

**Paper for Consideration by  
13<sup>th</sup> EAHC Meeting  
IHO Secretariat Report**

<b>Submitted by:</b>	Secretariat of the IHO
<b>Executive Summary:</b>	This paper reports on activities of the IHO Secretariat that may impact the work of the East Asia Hydrographic Commission (EAHC).

**Operations of the Organization under the IHO Convention since the last EAHC Meeting in October 2015**

1. The amendments to the IHO Convention and its supporting Basic Documents entered into force on 8 November 2016. The most significant changes to the organization of the IHO are:
  - a) the term International Hydrographic Bureau (IHB) used to describe the headquarters and the secretariat of the IHO is replaced by the term IHO Secretariat;
  - b) The Directing Committee, comprising a President and two Directors ceases to lead the IHB (Secretariat of the IHO). Instead, the Secretariat of the IHO is now led by a Secretary-General assisted by two subordinate Directors;
  - c) The term International Hydrographic Conference used to designate the principal organ of the Organization, composed of all Member States, is replaced by the term Assembly. The ordinary sessions of the Assembly will be held every three years instead of every five years for the Conference;
  - d) The subsidiary organs, including the Committees, of the IHO will report to the Council that will then refer endorsed proposals for adoption either to the Assembly or to the Member States through correspondence;
  - e) The planning cycle for the IHO work programme and budget changes from a five-year to a three-year cycle. The current cycle runs from 2018 to 2020.
  - f) For States wishing to join the IHO that are already Member States of the United Nations there is no requirement to seek the approval of existing Member States of the IHO; and
  - g) Where voting is required, decisions will be taken based on a majority of the Member States that cast a vote, rather than the existing arrangements where a majority of all the Member States entitled to vote is required. A minimum number of at least one-third of all Member States eligible to vote must vote positively for a vote to stand.
2. The first IHO Assembly was conducted in April 2017. Dr Mathias Jonas (Germany) was elected as Secretary-General; Abri Kampfer (South Africa) and Mustafa Iptes (Turkey) were elected as Directors. At which time an IHO Council was established.
3. The proceedings of the 1<sup>st</sup> Session of the IHO Assembly were announced in IHO CL 48/2017. The second Session of the IHO Assembly will take place in April 2020.
4. The main outcomes of the 1st meeting of the IHO Council were reported in IHO CL 55/2017. C-1 proposed and Member States approved (ref. CL 15/2018) the continuation of the process of the recommendations made by HSSC and IRCC that was in force before the establishment of the Council until the 2<sup>nd</sup> Session of the Assembly (A-2).

**Work of the IHO with the EAHC**

5. Six of ten EAHC members are also Council members.
6. Each Regional Hydrographic Commission is established in its own right by statutes and recognized by the Assembly (Article 8 of IHO General Regulations). They are sovereign to identify tasks, ways and means to address the specifics of hydrography within their respective region. If such regional hydrographic issues are of operational relevance for the international community they can be forwarded by the respective Regional Commission through the link with IRCC. The chairs of the Regional Hydrographic Commissions are regular

IRCC members. They report to IRCC and in turn report back to the Regional Hydrographic Commission about IRCC issues.

7. With regard to the relationship with the Assembly, Regional Hydrographic Commissions enjoy the right to report to the Assembly directly. However, the applicable IHO Resolution 2/1997 is under review. The Secretariat proposes to discuss how reporting items of relevance shall be synchronized with the Council Chair report to the Assembly which is largely based on the annual IRCC chair report put forward to the Council.

**8. Recommendations, EAHC to consider:**

- a) provide a report about on the outcomes of this meeting to the IRCC Chair for his report to C-2;
- b) discuss how the EAHC reporting to the Assembly shall be synchronized with the Council Chair report to the Assembly.

**Status of Membership of the IHO**

9. One of the main changes resulting from the entry into force of the revised IHO Convention is that, for States wishing to join the IHO that are already Member States of the United Nations, there is no requirement to seek the approval of existing Member States of the IHO. In 2017 **Malta, Vanuatu, Seychelles** and in 2018 **Bulgaria** acceded to the IHO Convention and became the 86<sup>th</sup>, 87<sup>th</sup>, 88<sup>th</sup> and 89<sup>th</sup> Member States of the IHO respectively. On 1 January 2018 the **Dominican Republic** was reinstated as Member State, suspended since 1983. Regrettably, Syria was suspended from Member States' rights being in arrears in its contributions now for two consecutive years.

**INT Chart and ENC Production Coordination - Region K**

10. According to the IHO Secretariat records, Japan (Mr. Kenichi NOGUCHI), is the designated INT Chart / ENC Coordinator for Region K.

11. The status of the INT chart scheme for region K is contained in Edition 3.0.0 of S-11 Part B which was made available in January 2016. According to the S-11 Part B Web Catalogue, there are 294 charts (and/or plans) in the scheme, of which 240 have been published (82%). No updates have been received for more than two years from Region K members. It is not known if it is because **out of 10 EAHC Members in Region K only China, Japan, Malaysia and the Republic of Korea** have requested an ID and password in order to manage the INT chart database or if it is because the current INT chart coverage and database is considered up-to-date and satisfactory. Notwithstanding the introduction and training provided at the IHO workshop in April 2016, it is not clear if the INT Chart Coordinator for Region K is confident in accessing the INT chart web catalogue and associated web services, as few charts look to have been submitted by the ROK to the Coordinator and are displayed as being in process in the system.

10. Early January 2018, the IHO Secretariat informed the Chart Coordinators that the project INTtoGIS Phase II was underway, thanks to the outstanding support provided by KHOA (Republic of Korea). For more information, see Doc. [HSSC9-11A-INF1](#). Since the publication of Ed. 3.1.0 of S-11 Part A, the new INTtoGIS Phase II aims to provide a very useful scheming tool, putting together ENC and INT charts, new base maps and some useful tools for a more efficient and consistent INT chart and ENC scheming (AIS data base, overlap checker, etc.). As agreed at the last WENDWG meeting, some Chart Coordinators are now experimenting INTtoGIS II before it is commissioned and made available to all, hopefully early next year..

11. Adoption of Ed. 3.1.0 of IHO Publication S-11 Part A requires new arrangements for the monitoring of INT charts (CL 11/2018 refers).

12. The representative of the EAHC at the WENDWG (Michael Chau, Hong Kong, China) participated in the 8<sup>th</sup> meeting (March 2018) of the WENDWG and reported that the establishment of the RECC is underway. It should also be noted IRCC decided at its 10<sup>th</sup> meeting to expand the scope of the WENDWG. Its Terms of Reference were amended accordingly.

13. The elimination of overlapping ENC data that are navigationally significant is one of the main objectives of the WEND Principles. A new IHO Resolution addressing this issue was adopted by IHO Member States (See. IHO CL 19/2018 – *Adoption of new IHO resolution on the elimination of overlapping ENC data*). The WENDWG considered the outcome of this resolution at its recent 8<sup>th</sup> meeting from 20 to 22 March 2018 in Buenos Aires, Argentina and IRCC10 endorsed the resulting report (A separate presentation of IRCC10 outcomes will be given under this Agenda item). The EAHC should also note the comment provided by France in preparation of the 2<sup>nd</sup> meeting of the Council (See Doc. C2-4.2B).

14. At its 13<sup>th</sup> meeting in Monaco (January 2018), the Data Quality Working Group arranged a workshop where participants shared their best practices on the way CATZOC values are populated for S-57 ENCs by Hydrographic Offices. In order to facilitate the harmonization and prepare the future transition to S-101 ENCs, it is recommended that EAHC ENC Producers provide their guidelines to the DQWG.

15. HSSC10 met in Warnemünde, Germany in May 2018. (A separate presentation about the HSSC10 outcomes is to be given under this Agenda item).

**16. Recommendations. EAHC to consider:**

- a) the results of the 8<sup>th</sup> WENDWG meeting held in March 2018;
- b) providing regional CATZOC practices to the DQWG;
- c) the maintenance of ENC Schemes when the INTogIS Phase II is commissioned;
- d) HSSC10 decisions about the further development of the S-100 framework and derived standards.

**Maritime Safety Information Services**

17. MSI Capability and Supportability. The IHO Capacity Building strategy lays particular emphasis on the fundamental capability for all coastal States to provide a maritime safety information (MSI) service in support of their international obligations.

18. **Recommendations.** The Chair is requested to encourage all coastal States to:

- a) maintain regular communication with the regional NAVAREA Coordinator(s) and inform of any change of personnel or contact details;
- b) use and following the guidance provided in S-53 – *Joint IMO/IHO/WMO Manual on Maritime Safety Information*; and
- c) Request National Coordinators to review the contents of the relevant Annexes of the GMDSS Master Plan (GMDSS.1/Circ.21 31May 2017 refers) and to use the annexed questionnaire for electronic submission.

**Capacity Building Programme**

19. The level of activity of the IHO Capacity Building (CB) Programme decreased in 2017. Expenditure in the IHO 2017 CB Work Programme (625 952 Euros) was 18% smaller than the budget for the previous year. Ongoing financial support is provided by the Nippon Foundation of Japan, the Republic of Korea and by a contribution from the IHO budget with in-kind support from Member States and from industry. The IHO Secretariat is continuing its campaign to find additional donor States and funding organizations. In 2017, 80% of the budgeted work program was executed and paid for.

20. The following EAHC activities under the IHO CB Work Programme (CBWP) were conducted:

- a) Seabed Classification and Multi-beam Survey, Jakarta, Indonesia 5-9 October 2015
- b) Tsunami Inundation Mapping Workshop, Tokyo, Japan 25-27 November 2015
- c) MSDI and Database Management, Shanghai, China 18-22 January 2016
- d) Technical Visit to Timor Leste, 5-8 December 2016
- e) Training for Trainers - Basic Hydrography, Busan, Korea 24 October - 4 November 2016
- f) Technical visit to Cambodia, 3-5 April 2017
- g) Training for Trainers - Basic Hydrography, Busan, ROK 4-15 December 2017

- h) Hydrographic Survey for Disaster Management and Relief, Jakarta, Indonesia 11-15 September 2017
- i) Lidar and Satellite Derived Bathymetry Workshop, Tokyo, Japan 30 January 2018 - 1 February 2018
- j) IHO-Nippon Foundation Chart Project (Category "B" Cartography). Attendees:
  - Mr. Aree HWANLABEH (Thailand) - 2017
  - Mr. Muhammad Aizat AZMI (Malaysia) - 2017
  - Mr. S M Rahat Jobayar (Bangladesh) - 2016
  - Mr. Mark Demetrio A. QUODALA (Philippines) - 2016
  - Mr. NGUYEN Manh Duong (Viet Nam) - 2016
- k) IHO-Republic of Korea Category "A" Program at USM. Attendees:
  - Mr. Gilbert ALVIOLA (Philippines) - 2017
  - Mr. Abdul Halim AHMAD NORDIN (Malaysia) - 2017
- l) IHO-Republic of Korea Category "B" Cartography. Attendee:
  - Mr. Manh Dong Duy (Viet Nam) - 2017

21. The following activities will benefit the EAHC and are included in the 2018 and 2019 CBWP:

- a) Carto Production DB System Development Workshop, China 3rd Trimester (2018)
- b) Maritime Safety Information (MSI) Course, venue and dates to be decided (2018)
- c) Use of GNSS for tide correction for survey, Indonesia 9-13 July (2018)
- d) IHO-ROK Category "A" Program (2018-2019). Attendee:
  - Mr Mohd Massuoadi bin MOHD ZUKRI (Malaysia)
- e) IHO-Nippon Foundation Chart Project (2018). Attendees:
  - Ms Hanisah HAJI TIMBANG (Brunei Darussalam),
  - Mr Heru KURNIAWAN (Indonesia),
  - Mr Henry Abad COLDES II (Philippines),
- f) Review of Basic Carto Workshop (2018, pending funding)
- g) Technical Visit to Cambodia (2019)
- h) Training for Trainers (2019)
- i) Risk Assessment for hydrographic surveys and charting management for the safety of navigation (2019)
- j) Management of MSI DB workshop (2019)
- k) Integration and management of hydrographic data for MSDI (2019, pending funding)

22. **Recommendations.**

- a) EAHC Members are invited to identify opportunities in national or regional funding agencies to incorporate hydrographic development in the broader projects supporting developing countries.
- b)

**Crowdsourced Bathymetry**

23. In accordance with Decision 8 of the EIHC5, IRCC7 established the Crowdsourced Bathymetry Working Group (CSBWG) to provide guidelines on the collection and use of crowdsourced bathymetry. Member States and other interested parties were invited to nominate representatives to participate in the CSBWG (see IHO CL 42/2015). The CSBWG has developed the draft IHO publication B-12 – IHO Guideline on Crowdsourced Bathymetry, which has completed extensive stakeholder and IHO Member State consultation. Edition 1.0.0 was presented to IRCC10 for endorsement, prior to submission to IHO Council-2 and IHO Member State approval, it is hoped the publication will have a formal publication date of 1 January 2019. Work has commenced on the draft of Edition 2.0.0, taking into account a number of topics, for which additional time and investigation were identified as being required; additionally as a result of Decision C-1/31, IRCC10 approved an enlarged scope of the CSBWG ToR.

24. The web-based interface portal to the IHO Data Center for Digital Bathymetry, hosted by the USA in Boulder, Colorado, as part of its commitment to the system of World Data Centres, is being upgraded to be compatible with the crowdsourced bathymetry concept. This will enable an IHO-led CSB infrastructure to be established and promoted in the IMO and across the wider maritime community.

25. **Recommendations.**

- a. EAHC members are invited to identify further potential sources of bathymetric measurements and survey data providers and to facilitate the further completion of the DCDB data holdings.
- b. EAHC Members are encouraged to contribute to the IHO DCDB with shallow water bathymetry (CL 11/2016). Existing data is depicted in the following web address: <http://iho-wms.net/swb/>

### **GEBCO support through Seabed 2030**

26. The Nippon Foundation (NF)-GEBCO Seabed 2030 project builds on more than 100 years of GEBCO history; the project has established regional connections to all corners of the world oceans and benefits from the human network of ocean mapping capacity built over 14 years through The Nippon Foundation – University of New Hampshire (UNH) training project. Through Seabed 2030, GEBCO's role will be recognized and reinforced as the authoritative international initiative for mapping the world Oceans, from the coasts to the deepest trenches. The project will champion, develop and nurture the technical and human capacity to complete this task by 2030.

27. Seabed 2030 has established a network of 4 regional centres. Each centre focuses on discovering, gathering and assembling all available bathymetric data from their region to produce regional datasets and resulting products. A global centre will merge the regional datasets to generate the production of the annual GEBCO grid as well as other products. Within this structure, the IHO-DCDB will remain the central GEBCO repository for all raw bathymetric data and all Seabed 2030 project data will be data based there.

28. There will be periodic Project Sponsors' meetings that will be attended by:

- The Project Director
- The Nippon Foundation
- IHO Secretariat
- IOC Secretariat
- GEBCO Guiding Committee members

29. The purpose of the Sponsors' Meeting is to provide an informal forum for:

- All parties to share relevant information.
- The Project Team to inform the Sponsors of project progress and achievements.
- The Sponsors to provide input and advice to the Project Team.
- Oversight and coordination of high-level governance

As part of informing the Sponsors, the Project Director will provide a presentation on project progress and key future plans. This presentation will be considered an *interim report*, and will also be forwarded to the GGC for information.

It is anticipated that the frequency of the Project Sponsors' Meetings will be more regular in the early years of the project and decrease over time. In Year 2 of the Project, the occurrence of the Project Sponsors' Meetings is expected to be 3 to 6 months, depending on needs of the Project and the Sponsors' availability.

30. **Recommendations.** EAHC members are invited to consider the future invitation of Seabed 2030 project representatives to EAHC meetings to discuss options for deepened cooperation and support.

### **IHO GIS and Databases**

31. Work has continued on the development of the IHO GIS which is composed of two main parts:

- a country information database, and
- a regional information database.

32. The country information database has been progressively upgraded to include additional administrative information and facilitate the maintenance of the IHO Yearbook (IHO Publication P-5) and related lists posted on the IHO website. Countries in the EAHC Region are invited to review their entry in the Yearbook on an

annual basis and provide the IHO Secretariat with the appropriate updates or report no change. The status of updates in the IHO Country Information Database concerning the EAHC Countries, including those provided for C-55, is as follows:

Country	P-5 – Yearbook Last update received	C-55 Last update received
Brunei Darussalam	October 2017	nil
China	May 2017	June 2006
Democratic People's Republic of Korea	June 2018	May 2017
Indonesia	February 2018	February 2018
Japan	April 2018	April 2010
Malaysia	April 2018	March 2018
Philippines	May 2016	May 2017
Republic of Korea	June 2018	February 2012
Singapore	August 2016	June 2017
Thailand	December 2017	March 2016

33. An Esri-based GIS solution is being implemented to develop further the regional information database. This will enable access to various layers of information through the IHO website and through cloud-based on-line GIS options. The IHO ENC Catalogue and the IHO GIS for Antarctica have been transferred to this new environment.

34. Work has continued on developing a GIS database application to support C-55 - Status of Hydrographic Surveying and Charting Worldwide and the work of the IHO. In response to the request to complement C-55 composite data (percentage of areas adequately surveyed / requiring re-survey / not surveyed) with CATZOC information (see IHO CL 52/2015), CATZOC data was provided by PRIMAR - on behalf of IC-ENC, PRIMAR and Canada, Singapore, Sweden and Thailand. Useful options for visualizing the data in the IHO C-55 GIS are being investigated.

35. CBSC16 established a C-55 Review Project Team (C-55RPT) that was tasked to consider introducing CATZOC information as an interim solution as an indicator for survey adequacy. This concept was subsequently endorsed by IRCC10.

36. **Recommendations.** Countries in the EAHC Region are invited to review their entry in the IHO Yearbook and C-55 on an annual basis and to provide the IHO Secretariat with the appropriate updates or to report no change.

### **Preparation of the next meeting of the IHO Council**

37. The second meeting of the IHO Council is scheduled to take place in London, UK, from 9 to 11 October 2018. The preparation of this meeting is now completed, in liaison with the host country. It can be noted that in accordance with the Rules of Procedures of the Council, the deadline for submission of proposals by IHO Member States was 9 July 2018, while comments on proposals to be included in the Red Book for the Council were accepted until 31 July 2018. All proposals, comments and INF-paper are compiled in the Red Book and made available in the first half of August 2018.

### **IHO Outreach**

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

03/2018, is:

***“Bathymetry – the foundation for sustainable seas, oceans and waterways”***

39. As part of the report on the proposed Work Programme 2018 at the 1st meeting of the Council, the Secretary-General introduced the priorities, which he had defined with the associated issues and risks, for Work Programme 1 (Corporate Affairs). One of the priorities was to plan and start a complete overhaul of the IHO website including incorporation of GIS-services.

40. The Secretariat conducted an internal workshop in December 2017, to assess the deficiencies of the IHO website in place, the up-to-datedness of the underlying technology and future requirements. The workshop resulted into a comprehensive list of topics to be addressed by an overhaul of the IHO website. In the course of the workshop it turned out that the reshape should not be limited to the establishment of a newsfeed mechanism, to the website structure and design only. Instead, a holistic approach covering IHO’s corporate design of all media channels in digital and print was concluded as the appropriate scope of action. Further and more detailed information will be presented at the second meeting of the IHO Council in London in October.

41. It was concluded further that the current IHO communication strategy is completely lacking the provision of social media. The Secretariat therefore gladly accepted the temporary secondment of a communication specialist from NOAA (USA) to assist the future set up and maintenance of such a component.

**International Hydrographic Review (IHR)**

42. Twice a year, the IHR provides an opportunity for Member States to publicize technical and other achievements in their region. An editorial board comprising a representative from each region has been established. Dr Hideo Nishida (Japan) is listed as the regional representative.

43. Papers for consideration for publication in the IHR should be forwarded directly to the editor (ihreview@iho.int, copy to ian.halls1@defence.gov.au). The deadlines are:

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

44. The IHO Secretariat has been working with the University of New Brunswick (UNB), Canada, in a project to develop a digital repository of the complete library of the IHR. As a result, the first phase of the project now provides access to volumes from 1963 to 2017. They can be found at: <https://journals.lib.unb.ca/index.php/ihr>.

45. Based on the considerations raised in the course of the communication overhaul discussions, the Secretariat proposes a digital revamp of the International Hydrographic Review (IHR). First consultations were held with the Editor in Chief of the IHR, Mr Ian Halls. The following principal changes are proposed jointly:

- Design and building new separate website [www.ihr.iho.int](http://www.ihr.iho.int) using the new corporate design.
- Design the International Hydrographic Review as online publication and printable version (PoD).
- Facilitate technical options to create customized topical compilations from the digital repository of IHR articles for pdf-download and print.

46. Further and more detailed information will be presented at the second IHO Council in London in October for endorsement.

47. IRCC10 endorsed amendments to the IHO Resolution 6/2009 *International Hydrographic Review* that is now being submitted to the 2<sup>nd</sup> meeting of the Council for endorsement.

**Action Requested of EAHC:**

- a) **Note** this report
- b) **Consider** the recommendations on Council/Assembly interactions as presented in **Paragraph 8**
- c) **Consider** the recommendations on Charting as presented in **Paragraph 16**

- d) **Consider** the recommendations on MSI as presented in **Paragraph 18**
- e) **Consider** the recommendations on Capacity Building in **Paragraph 22**
- f) **Consider** the recommendations on Crowd Sourced Bathymetry in **Paragraph 25**
- g) **Consider** the recommendations on further support of the Seabed 2030 project in **Paragraph 30**
- h) **Review** entries related to IHO C-55 and P-5 (Yearbook) at least annually (**Paragraph 36**)
- i) **Consider** submitting papers for publication in the International Hydrographic Review (**Paragraph 43**)
- j) **Take any other actions** as considered appropriate