delivery, validation and quality control

Currently PRIMAR is involved in the S-102 project in order to expand their services but also to protect this service with the new edition of IHO S-63 for access control and authentication.

IC-ENC, on the other hand, encouraged us to forget the ENC and think WEND. IC-ENC representative showed a map with all the ENC that cover the EAtHC region and who their producers are. He said that both RENCs are in place to assist the different HOs with achieving the quality of the ENC, the consistency across the WEND as well as to assure the availability (including maintenance)

The second part of IC-ENC presentation was focused on showing how they are spread around the World, and the amount of ENC that they validate and distribute.

IC-ENC delivered 7 international validation courses and hosts an annual Technical Conference which is attended by all their member representatives.

Finally he showed the four core services provided by IC-ENC (production support, validation, distribution and revenue management and financial reporting), and encouraged once more to think WEND

3.6. GEBCO report

GEBCO's report was presented by Spanish Navy Lt. Cdr. Gómez-Pimpollo Grespo. He started with a brief historical review of the origins of this organization, since 1903. Then, he talked about who leads this organization, the different committees and working groups GEBCO has and the final goal of this organization.

The representative also gave an overview of the Sub Committee on Undersea feature names, whose work is to maintain and update the features on the seafloor with names. He indicated that there is an average of 50 new features proposed every year.

A series of regional maps were also shown (indicating all projects and organizations taking part in them) and the representative also highlighted the importance of more organizations and hydrographic offices join and work together in these projects to map all seafloor, final goal of this organization.

Finally, he mentioned the great effort the Nippon Foundation, from Japan, is conducting in this organization, sending hydrographers and young scientists involved with ocean mapping at the University of New Hampshire (USA), specifically at CCOM (Center for Coastal and Ocean Mapping) to study one year to work together and join efforts to improve GEBCO maps, during and after that year, from their organizations.

3.7. IALA report

IALA's presentation started saying that although it is a non-governmental organization their decisions are recognized international rules. Their objectives are to ensure that aids to navigation systems and associated services are harmonized through international cooperation and the production of standards all coastal states contribute to the establishment of an efficient global system aids to navigation and associated services for the safety of navigation, through capacity building and experience sharing.

IALA's representative then talked about the organization (84 member states, 50 associates and 110 industries, as well as 45 honorary members), and the governance which is based on a General Assembly, one Council and several working groups.

Their activity since the last EAtHC meeting has focused on the Evolution of the structure of Technical Commissions, the 18th Conference in Spain in 2014, the approval of the new status by the general Assembly, the strengthening the cooperation with IMO and IHO: "United in Action" and the election of a new Secretary General in 2015.

"IALA considers the transmission of knowledge and experience an essential aspect of its action hence the creation of IALA World-Wide Academy officially was introduced at the XVII Conference in Africa South in 2010, being the objective of the Academy to group all the training activities implemented by IALA."

In this aspect, IALA's representative pointed out that more than the 80% of this Academy activities is focused on CB. This Eastern Atlantic region is particularly one of the main target for the CB of the IALA.

Then he listed the main points of the strategy of CB, called the 4A (in French): Improving the knowledge, Audit and needs assessment, Requirements analysis and Actions to implement. After that, some tables showing these activities in the different African countries were shown

“Another main topic covered was the audit system by IMO. In this sense IALA’s representative emphasized that States can thus request the IMO to verify their conformity with statutory instruments such as Rules 12 and 13 of Chapter V of SOLAS. The audit system became mandatory from 1 January 2016 and National authorities would therefore be audited following the calendar defined by the IMO from 2016.

Finally he stressed the importance of the Nautical Information and how this is taken to the users through the established channels. So he encouraged the organizations concerned to invest in the collection, transmission and dissemination of this information.

3.8. ICG/NEATWS presentation

This report was presented by Dr. Anna von Gyldenfeldt, vice-chair of the group, and started with a brief introduction about when and why it was formed. It is an organisation that works under the IOC-UNESCO mandate.

She shown a list of the countries that take part in this group, composed by 39 member States and 8 observers.

They work with a Steering Group and four Working Groups (Hazard Assessment and Modelling, Seismic and Geophysical Measurements, Sea Level Data Collection and Exchange and Public Awareness Preparedness and Mitigation).

She shown a regional map in which the tsunamis national contact, warning focal point, warning centre and service provider were located, and then explained the responsibilities of these elements. Maps with the seismic network and another with the sea-level stations were also shown.

She gave a list with the most important exercises carried out during this period, like the tsunami exercise in Israel in 2016, an Evacuation exercise in Greece in 2016, and a "Talking to neighbours" in Italy also in 2016, all of them to spread the knowledge about this tsunamis and how the people should act in these cases.

Finally she explained the challenges that they still have to face, including the cooperation with national and international organizations, the education and training and the awareness and CB.

3.9. CARIS presentation

Due to some sudden family issues of the CARIS representative, this had to be changed and shortened. CARIS presentation was focused in two products.

The first which is used for the management, compilation and storage of bathymetric data, the powerful tool called CARIS BathyData Base (BDB) which is now being used by many HO as the main part of their production of nautical cartography.

The second tool presented was the software CARIS on-board, that will enable users to process data in near real-time to minimize data conversion and processing times. So it is an automated service that monitors the raw data files during the survey and automatically processes them using the workflows predefined.

3.10. Region G chart scheme

This presentation, which was presented by France, compiled the Status of both the INT and the ENC schemes.

The presentation started with a change of format of this Region G catalogue, which is now available through the INTtoGIS portal, and a table in which the total INT charts (produced and planned) compared between the last meeting and the current was shown.

Then some proposals was presented to cover Kribi, Nouadhibou, Porte Grande and Ilha do Principe by French and Portuguese nautical charts.

To end with the INT part of the presentation, the IRCC recommendations were listed. These included that the INT producers should provide the new editions and publications to the regional coordinator 3 months previous to every RHC meeting, that the Coordinators should manage the review of these charts, that those charts could be transferred to the IHB for reference collection and internal use, and when gaps are identified, the IHB should request the producer to provide existing INT charts to the Bureau directly.

The second part of the presentation covered the ENC catalogue, and mainly two overlaps were shown, as well as scattered UB3 coverage, focused on access to main harbours, lack of UB3 coverage on Cabo Verde and a missing cell on Guinea Bissau.

Finally 8 actions were requested to EAtHC, that will be listed and appear later in this report.

3.11. NAVAREA II report

The NAVAREA II report was presented by the Coordinator, France, and first referred to the main objectives: coastal State to ensure safety of navigation in its coastal waters, broadcast of coastal warning by NAVTEX if not by SAFETYNET and the local warnings to be broadcasted by VHF.

As a guidance document, the Coordinator stressed the need for knowing and applying the manual Maritime Safety Information which is in force since January 1st 2016.

He listed the warning broadcast in 2015 (462) and the up to now in 2016 (260), comparing them with the ones broadcasted in 2014 (433).

The Coordinator emphasized the need to transmit the urgent safety-related nautical information to the NAVAREA II coordinator and NOT to the charting authority, and to clarify that point he gave the coordinator details (coord.navarea2@shom.fr, Phone: +33 2 56 31 24 24 and Fax:+33 2 56 31 25 84)

He also encouraged the Commission to communicate immediately any change concerning the national contacts in charge of the nautical information.

Then a list of national contacts was shown, as well as the 9 NAVTEX stations and their coverage.

Finally, a list of 5 actions were requested to EAtHC, that also will appear in the corresponding paragraph or annex later in this report.

3.12. CB report

The CB coordinator, France, was in charge of this presentation that started with the current challenges faced by this Commission, like the urgent need for increasing the hydrographic capabilities, to improve the maritime geospatial knowledge, to improve the access to training and especially to put in practice that training.

The main activities carried out during this period have been a MSI workshop organized by SHOM with the support of IHB and ARSTM, and a technical visit to Liberia in 2016 by team composed by IHB and UKHO people.

An experimentation on MSI e-learning was presented including the necessary steps, i.e. to develop e-learning materials based on regular maritime safety information academic course and provide experimental tutored e-learning session. The first version is planned to be delivered at the end of 2016 and the tutored session should be set up in early 2017 with voluntary trainees.

Then the Coordinator showed a work plan for 2017-2020 that included technical visit to Gambia, MSI e-learning among others, and a table showing the CB self assessment.

Finally the coordinator requested two actions that will be included in the list at the end of this report.

3.13. HYDROMAOC report

France, acting as the CB Coordinator, presented this report in which, as a background accorded in 2014 during the CBSC12, there should be defined to conduct and implement a set of actions to develop hydrography in West and Central Africa.

As a general approach three steps were indentified: analysis, hydro capability definition and implementation process.

In the analysis phase, all the trainings have been considered as well as the technical visits, especially for French and Portuguese speaking countries.

In the definition phase all these terms should be included, initial surveying, the cartography production, the MSDI and finally the structure which is the most important pillar and involves the previous tasks.

The implementation tasks involves everything, i.e. e-learning, roving courses, local courses, web portals, survey equipment, chart production equipment, everything with their corresponding procedures in all the steps.

In the risk analysis there is a rough estimation of costs between 10 and 15 millions of Euros, that will include the education, the equipment and the empowerment (understood as the implementation of a regional survey plan).

The fundraising is intended to be through international and regional funders, National funders and Corporate and private funders. This all should be connected with hydrographic related projects like the Blue Economy, Maritime Safety....

Finally the Coordinator showed the next challenges to face, to promote the concept of a CB project to a high political level, to improve the consideration of maritime challenges in the funders, to support the technologies of information and communication and to harmonize all African RCHs CB programs.

3.14. Kongsberg report

Kongsberg presentation was focused on the products offered by the subdivision SUBSEA which is a part of the Kongsberg Maritime division inside the company. Kongsberg representative gave and extended overview of the range of multibeam echo sounders manufactured by them, as well as the elements used for environmental monitoring. Then presented the capabilities and the key features of the "new products" such as the EM712 that has an improved performance, the EM2040P (in this case P stands for portable) which is recommended to be used along with the motion sensor unit called SEAPATH 134.

A good part of the presentation was focused on the benefits of the Water column data, that can be used to gain an extra detection of the submarine features as a part of the normal bottom detection.

Finally he gave an overview of the HISAS 1032/2040, the high resolution Interferometric Synthetic Aperture Sonar highlighting the importance of a good resolution when images and bathymetric data are combined.

3.15. Interferometric report

This report was presented by Spanish IHM as a result of the Action EAtHC 13-32: *To provide EAtHC and IHB with the results of its studies on interferometric echosounder performances.*

Spanish representative started with a brief definition of the interferometric principles comparing them to the MBES ones. Then shown some images of the interferometric sonars owned by IHM as well as the ships or boats where they are installed temporarily, as these equipment are considered as portable devices and are mainly used in far deployed areas or in the inner harbours where a big boat has her manoeuvrability restricted.

The high performance of the GEOSwath was highlighted, especially when used in shallow waters, in comparison to a MBES, as it covers eight times the water depth, as well as acquires geo referenced side scan sonar data.

The cons that were presented were the lack of data within the nadir, so a high overlap between adjacent lines is needed, and also sophisticated filters are required during both the acquisition and processing phases. The main con noted was the slow workflow, as it takes a lot of time to process the data, although the new versions of the acquisition software are improving this issue and being more compatible with the processing software used at the IHM.

Finally some images of the surveys carried out with these equipment were shown so the attendees could have a better idea of the performance of the interferometric tools.

3.16. Extraordinaire maritime safety Togo

This topic was covered by France as they had proposed at the start of the Conference. French representative started talking about African Union and the production of an integrated strategy for safety in navigation.

It is important to know the importance of these developments. A meeting was preceded by seminars with experts from several African countries and others. They were SHOM and IHB to talk about CB as experts. The biggest problem was directed towards maritime safety and that there are strong links between them. This maritime security is a fundamental pillar for the African blue economy. Fight against illegal fishing and illegal trafficking that is linked to the protection of coast and coastal populations. Once these problems were discussed, things that

interested CHAtO were discussed, such as the means to increase safety in navigation in this area, and the exchange and transmission of information. Put together the services and capacities to share the courses and trainings, as well as the programs used. And the role of hydrography in safety in navigation was highlighted. Thanks to the participation of an representative from Togo who presented different aspects.

Finally France finished saying that they were able during that seminar to give the proper importance to the maritime security and safety and that a document will be signed by many countries prior to the creation of a committee led by Togo.

4. Final business

4.1. Action List

After the last report came the reading of the Action list proposed during this Conference. The complete list is attached at the end of this document.

4.2. Date and venue of the next Conference

Nigeria presented their candidature to host the next EAtHC meeting to be held in 2018. This was approved unanimously. The city, venue and exact dates will be given promptly

4.3. Closing remarks and transfer of chair.

The President addresses everyone to close the EAtHC Conference saying that it had been an honor to be the president for these two-year period- He thanked everyone you for attending and hoping that the challenges of the region have been met. He stressed the importance of the decisions made, thanks to everyone's work. Also thanked the directors of the IHB and the director of the IHM. And he would like to thank the Spanish Navy again for the excellent organization. Finally said that we have to look to the future and implement the future tasks in a more general perspective

Then the Chairman then invited Captain Juan Antonio Aguilar Cavanillas from Spain to take over as the new Chairman. Invitation that was accepted.

Then Capt. Cavanillas addressed the attendees to thank the former Chairman for the excellent work, thanked all the Member States present for the effort carried out in coming to Cádiz, and thanked the IHB for their presence also.

After that Capt. Aguilar declared the conference closed.

**14th EAthC-CHAto CONFERENCE
CADIZ, SPAIN 18-20 October 2016**

LIST OF ACTIONS - RELEVÉ DES ACTIONS

ACTION EAthC 14-01 :

Representatives of the EAthC Observers' coastal States are requested to contact their national authorities to encourage the signing of the EAthC Statutes.

Les représentants des pays ayant le statut d'observateur au sein de la CHAtO sont priés de contacter leur autorité nationale respective afin de les inciter à ratifier les statuts de la commission.

→ **Permanent** - EAthC Observer Coastal States

Pays observateurs de la CHAtO.

ACTION EAthC 14-02:

Coastal States to report **regularly** to IHO SECRETARIAT all information relevant for updating the status of hydrographic services and capabilities, including the provision of the list of POCs for the IHO Yearbook.

IHO Yearbook to be updated by EAthC and IHO SECRETARIAT once a year. IHO SECRETARIAT to add the date of the update for every Coastal State. No changes need to be reported as well.

Les pays côtiers sont priés de diffuser vers le IHO SECRETARIAT, et ce de façon régulière, les informations afférentes à leurs institutions hydrographiques (organisation, capacités, etc), ce qui inclut la fourniture de points de contacts actualisés pour alimenter l'annuaire de l'OHI.

L'annuaire OHI sera mis à jour annuellement par la CHAtO et le IHO SECRETARIAT, et la date de dernière mise à jour par l'Etat concerné y sera désormais précisée. L'absence de modification des informations depuis la précédente mise à jour devra également être signalée.

→ **Permanent** - Coastal States, EAthC and IHO SECRETARIAT

États côtiers, CHAtO et IHO SECRETARIAT

ACTION EAthC 14-03:

Coastal States, to review entries related to IHO C-55, P-5 (yearbook) and ECDIS backup arrangements at least annually.

Les Etats côtiers sont priés de revoir les éléments des publications C-55, P-5 (annuaire) et les dispositions de secours ECDIS les concernant annuellement.

→ **Permanent** – Coastal States - *Etats côtiers.*

ACTION EAthC 14-04:

Continue to engage suspended Member States in the region to encourage their re-insertion in IHO.

Continuer à soutenir les Etats membres de la région faisant l'objet d'une suspension en vue de motiver leur réinsertion au sein de l'OHI.

→ **Permanent** - EAthC Chair, in liaison with Democratic Republic of Congo.

Président CHAtO, en liaison avec la République Démocratique du Congo.

ACTION EAtHC 14-05:

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

Au coordinateur NAVAREA II de contrôler périodiquement les coordonnées des correspondants RSM nationaux (au moins tous les 3 mois).

→ **Permanent** - France

ACTION EAtHC 14-06:

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,

Au coordinateur NAVAREA II de rédiger un courrier officiel aux correspondants RSM nationaux leur demandant que les opérateurs de plateformes pétrolières fournissent aux correspondant RSM:

- *les positions actualisées des plateformes et leurs prévisions de mouvements,*
- *Les coordonnées des points de contacts pour les questions relatives aux futurs mouvements.*

→ **End of 2016** - France

ACTION EAtHC 14-07:

To identify all NAVTEX projects POCs, and respond to the questions raised by IMO NAVTEX Panel in cooperation with the NAVAREA II co-ordinator.

Identifier tous les correspondants des projets NAVTEX, et instruire les questions posées par le « NAVTEX Panel » de l'OMI en coopération avec le coordinateur NAVAREA II.

→ **Permanent** - All concerned Coastal States in cooperation with NAVAREA II Coordinator.

Tous Etats côtiers concernés en coopération avec le coordinateur NAVAREA II.

ACTION EAtHC 14-08:

To provide IHO SECRETARIAT and EAtHC Chair with official documents related to national hydrographic committees, national hydrographic coordination committees and general procedures, to be considered for inclusion in C-16.

Communiquer au IHO SECRETARIAT et au Président de la CHAtO, les textes portant sur l'organisation et le fonctionnement des comités hydrographiques nationaux, comités de coordination hydrographiques nationaux et procédures générales susceptibles d'être insérés dans la publication C-16.

→ **Permanent** – non IHO members Coastal States - *Etats côtiers non membres de l'OHI.*

ACTION EAtHC 14-09:

To review the procedures for the transmission of survey data, in order to make sure that all relevant national organisations can access the survey data covering their national waters.

Revoir les procédures de transmission des données de sondage, afin de confirmer que l'ensemble des organismes nationaux concernés accèdent aux levés réalisés dans leurs eaux.

→ **Permanent** – All costal States – *Tous les Etats côtiers*

ACTION EAtHC 14-10:

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.

Aux États côtiers de rendre obligatoire la fourniture des résultats des levés à l'autorité cartographique dans le cas de contrats passés avec des tiers (autres SH, sociétés privées), pour permettre la tenue à jour, sans délais, des documents nautiques.

→ **Permanent** – All Coastal States – *Tous les États côtiers.*

ACTION EAtHC 14-11:

INT & ENC Chart producers to check the consistency of the existing set of ENC with NOAA's list of cruise ship port coverage gaps and NGA's list of non-covered ports. To provide the regional charting coordinator with a set of proposals to complete large scales ENC schemes.

Aux producteurs de cartes INT & ENC de comparer la pertinence de la couverture ENC actuelle avec la liste des manques de couverture ENC sur les ports fréquentés par les bâtiments de croisière établie par la NOAA et la liste des ports non couverts par des ENC grande échelle établie par la NGA et de soumettre au coordinateur cartographique régional des propositions visant à compléter les schémas ENC grande échelle.

→ **Permanent** – INT & ENC Chart producers in liaison with Coastal States

Producteurs de cartes INT&ENC en liaison avec les États côtiers.

ACTION EAtHC 14-12:

INT chart producers to provide Region G charting coordinator with a copy of their new INT charts (new publications and editions) in accordance with IRCC7 Decision 3.

Aux producteurs cartographiques de fournir au Coordinateur cartographique régional un exemplaire de leur nouvelles cartes INT conformément à la décision 3 de l'IRCC7.

→ **Permanent** - Chart Producer Nations – *Pays producteur de cartes*

ACTION EAtHC 14-13:

INT Chart Coordinators/ICCWGs to manage the review of the newly adopted INT charts and to check their compliance with IHO standards and report at every forthcoming RHCs meeting.

Au coordinateur cartographique régional de piloter la révision les nouvelles cartes INT afin de contrôler leur conformité aux normes de l'OHI et de rendre compte à la conférence de la commission hydrographique régionale à venir.

→ **Permanent** - France

ACTION EAthC 14-14:

These 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.).

Transmettre, avec l'accord des producteurs de cartes INT, les cartes INT nouvellement adoptées au IHO SECRETARIAT pour compléter leur collection de référence à usage interne (validation de base de données, consultation, etc).

→ **Permanent** – France

ACTION EAthC 14-15:

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.

Aux États côtiers de fournir au coordinateur cartographique régional un exemplaire papier, numérique ou un accès en ligne à leur catalogue national.

→ **Permanent** - Chart Producer Nations – *Pays producteur de cartes*

ACTION EAthC 14-16:

Chart producers to update INT chart details (limits, scale, format) using INTOGIS 'web manager' interface.

Aux États côtiers de mettre à jour les informations relatives aux cartes INT (emprise, échelle, format) via l'interface « web manager » du portail INTOGIS.

→ **Permanent** - Chart Producer Nations – *Pays producteur de cartes*

ACTION EAthC 14-17:

Regional Charting Coordinator to submit the new INT proposals to the approval of the region G ICCWG.

Au Coordinateur cartographique régional de soumettre les dernières propositions d'inclusion de cartes INT à l'approbation du groupe de coordination cartographique régional (ICCWG) de la région G.

→ **End of 2016** – Regional Charting Coordinator – *Coordinateur cartographique régional*

ACTION EAthC 14-18:

Regional G ICCWG to validate ENC schemes for UB1/2/3 and report back to the IHO SECRETARIAT

Au groupe de coordination cartographique régional de valider les couvertures ENC des bandes d'usage 1/2/3 et de rendre compte au IHO SECRETARIAT.

→ **Permanent** – Regional Charting Coordinator – *Coordinateur cartographique régional*

ACTION EAthC 14-19:

To encourage Coastal States to formalize the fulfilment of their SOLAS obligations by making official agreements with their Primary Charting Authority, in accordance with the chapter V of the SOLAS Convention.

Encourager les États côtiers à formaliser la tenue de leurs obligations SOLAS par un arrangement officiel avec leur autorité cartographique, en application du chapitre V de la convention SOLAS.

→ **Permanent** - Concerned Coastal States – *Etats côtiers concernés.*

ACTION EAthC 14-20:

To consult the IHO website (www.iho.int) on a regular basis to keep abreast of IHO activities, e.g. all relevant Capacity Building letters and documents.

Consulter régulièrement le site Internet de l'OHI, (www.iho.int) afin de se tenir au courant des activités de l'OHI, par ex. les correspondances et la documentation relatives au renforcement des capacités.

→ **Permanent** - Concerned Coastal States – *Etats côtiers concernés.*

ACTION EAthC 14-21:

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

Deadlines: March 1st 2017 >> 2018 CBWP

March 1st 2018 >> 2019 CBWP

Les Etats côtiers recherchant l'assistance en matière de renforcement des capacités (y compris pour la préparation des audits de l'OMI) de contacter le coordinateur régional pour le renforcement des capacités avant le 1er mars afin que leur requête puisse être pris en compte lors de l'établissement du programme de travail annuel de l'OHI (CBWP).

Dates limites : 1er Mars 2017 >> CBWP 2018

1er Mars 2018 >> CBWP 2019

→ **2017 and 2018** – All coastal States – *Tous les Etats côtiers*

ACTION EAthC 14-22:

Inform the regional CB Coordinator with the direct CB in-kind contribution for third parties in the region.

Tenir le coordinateur régional CB informé des contributions CB en nature délivrés par des pays tiers dans la région.

→ **Permanent** - Coastal States - *Etats côtiers*

ACTION EAthC 14-23:

In order to develop the assessment of the impact of marine disasters in the region, the members of the commission agreed to:

- identify stakeholders/networks/sectors vulnerable to Marine Disasters issues,
- define a common framework in line with both IHO and IOC mandates,
- adopt a strategy to be used in a IHO-IOC awareness programme;
- organize an IHO-IOC regional workshop on marine disasters.

Afin d'améliorer l'évaluation de l'impact des catastrophes marines et la prise en compte des risques associés, il a été décidé par les membres de la commission de :

- *identifier les parties prenantes/réseaux d'influence/secteurs d'activités concernés/menacés par ce type de risque,*
- *définir un cadre d'action commun en concordance avec les mandats de l'OHI et de la COI,*
- *adopter une stratégie pouvant s'intégrer dans un programme commun OHI-COI de sensibilisation,*
- *organiser un atelier régional OHI-COI sur les catastrophes marines.*

→ **EAthC15**, Nigeria in liaison with IOC

CHAt015, Nigéria en liaison avec la COI.

ACTION EAtHC 14-24 :

To inform the EAtHC about the date and programme of the Maritime signalization conference to be held in Nigeria.

Informer la commission de la date et du programme de la conférence sur la signalisation maritime qui doit se tenir prochainement au Nigéria.

→ **EAtHC15**, Nigeria, in liaison with IALA

CHAto15, Nigéria, en liaison avec l'AIMS

ACTION EAtHC 14-25:

To upgrade national sea level stations identified by NEAMTWS Implementation Plan to real time data delivery and participate in data exchange.

To exchange coastal bathymetry data in accordance with relevant resolution of IOC and IHO Circular letter 36/2006 regarding tsunami and coastal inundation modeling.

Mettre à niveau les stations nationales de mesure de hauteur d'eau identifiées par le plan de mise en œuvre du NEAMTWS pour la transmission des données de hauteur d'eau temps réel et contribuer à l'échange des données de hauteur d'eau.

Echanger des données de bathymétrie côtière conformément à la résolution ad hoc de la COI et à la lettre circulaire 36/2006 de l'OHI sur les tsunamis et la modélisation côtière des inondations.

→ **Permanent** – All Coastal States - *Tous les Etats Côtiers*

ACTION EAtHC 14-26:

To report about the status and perspective of the IBCEA project to the GEBCO Directing Committee through SCRUM.

Rendre compte au Comité Directeur de la GEBCO du statut et des perspectives du projet IBCEA via le SCRUM.

→ **EAtHC15** – EAtHC Chair - *Président de la CHAto*

Action 14-27:

EAtHC Chair to write a letter to EAtHC non-IHO members to explain them the new membership procedure to the IHO and to encourage them to apply.

Au Président d'écrire aux pays non membre de la région pour leur expliquer la nouvelle procédure d'adhésion à l'OHI et les y encourager.

→ **End of 2016** – EAtHC Chair – *Président de la CHAto.*

Action 14-28:

Member States to provide the following information in their national report:

- development status of maritime spatial data infrastructures (MSDI);
- involvement plans in MSDI;
- challenges faced by the coastal State regarding MSDI.

Aux États membres à fournir les informations suivantes dans leur rapport nationaux:

- *l'état de développement des infrastructures de données géospatiales maritimes (IDGM),*
- *plans de participation IDGM,*
- *les défis auxquels est confronté le pays.*

→ **Permanent** - Coastal States - *Etats côtiers*

Action 14-29:

To send a copy of the rules for the selection of EAtHC Member States to the IHO Council to the IHO Secretariat.

Transmettre un exemplaire des règles relatives à la sélection des États membres de la CHAtO au Conseil de l'OHI au Secretariat de l'OHI.

→ **End of 2016** – EAtHC Chair – *Président de la CHAtO.*

Action 14-30:

Prepare a revision of the EAtHC Statutes.

Préparer un projet de révision des Statuts de la CHAtO.

→ **EAtHC15** – EAtHC Chair – *Président de la CHAtO.*

Action 14-31:

To provide the Regional CB coordinator with a dedicated POC regarding IOC's OceanTeacher Global Academy.

Fournir au coordinateur regional CB les coordonnées d'un point de contact ad hoc concernant la « OceanTeacher Global Academy » de la COI.

→ **November 2016** – EAtHC representative of the Intergovernmental oceanographic commission (IOC) – *representant de la commission océanographique intergouvernementale (COI) pour la CHAtO.*

Action 14-32:

To send an official invitation letter to the relevant national authorities of EAtHC coastal States (as referred in the IHO yearbook) and copy for information to other EAtHC national POCs in order to facilitate attendance administrative arrangements at least 3 months prior to the conference.

Adresser une lettre d'invitation officielle aux autorités nationales compétentes des pays côtiers de la CHAtO (tel que précise dans l'annuaire de l'OHI) en mettant en copie pour information les autres points de contacts nationaux de la CHAtO afin de faciliter les démarches administratives de participation au moins 3 mois avant la conférence

→ **Permanent (prior to EAtHC conference)** – EAtHC Chair – *Président de la CHAtO.*

Action 14-33:

To send, on request from the relevant national authority, a nominative official invitation letter in order to facilitate administrative arrangements (visa requests).

Adresser, sur demande de l'autorité nationale compétente, une lettre d'invitation officielle nominative afin de faciliter les démarches administratives (demandes de visa).

→ **Permanent (prior to EAtHC conference)** – Conference host nation – *Pays hôte de la conférence.*

Action 14-34:

To provide the EAtHC Chair with a date and location for the 15th EAtHC conference to be held in 2018.

Communiquer au Président de la CHAtO la date et le lieu pour la 15^{ème} conférence de la CHAtO qui se tiendra en 2018.

→ **30 November 2016**– Nigeria - *Nigéria*