

**12<sup>th</sup> MEETING OF THE IHO INTER-REGIONAL COORDINATION COMMITTEE**  
**IHO-IRCC12**  
**VTC, 6-7 June 2020**

**REPORT**

**1. Opening Remarks, Introductions and Administrative Arrangements**

*Docs: IRCC12-01A List of Documents (Secretariat)*  
*IRCC12-01B List of Participants (Secretariat)*  
*IRCC12-01C List of IRCC Members (Secretariat)*

The 12th Meeting of the IHO Inter-Regional Coordination Committee (IRCC) originally scheduled to be held in Gdansk, Poland in June 2020, due to the COVID-19 Pandemic was held in a virtual format on 6 and 7 October 2020. The meeting was chaired by Dr Parry Oei (Singapore) and attended by 81 participants from 31 Member States and two observing Organizations. All Regional Hydrographic Commissions (RHCs) and all subordinate bodies of IRCC were represented.

The meeting was opened by the Chair Dr Parry Oei. He welcomed the participants and highlighted that this meeting due to the COVID-19 Pandemic situation had to be adapted to an unusual format. This situation required also a significant change in the items to be discussed. Due to the need to shorten the meeting he highlighted the main issues where the meeting had to focus on and expressed the need to concentrate on decisions.

IHO Secretary-General (SG), Dr Mathias Jonas mentioned the importance of this meeting special during these difficult times where the need to continue strengthen the collaboration among the member states at regional and global level is very important. He regretted that it was not possible to have this meeting in a presentational format and joining the Polish Hydrographic Office in the centennial celebrations.

IHO Director Luigi Sinapi expressed his disappointment for this very important meeting to maintain alive the activities of the Regional Hydrographic commissions and the IRCC bodies, were not possible to be faced. Highlighted the fact that the next months will be very challenging for the IHO with the major events occurring in two months, the IRCC and HSSC meetings, the Assembly (A-2) and the Council (C-4). Expressed also the fact that the IRCC meeting had to be condensed and focused on the main points and the fact that the results should be submitted to the 2<sup>nd</sup> session of the Assembly.

**2. Approval of Agenda**

*Doc: IRCC12-02 Agenda and Timetable (Secretariat)*

Participants were invited to comment on the agenda and timetable in case updates were necessary. Agenda was adopted.

**3. Matters arising from Minutes of IRCC10 Meeting**

*Docs: IRCC12-03A Minutes of IRCC11 (Secretariat)*  
*IRCC12-03B Status of Action List from IRCC11 (Secretariat)*

Chair invited the meeting to comment and approve of the IRCC11 Minutes. List of Actions from IRCC11 was reviewed and updated.

**Decision 1:** Approve the Minutes of IRCC11 (doc. IRCC12-03A).

**Decision 2:** Approve the Updated Status of the List of Actions from IRCC11 (doc. IRCC12-03B).

### 3.1 HSSC Report

*Docs: IRCC12-03C HSSC REPORT (HSSC Chair)*

Presented by Mr Magnus Wallhagen, Chair of the HSSC. He mentioned that there was no HSSC meeting since May 2019 and the next is schedule for this October 2020.

Mr Wallhagen reported on the developments that affects the IRCC and the need to progress by correspondence due to the HSSC12 postponement and also referred the recent new editions of the standards adopted, namely the S-44; the S-49 and the first edition of S-67 Mariners' Guide to Accuracy of Depth Information in Electronic Navigational Charts (ENC).

The key HSSC priorities at operational and strategic level were introduced, as the Review on how the Revised IHO Strategic Plan impact on HSSC at the level of the Strategic Performance Indicators (SPI), the S-100 implementation Roadmap and the transition from S-57 to the S-101 and the future of Paper charts. At the technical level, the priorities are on the development of the S-1xx Product Specifications and operationalization of S-1xx framework, the new edition of S-44 and in the increase of need for Data Quality descriptions.

After the presentation, the Chair opened the floor for comments and Mr Evert Flier suggested an action in the outreach of S-67 within the educational and the Marine institutions.

The Chair summarized enhancing the importance of the S-100 implementation, the paper on the Future on Paper Charts and of the S-67 outreach.

**Decision 3:** Note the HSSC report (doc. IRCC12-03C).

**Action 1:** RHC to Instruct MS in the divulgation of publication of S-67 Mariners' Guide to Accuracy of Depth Information in Electronic Navigational Charts (ENC) to the Marine Institutions and Education Schools.

**Action 2:** Member States to review at the paper on the Future on Paper Charts and provide feedback on it.

## 4. Regional Hydrographic Commissions (RHCs)

### 4.1 RHC Reports

*Docs: IRCC12-04.1A IHO RHC Reports Secretariat Summery (IHO Secretariat)*

*IRCC12-04.1B Nordic HC (NHC Chair)*

*IRCC12-04.1C North Sea HC (NSHC Chair)*

*IRCC12-04.1D East Asia HC (EAHC Chair)*

*IRCC12-04.1E US/Canada HC (USCHC Chair)*

*IRCC12-04.1F Mediterranean and Black Seas HC (MBSHC Chair)*

*IRCC12-04.1G Baltic Sea HC (BSHC Chair)*

*IRCC12-04.1H Eastern Atlantic HC (EAHC Chair)*

*IRCC12-04.1I South-East Pacific Regional HC (SEPRHC Chair)*

*IRCC12-04.1J South-West Pacific HC (SWPRHC Chair)*

*IRCC12-04.1K Meso American - Caribbean Sea HC (MACHC Chair)*

*IRCC12-04.1L Southern Africa and Islands HC (SAIHC Chair)*

*IRCC12-04.1M North Indian Ocean HC (NIOHC Chair)*

*IRCC12-04.1N ROPME Sea Area HC (RSAHC Chair)*

*IRCC12-04.1O South West Atlantic HC (SWAtHC Chair)*

*IRCC12-04.1P Arctic Regional HC (ARHC Chair)*

*IRCC12-04.1Q Hydrographic Commission on Antarctica (HCA Chair)*

IHO Director Luigi Sinapi summarized the most important aspects of the RHC reports. His report was based on the 16 reports submitted to the A-2, eight of them where updated to the IRCC12.

He started by the resume of the achievements, namely in the new technologies with some experiences with autonomous survey vehicles and satellite derived bathymetry shared and discussed and the establishment of vertical reference frames. In relation with the MSDI, initiatives are being synergized, and new website

portals are implemented with data available for non-navigation purposes. The adoption of UNGGIM Shared Guiding Principles are in progress in some Regions and the increase of data provided to the IHO DCDB and to the Seabed2030. The ENC's overlaps are an important issue that requires bilateral agreements. He also mentioned the importance of the interregional cooperation and joint projects, in special in case of a crisis affecting one or several Members of a Region, also it is important to extend the cooperation between adjacent regions. Sometimes this collaboration can be catalyzed by "Relevant Oceans Initiatives".

Director Sinapi mentioned also the high level of industry participation that has been experienced in RHCs meetings and the contribute of Member States to the IHO activities. He expressed the importance of the Capacity Building in the enlargement of the regional and IHO membership and in the contribute to increase the hydrographic awareness along with the need to continue with the provision of intensive Capacity Building activities (i.e. courses, technical and high level visits, workshops). He also mentioned the benefits of establish a common set of criteria at regional level, on which an individual recognition scheme should be based on, to be then applied at international level.

In relation with the challenges faced and difficulties encountered the regions vastness, remoteness, and emergence as a unique operating environment present a challenge to some RHCs and the hydrographic offices along with the high cost of carrying out surveys with the limited national budgets. In some RHCs the lack of involvement of MS in the regional conferences and working group meetings, as well as at IHO working group meetings is relevant. The availability of CSB, tide and current information in some cases requests the review of national legislations.

He also expressed the concern with the impact of the COVID pandemic in the training opportunities and that in despite of the Capacity Building initiatives, there is no commensurate development in the hydrographic capacity within some Regions. The need of training in some regions to adapt to the S-100 standards is also a concern. The role of the IHO and its RHCs in Seabed2030, as well as the contribution of Seabed2030 to the UN Decade of Ocean Science, societal goals are not well recognized. Also there are difficulties in the coordination of the INT chart schemes and ENC coverage.

In relation with the lessons learned was enhanced the value of increased collaboration across RHC (especially adjacent RHCs) and regional partnerships for Capacity Building training, Seabed2030, MMSDIWG and other.

The need of provide data to INT Chart producer Nations and the need for developing a Disaster Response Framework to improve the response in case of future disasters.

To finalize, Director Sinapi also addressed the change in the date and format of the next IHO Assembly and the activities related with the IHO centenary celebrations (IHO-100).

The Chair mentioned the difficulty of summarize the key points and the consistency in terms of contents. He enhanced the progress within RHC's to improve CB and the effort to harmonize and share the data and encouraged the regions to collaborate and solve the issues of overlapping S-57 and S-101 data and to improve the participation in the IHO and regional committees and working groups taking advantage of the actual increase in the VTC meetings.

Decision 4: Note the IHO RHC Reports Secretariat Summary (doc. IRCC12-04.1A).

Decision 5: Note all the reports from agenda item 1.1 (docs. IRCC12-04.1B, 04.1C, 04.1D, 04.1E, 04.1F, 04.1G, 04.1H, 04.1I, 04.1J, 04.1K, 04.1L, 04.1M, 04.1N , 04.1O, 04.1P and 04.1Q).

Action 3: Member States strongly encouraged to continue updating C-55.

Action 4: RHC to implement the IHO Resolution 2/1997 as amended by A-2.

#### Recommendations:

1. Member States to proceed with the projects to the establishment of vertical Reference Frames, not only at a national level but also at a Regional level and in understanding the differences at national

boundaries and how to reduce it.

2. Member States to proceed or implement MSDI Regional initiatives. RHC requested to include MSDI as a permanent agenda for their meetings.
3. Member States to increase the data contributions to the IHO DCDB and to the Seabed2030.
4. Member States to promote the bilateral discussions regarding the ENC overlapping issues.
5. Member States to promote the regional cooperation in different activities.
6. Member States to improve their contribution to the work of the IHO, providing active participants to IHO working groups.
7. RHC to continue with the provision of intensive Capacity Building activities (i.e. courses, technical and high level visits, workshops) and also to actively seek Capacity Building partnerships.
8. RHC to promote the enlargement of the regional membership assisting in the recruitment of new IHO Member States
9. RHC to establish a common set of criteria on which an individual recognition scheme of individual competence for hydrographers and nautical cartographers should be based on, to be then applied at international level.
10. RHC to develop a Disaster Response Framework.

## **5. The consequences of the pandemic on RHC activities and business continuity of the IRCC Subordinate Bodies**

Chair introduced the topic and open the floor for interventions.

NIOHC Chair had issues in intervene, so he sent this intervention by email: “Sri Lanka as the present chair of NIOHC wishes to inform its compelling desire to conduct the intended NIOHC-20 meeting in 2021 with the concurrence of MS of NIOHC and to intimate the outcome to IHO secretariat in this regard.”

Mr Shigeru NAKABAYASHI acting as representative from EACH provided two cases as examples for other RHC. The CB Seminar host by Brunei, a very recent member of IHO, with the support from republic of Korea (RoK) and Indonesia, in December 2019 and the interregional Seminar on MSI organized in the end of 2019 due to the fact that the NAVAREA is different from the RHC areas.

ARHC Chair RAdm Shepard SMITH Mentioned that they switched quickly to a series of virtual meetings with a full RHC conference in August combined with a Science day with around 150 participants and a more intimal Hydrographic day. Some important advantages of the face-to-face meetings were lost but they continued the work of the commission.

WWNWS Chair Mr Christopher JANUS enhanced the important contribute of Mr Peter Doherty as Chair during more than 18 years. He mentioned also that a study was made using data from the last years and was concluded an annual increase of about 5,5% in the navigational warnings. After the start of the COVID pandemic there was a drop, but he expects an increase in about 9% for 2020. He also mentioned that intend to provide a report, maybe in IRCC13, related with how the CB supports the increase of navigational warnings.

MACHC Chair Mrs Kathryn RIES mentioned that MACHC will have the first virtual meeting from 30 November to 3 December with simultaneous translation. The Region had an impact in the CB activities, but an important course in Spanish related with tides and waters levels was already assured to be postponed to 2021, this training activity not only will have members but also other partners. She also mentioned the four webinars conducted on Seabed2030 with the records and presentations already available.

SAIHC Chair RAdm Peter SPARKES reported that SAIHC meeting held in September by VTC had a significant increase in the participation and some members that normally won't participate due to the costs were able to participate with this format. He proposes to consider in the future to have in the face-to-face meetings and also a VTC participation option.

NIOHC Chair RAdm YN Jayarathne mentioned that the RHC meeting was postponed to 2021.

## Recommendation:

11. RHC consider having in their meetings, in addition to the regular face-to-face participation the possibility of VTC participation, to allow increasing the number of participants.

## 6. Capacity Building, IHO Education Requirements and E-Learning

### 6.1 The level of CB activities will be presented and considered (doc. IRCC12-06A)

Presented by Mr Evert FLIER, Chair of the CBSC. He started to mention that the COVID 19 pandemic had a significant impact in the CB activities, then he summarized other topics that will be under point 6, the E-learning Center and the Empowering Women in Hydrography program proposed by Canada. He also mentioned the intention to add a forth item, the action item for the C-4, with regarding the performance indicators. In relation to this last point CB is about to planting seeds so is a long term perspective and is important to work with the WWNWS to try to relate the CB activities with the effects, in this case in the navigational warnings.

He mentioned the sources of funds to the CB Program and enhanced the generous contributes from RoK and Japan. For the 2020 CBWP, the Republic of Korea (ROK) contributed with more the 320 000 Euros with almost all funds earmarked to sponsor students from IHO Member States for the Category "A" Hydrographic Survey Program at USM, the Training for Trainers (TFT) project and a Category "B" Hydrographic Survey Program held at KHOA, Busan, ROK. Japan continuous to provide its important contribution through the Nippon Foundation (NF) by funding CB training projects. The NF has provided a financial contribution to the IHO to fully fund the NF-IHO GEOMAC Project. The NF is substantially funding other projects outside the direct context of the IHO CB. Several MS provide direct contribution or support for IHO CB activities. This can be a.o. the provision of facilities, trainers, other personnel, advice, etc. The CB programme depends on these contributions.

The WP for 2020 has been updated. Several projects could not be executed due to the CoVID-19 pandemic. Most of them have to be postponed. The bigger surplus estimated for the end of 2020 will therefore urgently be needed to execute the 2021 WP. In relation with the 2021 WP the accepted submissions would need funds of about 1,520,000 € and the Work Programme allocates about 1,260,000 €. He also mentioned the appeal to ascertain a minimum level of funds that has led to a significant attention and fruitful discussions on all levels of the IHO.

In CBSC18, Decision 9 was related with the recognition of the importance and very high potential of the offer from Republic of Korea to establish and support an IHO e-Learning Center.

During the interventions Mr Thomas DEHLING (Vice-Chair) enhanced the importance of CBSC18 Decision 9 and the hope that it finds support from the IRCC members.

The Chair proposed that in some CB training activities in addition to the face to face participation be also available a remote learning participation, increasing the participation.

The IHO SG Mentioned that the proposal from RoK in establish an IHO e-Learning Center is the proposal PRO-3.3 to the Assembly and is expected that the support from the IRCC be expressed. He also enhanced the importance of the Performance Indicators (PI) to the Member States and expressed some concerns with the level of the CB activities for the next year due to the eventual effects of the pandemic.

Mr Thomas DEHLING as former CBSC Chair enhanced that some work was done on the PI based on the results reported by the CB coordinators and this system is in place but is necessary some more developments.

Director Sinapi mentioned that the GEOMAC course will start in December and the Cat. A Hydrography course at USM will start in December, both sponsored by the NF. He also proposed the CBSC to review the CB Strategic Plan.

Decision 6: Note the CBSC Report (doc. IRCC12-06A).

Decision 7: Endorse the decisions and actions on PRO-3.3 to A-2(Establishment of an IHO e-Learning Center).

Decision 8: Note the significant effort from CB Coordinators to assess the needs in the region, to identify national and regional projects that may contribute to the CBWP and to coordinating the



support for countries in need.

Action 5: Forward CBSC18 decision 9 on the Establishment of an IHO e-Learning Center to A-2.

Action 6: Invite the Member States who have experience in developing and providing e-Learning contents to share their resources and experiences to the e-Learning PT.

Action 7: Revision of the CB Strategy in order to be aligned with the new IHO Strategic Plan.

**Recommendations:**

12. Consider developing and implementing a system with face to face and also remote learning activities in the CB training.
13. To set up a system of performance indicators to measure the effectiveness and efficiency of CB activities.

**ACTION C3/25 - CB activities** - The Council invited the IRCC to instruct the CBSC to develop a system of performance indicators to measure, under the conduct of the CBSC and in accordance with the Revised Strategic Plan, the effectiveness and efficiency of CB activities. This system should be oriented by the expected effects of CB support, not on the achievement of the CB activities. (to report on C4). **It is an ongoing item, had been implemented a system to measure the results of some CB actions with the CB Coordinators but is a long time process, more work needs to be done.**

## **6.2 The education requirements and difficulties for hydrographic surveying and nautical cartography trainings (doc. IRCC12-06B)**

Presented by Mr Ron FURNESS, Chair of the CBSC. He started to explain the role of the Board and mentioned the working program for 2019-2020. During the last year, in addition to the annual meeting the IBSC issued the companion document Frequently Asked Questions to contribute to the Right First Time principle, i.e. assisting institutions to improve the quality of submissions; (IBSC Work Plan Q2 2019 to Q2 2020, approved IRCC11, Decision 26), review the IBSC standards and maintain IBSC Publications (Task 3.8.4, IHO 3 year Work Programme 2018-2020). Also at the IBSC42 Conditional Recognition submissions were reviewed (IBSC Work Plan Q2 2019 to Q2 2020, approved IRCC11, Decision 26) and the Board realized on-site visits to provide guidance and assistance to institutions in China and Belgium (IBSC Work Plan Q2 2019 to Q2 2020, approved IRCC11, Decision 26).

In 2020 the IBSC issued the Guidelines for the Implementation of the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (Ed 2.1.1, March 2020) and the Frequently Asked Questions (FAQ) (Edition 1.0.0, March 2020).

At the IBSC43 meeting fifteen submission were reviewed, 1 was recognized, 5 recognized with conditions and 9 not recognized. In October-November 2019 the Board had also a workshop meeting in Singapore to review some intersessional submissions, the annual reports and work on the standards companion documents.

The main problem encountered remains with the quality of submissions which implies an increased work for the institutions, but also for the Board that, for each program, has to carry out, normally, more than one review. He also mentioned the changes occurred in the IBSC members.

In relation with the impact of the COVID-19 on the work of the IBSC and the teaching delivery strategies of the recognized programmes was immediate and disruptive from early 2020. The IBSC43 Meeting held in Colombia was conducted with the participation of two members by VTC and all presentations were conducted by VTC since the important presence of the delegations was not possible and is always an important added value to the respective submission's revision. The IBSC attempted to minimize the impact of these measures with additional time allowed for clarifications. Due to the close of the borders the meeting was interrupted before the end and the review of two submissions had to be postponed and be conducted subsequently by VTC.

Understanding that COVID-19 will have an impact in the running of programmes, the IBSC issued a message in the IHO web page expressing the Board availability to help the institutions to adapt to the situation, but at the same time maintaining, as much as possible, the required level of the learning outcomes.

The Board received letters from several institutions regarding their necessary modified teaching strategy to deal with the impact of the COVID-19. In summary, it is possible to mention that the institutions adapted very quickly and well, developing and implementing remote learning strategies for the theoretical classes and

delayed the delivering of the practical classes for the end of the respective lockdowns with the necessary safety measures implemented.

In the future, the workshop in next November is expected to be by VTC with the respective limitations that VTC with participants from very different time zones have. In case the next annual meeting IBSC44 be conduct by VTC this would have a seriously disruptive effect with grave consequences in the conduct of the Board's programme for the renewal of recognitions and the consideration of new programmes for recognition.

**Decision 9:** Note the IBSC Report (doc. IRCC12-06B).

**Decision 10:** Acknowledge the work done by the Board in the delivery of the companion document *Guidelines for the Implementation of the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers* Ed. 2.1.1 (May 2020) and the new document *Frequently Asked Questions*, Ed. 1.0.0 (March 2020).

**Decision 11:** Agree with the IBSC Proposed Work Plan – Q2 2020 to Q2 2021 (IRCC12-06B Annex B).

**Recommendations:**

14. Member States and submitting institutions are encouraged to engage with the IHO Secretariat early in the process of them preparing submissions for programme recognition.
15. Member States and submitting institutions are encouraged to consult the *Guidelines*, the *FAQs* and the *White Paper* (IHR-Nov-2017 – Article: *Maintaining the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers*) early in the process of preparing submissions for programme recognition.

**6.3 The use of online courses, seminars and potential e-learning activities will be discussed. IHO E-Learning Center proposed by ROK to A-2 (Pro 3.3) will be presented to the participants (doc. IRCC12-06C)**

Presented by Mr Peter Hak, from the Republic of Korea (RoK). He started with a video about the E-learning center project. A center that could store, manage providing adequate guidelines the E-learning training materials and make available the contributes of several different contributors, about different subjects. He also enhanced the importance of this project, special with this COVID pandemic situation. RoK submitted PRO 3.3 Establishment of an IHO e-Learning Center to the 2nd session of the IHO Assembly. According to ACL19, it was advised to discuss the PRO 3.3 and following amendments during the Capacity Building Sub-Committee meeting, to then submit it for consideration by the Assembly. At CBSC-18 it was decided to establish an e-Learning Project Team (PT) with 10 members from the CBSC, IBSC, IHO secretariat and interested Member States to work together with IBSC and KHOA “in the development of the structure and framework of an IHO e-Learning Center and report to IRCC12”. Mr Hak also mentioned the system architecture proposed and the proposed implementation timeline.

The Project Team decided that, if PRO 3.3 be approved at A-2, the establishment of the IHO e-Learning Center should be under the CBSC, setting up a Steering Committee and a Secretariat for efficient implementation, the initial requirements were established and was also agreed to consider the practical exercise (or face-to-face) aspects when developing the e-Learning guideline and curriculum as required by the nature of hydrography. The PT will continue to work with ROK to establish the Center by A-3. Meanwhile, Member States who have experience in developing and providing e-Learning contents are invited to actively share the resources and experience.

After the presentation the Chair expressed his view on the importance of this project and then opened the floor. USCHC Chair, Dr Geneviève BECHARD Commended RoK and all involved in the project and mention that in the next USCHC will be discussed how the regional members could contribute. WNWNS Chair also expressed his commend to the project and the intention that WNWNS participates in the PT and mentioned that they are working in the conversion of an MSI course in an eLearning format. Mr Thomas DEHLING highlighted that the definition of eLearning is wider and different kinds of training contents could be included in this definition which will allow the inclusion of several training materials available on Member States.

IBSC Chair expressed his concerns with the assurance that the expected learning outcomes are achieved, the practical classes and the consistency of the materials that may come from different sources, mentioning that the expectations should be well managed. The Chair enhanced that this is a work in progress. MSDIWG Chair mentioned that MSDI has already some eLearning materials and also would like to participate. IHO SG asked if the intention is to have only open source materials or also more sophisticated and paid courses. Mr Peter Hak stated that the system will be ready to deal with different contents, but is expected that, at least most of them will be free. Mr Evert FLIER observed that it will be interesting to look at the other organizations, IALA, IOC, etc. and how they engage with the Members States. RAdm Peter SPARKES expressed that this will be a great opportunity to look at the eLearning materials and mention that also UKHO are now preparing some parts of their courses in eLearning.

**Decision 12:** Note the progress made by the CBSC, e-Learning Project Team, and RoK.

**Decision 13:** Support the e-Learning Project Team in establishing the IHO e-Learning Center and developing an e-Learning guideline in cooperation with RoK.

**Recommendations:**

16. Invite the Member States who have experience in developing and providing e-Learning contents to share the resources and experience to the PT.

17. To contact with other organizations that may want to participate and contribute with contents.

**6.4 The Empowering Women in Hydrography (EWH) project (docs. IRCC12-06D.1 and IRCC12-06D.2).**

Ms Annie Biron from the Canadian Hydrographic Office presented this item, starting to enhance the large imbalance in the participation of women in maritime related domains such as hydrography. She also mentioned that recently many maritime related organizations have started this change with symposiums, programs and activities with this theme, providing several examples. Organisations are encouraged in removing barriers for women, increasing the representation of women at higher echelons, as subject matter-experts and in policy-making process taking advantage of having gender-diverse teams at all levels.

She enhanced that under the UN decade of the Ocean Canada a special grant and contribution fund that could go up to 68000 euros/year during three years, to which IHO can apply. The fund finances up to 75% of the project costs. It will be important to have also the collaboration of other member states, not only to reach the necessary 25% but to increase the dimension of the project. As an example has mention the in kind offer of NOAA to support and already participate in this project with a letter that is already a document of this meeting (IRCC12-06D.2). Ms Biron provided some examples that this work item could include, expressed that a workshop schedule for May 2021 will be to present and discuss proposals. She invited IRCC to:

- a) Support the adoption of this new work item to the Capacity Building Work Plan from 2021, subject to approval by the forthcoming 2nd IHO Assembly.
- b) Invite the Assembly to approve an action for the Secretariat to negotiate and sign a Cooperation agreement with Directory of Fisheries and Oceans Canada for funding.
- c) Subject to Assembly approval task the CBSC to work out the project plan in further detail including coverage of relevant parts to be funded, to propose project management arrangements and define suitable key performance indicators.

IHO Director Sinapi thanked Canada for the project and expressed that IHO will work with them in the implementation, and the inclusion in the IRCC Agenda was one of the first steps, this project should be in the CBSC program. He also thanked NOAA for the supportive letter sent.

**Decision 14:** Support the adoption of this new work item, EWH to the Capacity Building Work Plan from 2021, subject to approval by the forthcoming 2nd IHO Assembly.

**Action 8:** Invite the Assembly to approve an action for the Secretariat to negotiate and sign a



Cooperation agreement with Directory of Fisheries and Oceans Canada for funding.

Action 9: Subject to Assembly approval, to task the CBSC to work out the EWH project plan in further detail, including coverage of relevant parts to be funded, to propose project management arrangements and define suitable key performance indicators.

Recommendations:

18. MS to consider to participate in the Empowering Women in Hydrography project.

## **7. MSDI and update on UN-GGIM activities**

### **7.1 Importance of MSDI activities (docs. IRCC12-07A.1, IRCC12-07A.2 and IRCC12-07A.3)**

Presented by Mr Jens Peter Hartmann, Chair of the MSDIWG. He reported on the last and next planned meetings expressing the advantages of having the meetings connected with the meetings of the OGC Marine DWG and the UN-GGIM Working Group on Marine Geospatial Information. He also mentioned the main topics of the last meeting and the fact that during the meeting were developed some use cases that were presented at the UN-GGIM meeting and are focus on Marine Spatial Planning as ToR are changed.

Stated that one of the issues is how MSDI could contribute to UN Sustainable Development Goals and what kind of data they should have at national and regional level. He also expressed that one of the concerns is to have a better alignment and integration with IGIF and other UN-GGIM structures/publications. There are numerous common elements within IGIF and MSDIWG and simple connections could be made which would bring the definitions section up to date. As a consequence, there is a need for updating/modifying the IHO publication C-17 in response to the IGIF initiatives.

It was also mentioned the importance of the data security and integrity and the requirement for robust and comprehensive measures that ensure that the data is protected from the producers and also the end user perspective. The recent developments in the S-100WG further address the problem and could help by adding data integrity measures to realtime data supply. These measures do not wholly address the needs of the MSDI community though and the all-important area of data transformation requires further insights and work to come up with tangible, practical solutions. The MSDIWG will continue to focus on data security and integrity from a MSDI perspective.

Mr Hartmann also presented the joint OGC/IHO Federated Marine SDI Demonstration Pilot: FMSDI Land/Sea Interface with the objective to show how MSDI can provide data to other than traditional users and also the impact in the OGC and relevant S-100 IHO Standards. He expressed the need to support the projects and the intention is to start it in the second quarter of 2021. Some of the results of the MSDI questionnaire sent to the Member States last year were presented, with the issue that in most of the countries the HO is not the entity responsible for the MSDI.

Decision 15: Note the MSDIWG report.

Action 10: Take note of the proposed joint "OGC – IHO Federated Marine SDI Demonstration Pilot: FMSDI Land/Sea Interface", described in the document IRCC12-07A.2 and give guidance on the way ahead.

Action 11: Promote the discussion of any item with relevance to SDI/MSDI/MSP and to take appropriate actions.

Recommendation:

19. MS to engage with MSDI WG to have a more active collaboration.

### **7.2 Update on UN-GGIM activities (docs. IRCC12-07B)**

Presented by Dr Mathias Jonas, IHO Secretary General that explained the activity on the The United Nations Committee of Experts on Global Geospatial Information Management (UNGIM) and the objective of trying to force any kind of activity related with Geo information and contribute to improve the use of Geo information. He also referred the last UNGIM remote session and the respective activities in special the Integrated Geospatial Information Framework which is a kind of a series of cookbooks explaining what to do with geo spatial information nowadays and a document called Future Trends in Geospatial Information

Management. IHO did a substantial contribution through the Working Group on Marine Geospatial Information and the meeting took note on the ongoing efforts of the Working Group to implement the Integrated Geospatial Information Framework (IGIF) within the marine domain. The notice that IHO is about to establish an Innovation and Technology Laboratory in Singapore was very well received.

Decision 16: Note the Update on UN-GGIM activities report.

Decision 17: Commend the activity of the UNGGIM Working Group on Marine Geospatial Information and its Chair.

## 8. Ocean Mapping Activities

### 8.1 Crowd Sourced Bathymetry (docs. IRCC12-08A.1 and IRCC12-08A.2)

Presented by Ms Jennifer JENCKS, Chair of the CSBWG that started to describe the last meetings CSBWG8 in October 2019 in Monaco and CSBWG8 in June-July 2020 via VTC with more than 40 participants. The IHO Data Center for Digital Bathymetry enhancements were described and the systems to collect data and the current CSB efforts and projects along with the Seabed 2030 funded CSB pilot programs. She resumed the CSB Guidance and outreach. Ms JENCKS enhanced the issue of the IHO e-publication publication B-12 Guidance on Crowdsourced Bathymetry that could be an example for other IHO publications and also the document IRCC12-A.2 CSBWG a paper on raising the awareness of CSB within RHCs and proposed actions within RHC to support the IHO CSB initiative and the considered best ways to engage HOs during the RHC meetings. The need of have Regional coordinators of Seabed 2030 and CSB was also expressed. In the end the problems encountered were summarized.

IHO SG expressed the congratulations in the improvements achieved and appealed all MS to positively contribute and also mentioned some contacts with the International Seabed Authority that coordinates the deep sea exploration and the expectation that this allows to receive additional data from some contractors. Mr Flyer suggested that the approach to the MS that does not supply data due to the national legislation be in find which data resolution they could supply, instead of only ask if they could or not provide bathymetric data.

Decision 18: Note the contents of the CSBWG report.

Decision 19: Endorse the e-publication of B-12 and allow its use as an example for other IHO publications.

Action 12: Consider CSB and Seabed 2030 initiatives be permanently added as an agenda item at future RHC meetings.

Action 13: Encourage Member States to support the CSB initiative with positive actions, such as requiring all research vessels to collect bathymetric data for late uploading, when on passage or when it does not interfere with other research activities.

Action 14: Support the modification of the current “RHC Seabed 2030 Coordinator” to a joint “RHC CSB/Seabed 2030 Coordinator” and provide the identification of the Coordinators.

Action 15: Encourage the GEBCO GC to liaise with Seabed 2030 Project Team and with the RHC CSB/Seabed 2030 Coordinators, in order to establish a common methodology and provide regional analysis prior to RHCs meetings.

Action 16: Encourage MS to release datasets or subsets into the public domain via the IHO DCDB.

Action 17: RHC's to promote the vital need to map the entire seabed.

Action 18: Consider the amendment of the structure of the National Reports to the RHC included in Resolution 2/1997 as amended, in order to include the CSB activities.

#### Recommendations:

20. Encourage all Member States to review and respond to IHO CL 21/2020

21. Encourage all Coastal States to review and respond to IRCC CL 1/2020

22. To set up a proactive management and monitoring procedure of dataflow between stakeholders proactive management and monitoring procedure of involved in crowdsourced bathymetry notably as

part of the support provided to the NF-GEBCO Seabed 2030 project.

## **8.2 Update on Seabed 2030 project (docs. IRCC12-08B)**

Presented by Mr Jamie McMichael-Phillips Director of the Seabed 2030 project. He thanked for the invitation to participate and congratulate IRCC for the enormous participation. He mentioned the huge part of the ocean floor not mapped yet and explained that Seabed 2030 is a collaborative project between the Nippon Foundation and GEBCO, to inspire the complete mapping of the world's ocean by 2030 and to compile all bathymetric data into the freely available GEBCO Ocean Map that had started in 2017. The complex network of this project was explained along with the data ingestion in the system and that the Ocean mapping coverage now stands at 19% and when the project began were only 6%. Now the project is focused on mapping the gaps with three different initiatives: the Ocean Frontier Mapping, the Crowd Sourced Bathymetry and the Technology Innovation. He also explained the alumni engagement and concluded asking for the promotion of the need to map the entire seabed and to encourage the organizations to make the data available, the data that they can provide ideally with high resolution but if not possible, the resolution that can be provided.

**Decision 20:** Note the contents of the Seabed2030 report.

**Action 19:** Encourage all Member States to make existing seabed mapping data available for use by Seabed 2030 in the GEBCO Grid.

## **8.3 Update on the UN Decade of Ocean Science for Sustainable Development 2021-2030 (docs. IRCC12-08C)**

Presented by IHO Director Sinapi that started to mention that the objective is to present the relations and the common aspects between the UN Ocean Decade global initiatives and the IHO competencies and initiatives. He synthesized the UN Ocean Decade general motivation as the bridge of the Decade Scientific Objectives between the Ocean we have and the Ocean that we want. The phases of this initiative were introduced mentioning the plan that was presented and approved by the UN Assembly with the kick off planned for 2021. Then was showed a synthesis of the relations between the UN Ocean Decade four objectives and the IHO competencies and initiatives, resuming that the link between the UN Ocean Decade actions and the IHO is based on the IHO strategic plan - proposed Goal 3-"Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean". Then to conclude the UN Ocean Decade actions and the connection with the IHO new strategic targets were also presented.

**Decision 21:** Note the report on update on the UN Decade of Ocean Science

**Action 20:** RHC to participate at Regional level in those actions of the UN Ocean Decade matching with IHO's new strategic targets (IRCC12-08C).

## **9. WEND-100 principles**

### **9.1 Progress on WEND-100 principles (docs. IRCC12-09A)**

Presented by Mr John Nyberg (USA) Chair of the WENDWG that presented a progress report. Started by the WEND 100 principles background and indicated that the draft version of the WEND-100 Principles, will be submitted for the review of this commission during this meeting. The Principles will be followed by an implementation guide with some specifications. The principles encourage data availability anywhere in the world, distribution along with data protection and also addresses the avoidance of service duplication, coordinated data management, quality management, and assistance and training. The principles also noted the capacity Building. To finalize Mr Nyberg presented his view on the path to completion.

**Decision 22:** Note the WENDWG 100 principles report.

**Decision 23:** Agree that the revision of WENDWG TORs and ROPs can be put on hold at the moment.

**Decision 24:** Agree that current IHO Resolution 1/1997 as amended should remain in force until the sunset

of S-57 ENCs.

- Action 21: Endorse the attached draft 3.1 as version 1.0 and path forward of the new WEND-100 Principles (agree on current structure)
- Action 22: Consider the impact of these new WEND100 Principles on the S-100 Implementation Strategy for discussion at A-2 (before C-4) and subsequently provide an update to the IRCC report to A-2 if appropriate.

## 10. Next IRCC Meetings (Venue and Date)

The Chair invited the participants to consider the dates and venue for IRCC13, IRCC14 and IRCC15. Participants were invited to offer to host IRCC15. The meeting considered several possibilities and agreed on the following:

- Decision 25: Hold the next meetings of the IRCC in the following venues and dates:  
IRCC13: 22-24 June 2021 - Monaco  
IRCC14: May/June 2022 - Ecuador or Japan (TBC) (IHO Secretariat to contact Ecuador)  
IRCC15: May/June 2023 - Japan or Indonesia (TBC)

## 11. Any other business

No other business items were presented.

## 12. Review of the Actions and Decisions

*Docs: IRCC12-12A Draft List of Actions from IRCC12 (Secretariat)*  
*IRCC12-12B Draft List of Decisions from IRCC12 (Secretariat)*  
*IRCC12-12C Draft List of Recommendations to RHCs (Secretariat)*

Secretary presented the draft lists of actions, decisions and recommendations agreed during the meeting in docs. IRCC12-12A, IRCC12-12B and IRCC12-12C that were drafted during the meeting. The final List of Actions, List of Decisions and List of Recommendations to RHCs are in Annexes A, B and C to this report.

- Decision 26: Approve the draft List of Actions, Decisions and Recommendations to RHCs as discussed during the meeting (doc. IRCC12-12A, B and C).

## 13. IRCC Work Programme Management

*Docs: IRCC12-13A IHO Work Programme for 2021-2023 (Secretariat)*  
*IRCC12-13B Draft IRCC Work Programme (Secretariat)*

IHO Director Sinapi, Secretary, presented the draft IRCC Work Programme for 2020-2021 (doc. IRCC12-13B) considering the impact of the IHO Work Programme 2020 and 2021-2023. Doc. IRCC12-13A was uploaded before the meeting. Final IRCC Work Programme 2020-2021 is in Annex D to this report.

- Decision 26: Approve the draft IRCC Work Programme as discussed during the meeting (doc. IRCC12-13B).

## 14. Election of Chair and Vice-Chair

During the period established for IRCC members to present candidates for the positions of Chair and Vice-Chair (between 2 and 6 October) no candidates were presented. The only candidates were the ones presented before for the following positions:

IRCC Chair: Mr Thomas DEHLING (Germany);

IRCC Vice-Chair: Mr John Nyberg (USA).

With one candidate for each position and not having nothing to object from the IRCC members, the candidates were elected.

## **15. Closure**

Chair ended the meeting.

### **ANNEXES:**

Annex A: List of Actions

Annex B: List of Decisions

Annex C: List of Recommendations

Annex D: IRCC Work Programme for 2020-2021