

1st MEETING OF THE IHO COUNCIL

Monaco, 17-19 October 2017



REPORT OF THE IHO INTER-REGIONAL COORDINATION COMMITTEE

REPORT OF THE INTER-REGIONAL COORDINATION COMMITTEE TO THE FIRST MEETING OF THE IHO COUNCIL

Introduction

1. The objective of the Inter-Regional Coordination Committee (IRCC) is to establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions; establish cooperation to enhance the delivery of capacity building programmes; monitor the work of specified IHO Inter-Organizational Bodies engaged in activities that require inter-regional cooperation and coordination; promote cooperation between pertinent regional organizations; and review and implement the IHO Capacity Building Strategy, promoting capacity building initiatives.

2. Its work is guided by the IHO Work Programme 3 "Inter-Regional Coordination and Support". The report on the implementation of the Work Programme 3 from 2012 to 2016 was presented to the first session of the Assembly (A-1). This document reports on the progress of the on-going implementation of the Work Programme 3 for 2017 that may be of interest to and requires actions of the Council.

3. The ninth meeting of the Inter-Regional Coordination Committee (IRCC9) was held in Paramaribo, Suriname, from 12 to 14 June 2017. The IRCC reviewed the reports and activities of the RHCs and its subordinate bodies, considered the outcomes of the 1st Session of the IHO Assembly (A-1), acknowledged the accomplishments and challenges of the Capacity Building programme and IBSC activities, examined the developments on Crowd-Sourced Bathymetry and maximizing the use of hydrographic data and considered issues related to the Worldwide ENC Database (WEND). The IRCC re-elected Dr. Parry Oei as Chair and elected Mr. Thomas Dehling as Vice-Chair of the IRCC for the period 2017-2020.

Difficulties and challenges yet to be addressed

Secretariat resources available to support the IHO Capacity Building Programme.

4. Personnel resources in the IHO Secretariat available to provide administrative support to the IHO Capacity Building (CB) Programme and also to the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) are stretched. This is due to the significant increase in the level of activities of both of these bodies. This was noted by EIHC5 (Decision No.2) and further reported by the IHO Secretariat to the 1st Session of the IHO Assembly. This shortfall has been raised and was considered at the ninth meeting of the IRCC in June 2017 and the recruitment of additional staff to assist the CB activities has been endorsed in principle by the IRCC.

A Proposal to Increase the Capacity Building Support at the IHO Secretariat is provided in Annex-A.

Achievements/Outputs/Conclusions

Element 3.1 Co-operation with Member States and attendance at relevant meetings

5. During the reporting period, the ROPME Sea Area Hydrographic Commission (RSAHC), Nordic Hydrographic Commission (NHC), US-Canada Hydrographic Commission (USCHC), Mediterranean and Black Seas Hydrographic Commission (MBSHC) and the North Indian Ocean Hydrographic Commission (NIOHC) had scheduled meetings. These Regional Hydrographic Commissions (RHC) considered and coordinated their regional activities including the coordination of International (INT) Charts and ENC schemes.

Element 3.2 Increase participation by non-Member States

6. The Republic of Seychelles, which is one of the non-IHO Member States in the Indian Ocean region was visited by one of the IHO Directors in May 2017 under the CB High Level Visit programme

and was invited to participate in the RHC meetings and to join the IHO. The IHO Director was informed that Seychelles has a positive desire to join the IHO in the near future and is actively considering becoming a member of the IHO. Significant headway was made in Solomon Islands in the development of hydrographic infrastructure and governance, also demonstrating an intention to accede to the IHO Convention. In South America, Bolivia, Guyana and Paraguay engaged in several regional activities and are seeking to become members of the IHO. In Africa the RHCs are increasing their engagement with non-Member States with the support of the Capacity Building Programme.

Element 3.3 Capacity Building Management

7. The 15th Meeting of the IHO Capacity Building Sub-Committee (CBSC15) took place in Paramaribo, Suriname from 7 to 9 June 2017. The Sub-Committee considered the impact of the revised IHO Strategic Plan (2017) and of the IHO Capacity Building Strategy and considered that the CB Strategy is fit for purpose. The impact of using e-learning to deliver some components of CB training was considered in light of the outcomes of the 1st Session of the Assembly and it was agreed that the next revision of the Strategy should highlight the importance of this option. The Sub-Committee also noted the progress made in regional and national projects related to Capacity Building. The meeting adopted three new CB Procedures. The CBSC updated and adjusted the 2017 CB Work Programme and approved the 2018 CB Management Plan and the 2018 CBWP considering the priorities identified by the Sub-Committee, the available resources and potential additional resources. The updated CB Work Programme for 2017 and the approved CB Work Programme for 2018 are available on the IHO website.

Evolution of the CB Fund

8. During the reporting period, the Nippon Foundation (NF) of Japan has contributed 1,114,035 Euros to the Capacity Building Programme which will be used to fund the next three courses (2017-2019) in "Marine Cartography and Data Assessment" delivered for the CHART (Cartography, Hydrography and Related Training) Project, at the UKHO, Taunton, under the terms of an MoU between the IHO and the Nippon Foundation,. The training is recognized at the Category "B" level by the IBSC. The Republic of Korea (ROK) also contributed 326,100 Euros to the Capacity Building Programme to sponsor one student on the Category "A" Hydrographic Master Programme at the University of Southern Mississippi and four students on a Category "B" Marine Geospatial Information Programme at the Korea Hydrographic and Oceanographic Agency (KHOA), Busan, ROK. In addition, some of the short courses in the 2017 CB Work Programme will be supported by the ROK's contribution to the CB programme.

FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)

9. Draft New IHO Publications S-8A and S-8B *Standards of Competence for Category "A" and Category "B" Nautical Cartographers* prepared by the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) were endorsed by the IRCC at its ninth meeting and submitted directly to the Member States for approval by the Secretariat according to the process agreed by the first session of the IHO Assembly. IRCC also approved clarifications in Editions 1.0.1 of the IHO Publication S-5A and S-5B *Standards of Competence for Category "A" and Category "B" Hydrographic Surveyors*. The development of comprehensive Guidelines for the Implementation of the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers, a companion document for S-5A, S-5B, S-8A and S-8B, were also noted by the IRCC.

Element 3.4 Capacity Building Assessment

10. During the reporting period, a technical assessment and advisory visit was made to Tuvalu by a team from the SWPHC, technical visits were made to Timor Leste and Cambodia by teams from the EAHC, a technical visit to Montenegro and Albania was made by the MBSHC, an advisory visit to Cabo

Verde was made by the EAtHC and a follow-up technical visit was conducted to Haiti by an expert team from the MACHC. The balance of scheduled technical visits are planned to be conducted by the end of the 2017.

11. The IRCC9 considered the benefits of having solid infrastructure in the IHO Secretariat to support and inform decisions of its Member States and the subordinate bodies of the Organization, in particular through databases, online services and GIS tools. The meeting also requested the IHO Secretariat to investigate the possibility of making the IHO GIS available to the Member States.

Element 3.5 Capacity Building Provision

12. At the time of the preparation of this report, one Maritime Safety Information (MSI) Course was delivered in the MACHC region. The remainder of the scheduled CB activities for 2017 are planned to be delivered by the end of the year.

Element 3.6 Coordination of Global Surveying and Charting

C-55 - Status of Hydrographic Surveying and Nautical Charting worldwide Database

13. The IRCC considered the impact of the work done by the IHO Secretariat to maintain publication C-55 - *Status of Hydrographic Surveying and Nautical Charting Worldwide*. As a result of work undertaken by officers seconded from Japan, C-55 is now generated from a GIS database application that is continuously updated as an online service accessed in the download section of the IHO website. During the reporting period, work has continued on developing the GIS database application to support C-55.

14. The IRCC considered Assembly Decision A-1/18 (PRO-5) and encouraged RHCs to consider using satellite derived bathymetry and risk assessment methodologies in uncharted or poorly charted areas in their respective regions as a way of developing survey priority areas as part of attracting donor funding.

WENDWG activities

15. The IRCC9 reviewed progress towards the full implementation of the WEND Principles, the guidance for the preparation and maintenance of INT Chart and ENC Schemes, the need to implement ENC scheming at the regional level, the challenges for coordinating INT Chart schemes and improving ENC coverage, in particular the establishment of consistent INT schemes in semi-closed basins. The Committee urged Regional Hydrographic Commissions to seek to resolve ENC overlaps in small scale usage bands which pose significant risks to navigation. The IRCC also endorsed a draft IHO Resolution for eliminating overlapping ENCs.

A Proposal for an IHO Resolution to Address Issues Related to the Existence of Overlapping ENC Data is provided at Annex-B.

16. The IRCC considered the work undertaken by both RENCs to reach maturity and stability and for the support provided to hydrographic offices and end-user service providers. It also noted the revised six-monthly updates to the ENC Data Flow Diagram maintained by the RENCs.

Maintenance of INT chart schemes and improvements of availability of the INT chart series

17. The IRCC9 considered the revised process for the management, review and monitoring of new INT Charts and endorsed a proposal to amend Section 100 of IHO Publication S-11 - Part A Ed. 3.0.0 - *Guidance for the Preparation and Maintenance of International (INT) Chart Schemes* and to revoke IHO Resolution 1/1992 on the monitoring of INT charts.

As a consequence, a Proposal to amend Section 100 of IHO Publication S-11 - Part A Ed. 3.0.0 - Guidance for the Preparation and Maintenance of International (INT) Chart Schemes is provided as

part of the HSSC report to the Council, and a Proposal to revoke IHO Resolution 1/1992 is provided at Annex C of this Report.

Element 3.7 Maritime Safety Information

18. The IRCC9 was informed of the MSI training courses led by the WWNWS-SC and sponsored by the CBSC. The need to identify and prepare trainers to progress the establishment of MSI infrastructures in a significant number of coastal States was also highlighted. RHC Chairs were invited to engage with their NAVAREA Coordinators to encourage them to participate in courses in which include students from their NAVAREA, so as to provide a regional input and to engage and make contact with the students from their NAVAREA.

Element 3.8 Ocean Mapping Programme

Project Seabed 2030

19. At the High-Level UN Ocean Conference, held in June 2017 in New York, USA, the Chairman of the Nippon Foundation announced that the Nippon Foundation is planning to increase its involvement with the IHO-IOC General Bathymetric Chart of the Oceans (GEBCO) programme and is considering contributing US\$18.5M over ten years to support the specific goal of comprehensively mapping all of the seafloor by 2030. This initiative, to be known as "Project Seabed 2030", is an outcome of the GEBCO Forum for Future Ocean Floor Mapping held in June 2016 in Monaco. The aim for Seabed 2030 is to compile all available and newly collected bathymetric data into a high quality, high resolution digital model of the ocean floor, to identify the gaps in data coverage and to promote international efforts to collect new data.

20. The intention is to build upon the infrastructure and capabilities of existing GEBCO and IHO activities including the regional mapping programmes and the IHO Data Centre for Digital Bathymetry (IHO DCDB). Seabed 2030 will assist in bringing collected depth data together, will highlight the unmapped gaps, and help coordinate seabed mapping by working with the established ocean mapping community within academia, offshore industry and government. A particular initiative will be to work with the fishing industry to increase the amount of data from fishing vessels that operate worldwide as well as from recreational and merchant vessels. Seabed 2030 will also coordinate with the on-going IHO Crowd Sourced Bathymetry initiative. As is currently the case, the dedicated funding for Seabed 2030 will be administered by the Secretariat, as part of its existing role as the treasurer and the secretary to the GEBCO project.

21. IRCC, at its ninth meeting endorsed the withdrawal of IHO Publication B-7 *GEBCO Guidelines* proposed by the GEBCO Guiding Committee.

A Proposal for the withdrawal of the IHO Publication B-7 GEBCO Guidelines is provided in Annex-D.

Crowd Sourced Bathymetry

22. IRCC9 received a report from the CSBWG Chair on the status of the preparation of an IHO document on policy for trusted crowd sourced bathymetry (CSB), which aims to provide guidance on the collection and assessment of CSB data inclusion in the global bathymetric data set which is maintained in the IHO Data Centre for Digital Bathymetry (DCDB). A need was identified for continued liaison with other IHO bodies, as well as appropriate engagement with industry, mariners and HOs to progress the Guidance Document. The draft CSB Guidance Document is now available for review and comment from IHO Member States and relevant stakeholders. The draft guidance document on crowd-sourced bathymetry is available on the IHO website.

Element 3.9 Marine Spatial Data Infrastructures

23. The IRCC9 was informed on the development of the Concept Development Initiative - Defining

the Future of Marine Spatial Data Infrastructure (MSDI), developed by the Open Geospatial consortium (OGC) at the request of the MSDIWG and a newly prepared White Paper on MSDI. The IRCC also endorsed the revision of the IHO Publication C-17 *Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices*, working with a broad range of stakeholders and the newly produced white paper on MSDI which is available from the IHO website at www.iho.int → Committees & WG → MSDIWG → Body of Knowledge.

A Proposal for the adoption of a new edition 2.0.0 of the IHO Publication C-17 Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices is provided in Annex-E.

Actions required of the Council

24. The Council is invited to:

- a) **note** the report of the IRCC;
- b) **endorse** the proposal for increasing the capacity building support at the IHO Secretariat; (see Annex A)
- c) **endorse** the proposed IHO Resolution to address issues related to the existence of overlapping ENC data; (see Annex B)
- d) **endorse** the proposed revocation of IHO Resolution 1/1992 – Monitoring of INT Charts; (see Annex C)
- e) **endorse** the proposed withdrawal of IHO Publication B-7 *GEBCO Guidelines*; (see Annex D)
- f) **endorse** the proposed new edition 2.0.0 of IHO Publication C-17 *Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices*; (see Annex E)
- g) **instruct** the Secretary-General to seek the adoption of the proposals indicated in sub clauses 24 c to f by Member States through voting by correspondence;
- h) **invite** the Secretary-General to consider the feasibility of recruiting a new staff position in the Secretariat to provide additional management support for Capacity Building activities, subject to the availability of additional resources, and to report to the next session of the Council when submitting the budget estimates for 2019;
- i) **acknowledge** the work done by the IBSC in the development of the new Standards of Competence for Hydrographic Surveyors and Nautical Cartographers;
- j) **endorse** the need for a robust IT-based infrastructure in the IHO Secretariat to support and inform decisions of its Member States and the subordinated bodies, in particular with databases, online services and GIS tools;
- k) **acknowledge** the benefits of using satellite derived bathymetry for risk assessment including seeking funds from donor agencies;
- l) **acknowledge** the work already done by both RENCs to reach maturity and stability and for the support provided to hydrographic offices and end-user service providers;
- m) **take** any other action as it may be considered appropriate.

ANNEXES

IRCC PROPOSALS TO THE FIRST SESSION OF THE IHO COUNCIL

- ANNEX-A: Proposal for Increasing Administrative Support in the IHO Secretariat for the Capacity Building Programme
- ANNEX-B: Proposal for an IHO Resolution to Address Issues Related to the Existence of Overlapping ENC Data
- ANNEX-C: Proposal for the revocation of IHO Resolution 1/1992 – Monitoring of INT Charts (linked to the proposal by HSSC for Amendment to Section 100 of IHO Publication S-11 - Part A Ed. 3.0.0 - Guidance for the Preparation and Maintenance of International (INT) Chart Schemes)
- ANNEX-D: Proposal for the withdrawal of the IHO Publication B-7 GEBCO Guidelines
- ANNEX-E: Proposal for the adoption of a new edition 2.0.0 of the IHO Publication C-17 Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices

PROPOSAL FOR INCREASING ADMINISTRATIVE SUPPORT IN THE IHO SECRETARIAT
FOR THE CAPACITY BUILDING PROGRAMME

Submitted by:	IRCC Chair
Executive Summary:	The need for additional support from permanent Staff at the IHO Secretariat was recognized by the EIHC5 and A-1, following reports from the IHO Secretariat and from IHO subordinate bodies in successive meetings given the continuous increase in the levels of Capacity Building activities. This documents describes the key elements and requests the endorsement of the IHO Council for the appointment of one additional permanent Staff at the Secretariat.
Related Documents:	<ul style="list-style-type: none">a) Convention on the IHOb) IHO Strategic Plan (2017)c) IHO Capacity Building Strategyd) IHO Publication P-6 2014 Extraordinary I.H. Conference (EIHC5) Proceedingse) Doc. A.1/WP1/01 Report on the Work of the IHO Programme 1f) Doc. IRCC6-07C CBSC Reportg) Doc. IRCC7 Reporth) Doc. IRCC8 Reporti) Doc. draft IRCC9 list of actions and decisions
Related Projects:	

Introduction and Background

1. Article II of the Convention on the IHO as amended established the following objectives that depend directly on the IHO Capacity Building Strategy and related activities under the IRCC:

- a) To promote the use of hydrography for the safety of navigation and all other marine purposes and to raise global awareness of the importance of hydrography;
- b) To improve global coverage, availability and quality of hydrographic data, information, products and services and to facilitate access to such data, information, products and services;
- c) To improve global hydrographic capability, capacity, training, science and techniques;
- d) To establish and enhance the development of international standards for hydrographic data, information, products, services and techniques and to achieve the greatest possible uniformity in the use of these standards;
- e) To give authoritative and timely guidance on all hydrographic matters to States and international organizations;
- f) To facilitate coordination of hydrographic activities among the Member States; and
- g) To enhance cooperation on hydrographic activities among States on a regional basis.

2. The IHO Strategic Plan (2017) identifies the Strategic Direction N. 4.4 in strengthening the IHO capacity-building programme in order to better support the needs of Member States, especially those developing their capabilities from maritime safety information through surveying to nautical charting and marine spatial data infrastructures.

3. The activities related to Capacity Building have been growing steadily in the recent year. Table 1 shows the evolution of the requests for CB support and the delivery of trainings and technical visits. The figures related to trainings and technical visits is stable since it achieved a new level in 2012 but the resources, the complexity and the impact have grown.

Table 1 – Summary of the requests for CB support and the delivery of trainings and technical visits

Year	Submitted Requests	Delivered trainings	Delivered Technical Visits	N* Trainees	Resources needed	CBWP actual expenditures
2005	5	3	5	51	103 K	29 K
2006	6	5	25	84	82 K	74 K
2007	4	7	14	93	182 K	79 K
2008	13	10	23	92	325 K	101 K
2009	12	9	5	141	295 K	158 K
2010	10	9	8	109	320 K	181 K
2011	17	13,5	10	140	502 K	300 K
2012	30	22	11	227	516 K	311 K
2013	36	20	6	129	413 K	326 K
2014	27	24	8	154	687 K	636 K
2015	30	24	2	141	931 K	761 K
2016	34	22	8	180	975 K	764 K

4. Table 2 indicates the growth of submission and recognition of programmes and the participation of delegates from the submitting organizations at the IBSC meetings for the same period as Table 1. The decreased number of submission in 2017 was due to larger number of institutions requesting a one-year extension to adequate their programmes to the new Standards S-5A and S-5B.

Table 2 – Total of submissions and recognitions by the IBSC and the participation of delegates from submitting institutions to the IBSC meetings.

Year	Submitted	Recognized	Delegates
2005	2	1	2
2006	3	3	0
2007	6	4	3
2008	7	6	2
2009	9	7	5
2010	10	7	7
2011	8	8	5

Year	Submitted	Recognized	Delegates
2012	15	10	10
2013	16	11	14
2014	15	12	28
2015	10	3	6
2016	18	13	25
2017	7	7	10

5. During EIHC5 in 2014 the Report on Programme 1 emphasized that since 2000, the number of IHO Member States had increased by 20%, the number of IHO publications by 35%, and the number of international organizations invited to attend the Conference by 15%. Yet the IHO budget had remained roughly constant in real terms and the number of permanent IHB staff had decreased by 10%.

6. Also during EIHC5, the Report on the Technical Capacity of the International Hydrographic Bureau stated that the "development of the Capacity Building (CB) programme has benefited from significant additional voluntary contributions from Member States, through the Nippon Foundation of Japan since 2004, and the Republic of Korea, since 2006. This has resulted in a steady increase in CB activities and a resultant increase in administration (see graph in Appendix 1). To assist in meeting the increase in administration and management, the CB Sub-Committee approved at its 11th meeting (2013) the allocation of up to 13% of the CB Funds (up to a limit of 40,000 Euros) to cover administrative tasks and project management. This provision has enabled the IHB to employ a temporary part-time administrative assistant on a contractual basis to provide assistance with the administration of the CB programme". The Conference noted the Report in its Decision No. 2.

7. During IRCC6 (2014), the CBSC Chair reported that the "most remarkable improvement for the administrative work was the contribution from the CB Assistant at the IHO Secretariat. Without the enduring support of a designated person the growing amount of CB projects and the further development of the IHO CB would not be manageable. An assigned CB Assistant at the IHB is considered essential for increasing CB activities".

8. The contract for the CB Assistant was established from mid-2013 until the end of 2014, discontinued due to administrative reasons. In 2015 a permanent Staff of the Secretariat was assigned part-time to support the CB activities, in particular with the project management and financial execution. The remainder of the CB Activities, in particular those to further develop CB tools and the CB Management System remain with Assistant Director for Cooperation and Capacity Building (ADCC), to assess reports and documents, to identify opportunities for cooperation, to provide guidance to training institutions, to mentor developing coastal States, to support the revision of IHO publications and to provide strategic advice to the Secretary-General and Directors.

9. During IRCC7 (2015), the IRCC noted the potential impact caused by the existing resource limitations of the IHO Secretariat to support the administration of the CB programme (Decision IRCC7/15), following the report of the CBSC Chair. The IRCC also noted the potential impact caused by the existing resource limitations of the IHO Secretariat to support the administration of IBSC activities (Decision IRCC7/21).

10. At IRCC8 (2016), the CBSC Chair "acknowledged that the IHO Secretariat had improved its administrative support to CB since IRCC7 by reallocating resources within the IHO Staff, but that these options are limited and that the secretarial support for the Capacity Building activities is still insufficient". The meeting considered the importance of providing appropriate level of support to the

Capacity Building activities and agreed that the Secretariat should seek to increase secretarial support to the CB Activities and the CBWP (Action IRCC8/10). The same concern was expressed by the IBSC Chair regarding the need for appropriate support for the growing level of activities.

11. The 1st Session of the IHO (2017) considered the report from the IHO Secretariat on Programme 1 and clearly stated that the "workload of the President, Directors and Assistant Directors remained at a very high tempo throughout the reporting period. This has been caused by a combination of increases in administrative and reporting requirements, greater levels of liaison with other international organizations and stakeholder groups, together with the already significant number of meetings and visits involving the Secretariat Staff. As a result, the senior staff are fully stretched."

12. The Report also identified the need for additional permanent Staff at the IHO Secretariat in Paragraph 80: "The ability of the Secretariat to provide full administrative support to the IHO Capacity Building Programme and to the International Board on Standards of Competence (IBSC) has been raised consistently by the relevant bodies and the provision of additional staff has been endorsed in principle by the IRCC. The recruitment of an experienced administrative assistant to support the clerical, reporting and administrative aspects of the CB and IBSC tasks is warranted".

13. IRCC9 (2017) identified that the present level of support from the IHO Secretariat puts at risk the execution of the IHO Capacity Building Programme. The CBSC, the IBSC and the RHCs (Chair and CB Coordinators) depend on the direct support provided by the IHO Secretariat with increasing level of activities. The meeting endorsed the need of an urgent expansion of the IHO Secretariat support to CB-related activities and to request to the Council at its 1st Session to task the Secretary-General to ensure that the appropriate staff resources are provided to the CB-related activities and tasked the IRCC Chair to request to the Council to task the Secretary-General to urgently establish and recruit to a position at the IHO Secretariat to provide additional secretariat support for Capacity Building.

Analysis

14. The insufficient support for the Capacity Building activities has put the Capacity Builders under increasing strain and a number of IHO Work Programme tasks are directly impacted. The following tasks of the 2017 IHO Work Programme (and similar tasks in previous annual work programmes) have been impacted:

- a) Task 1.1.5: nothing significant was done with FIG.
- b) Task 1.1.10.2: minimal contact maintained with ICA Commission on SDI and Standards and no understanding was gained on how to establish cooperation with the MSDIWG.
- c) Task 1.1.12.5: the fruitful cooperation with the IMO has disappeared and not enough effort was done to regain terrain.
- d) Task 3.0.2.2: not enough time is devoted to support the implementation of IRCC Work Programme.
- e) Task 3.1.5: not enough time is devoted to support the MACHC CB Coordinator and the regional needs.
- f) Task 3.1.14: not enough time is devoted to support the SWPHC CB Coordinator and the regional needs.
- g) Task 3.2.3: no time is devoted to support the MACHC coastal to comply with SOLAS V.
- h) Task 3.2.3.2: no time is devoted to attract the MACHC coastal States to join the IHO.
- i) Task 3.2.10: no time is devoted to attract the SEPHC coastal States to join the IHO.
- j) Task 3.3.1.3: not enough time is devoted to support the execution of the CBSC Action List.

- k) Task 3.3.2.1: not enough time is devoted to the development of a robust CB Management System.
- l) Task 3.3.5.1: no support or advice is given to the CBSC Members to allow them to foster the sharing of lessons learned and to help RHCs to develop best practices.
- m) Task 3.3.6.1: very limited support or advice is given to the CBSC Members to allow them to follow-up the CB activities and initiatives. No assessment of the CB Reports is conducted at the Secretariat. Web pages are not properly updated. Statistics on CB activities are not properly done.
- n) Task 3.3.6.2: very primitive databases were developed for trainees, trainers and consultants and they are not maintained. The previous work to input data was not validated to allow the use.
- o) Task 3.3.7.2: very limited support is provided to the IBSC to support the implementation of the IBSC Work Programme. The pre-assessment of the submissions are not done appropriately by the Secretary.
- p) Task 3.3.8: very limited guidance is provided to training institutions. Annual reports to the IBSC are not assessed by the Secretary.
- q) Task 3.3.9: in the past 5 years all the efforts were devoted to the development of S-5A, S-5B, S-8A and S-8B and publications C-6 and C-47 are outdated. Pending work to development a new format for C-47.
- r) Task 3.5.3: very limited support provided to the development and delivery of new Hydrographic and Nautical Cartography Programs, including the establishment of new Hydrographic Schools where that regional capacity does not exist.
- s) Task 3.6.1: C-55 has been further developed but there is not enough assessment of the status at individual coastal States to allow the provision of feedback.

15. The increase in the workload in recent years was partially compensated by the assignment of a part-time Staff that efficiently coordinates the activities with Project Leaders and executes the tasks assigned to the Secretariat under the supervision of senior Staff. However, the Staff is not available for all the other tasks related to Capacity Building.

Conclusion

16. It is unlikely that the current trend of increasing activities at the IHO at all levels the IHO Secretariat will be able to increase the support to the Capacity Building activities. Additionally, the need for permanent Staff able to provide continuity in the Secretariat with changes in the positions of the Directors and Assistant Directors, to be able to communicate with Capacity Builders in a multi-cultural environment and to provide management support for different aspects of demands. This situation was recognized by the 1st Session of the IHO Assembly as stated in Paragraphs 11 and 12 above.

17. Attention is needed to fulfilling the following needs related to Capacity Building, affecting many bodies of the IHO:

- a) Development of the CB Management System and its integration with the IHO systems (GIS, CIS, document system)
- b) Validation of the Student and Trainer Databases
- c) Processing of the submissions and requests related to the CB Procedures
- d) Provision of guidance to the CB Project Leaders beyond the administrative procedures
- e) Provision of base knowledge available in the Secretariat to Technical Visit Team Leaders

- f) Mentoring to CB Coordinators
- g) Development and maintenance of the CB Publications
- h) Development and maintenance of the CB Procedures
- i) Assessment of the reports from the CB Activities
- j) Development and maintenance of the CB pages at the IHO website
- k) Development of best practices and questions and answers guide
- l) Collation of performance indicators and statistics
- m) Assessment of the impact of the Capacity Building activities
- n) Liaison with CB project partners from other organizations
- o) Cooperation with donor agencies
- p) Support for management of projects at larger scale
- q) Provision of guidance for institutions in the development of education and training programmes
- r) Provision of support to the IBSC in the annual recognition process and revision of the standards
- s) Other clerical support in CB execution

18. The appointment of an additional administrative assistant at an appropriate level can release senior staff members to dedicate to strategic thinking instead of executing routine and daily bureaucratic tasks.

Recommendations

19. IRCC recommends the IHO Council to acknowledge the strategic importance of Capacity Building for the Objectives of the IHO, to acknowledge the increasing level of Capacity Building activities, to recognize the risks associated with the lack of appropriate support to Capacity Building activities, to endorse the need for additional management support at the IHO Secretariat for Capacity Building activities and to invite the Secretary-General to secure resources in the IHO Work Programme to allow the appointment of a permanent Staff Member to support Capacity Building activities.

Justification and Impact

20. The appointment of a permanent Staff at the IHO Secretariat has a financial impact on the IHO budget, which could be acceptable compared with the benefits that will be gained in moving the IHO Capacity Building Programme forward. Given the strategic importance of Capacity Building for the IHO, as reported in Paragraphs 1 and 2, the required resource can be made available by recruiting new Member State(s) to the IHO. Taking into account the likelihood of new member States which could join the IHO in the (near) future, the availability of the required financial resources to recruit a permanent Staff are likely.

Actions Required of the Council

21. The Council is invited to:
- a) **Note** the report;
 - b) **Acknowledge** the strategic importance of Capacity Building for the Objectives of the IHO;
 - c) **Acknowledge** the increasing level of Capacity Building activities;

- d) **Recognize** the risks associated with the lack of appropriate support to Capacity Building activities;
- e) **Endorse** the need for additional management support at the IHO Secretariat for Capacity Building activities;
- f) **invite** the Secretary-General to consider the feasibility of recruiting a new staff position in the Secretariat to provide additional management support for Capacity Building activities, subject to the availability of additional resources, and to report to the next session of the Council when submitting the budget estimates for 2019; and
- g) **Take** any other actions as appropriate.

PROPOSAL FOR AN IHO RESOLUTION TO ADDRESS ISSUES RELATED TO THE
EXISTENCE OF OVERLAPPING ENC DATA

<i>Submitted by:</i>	IRCC Chair
<i>Executive Summary:</i>	Following Action IRCC8/14, and endorsement at IRCC-9, this paper provides a proposal from the IRCC for an IHO Resolution to address issues related to the existence of overlapping ENC data.
<i>Related Documents</i>	IRCC8-07D, IRCC8 Report, List of Actions, List of Decisions IHO Resolution 1/1997 as amended - WEND Principles – Guidelines for the Implementation of the WEND Principles NCSR 4/27/5 – Report on monitoring ECDIS issues by the IHO IRCC9-07D3 – Draft IHO Resolution to address issues related to the existence of overlapping ENC data
<i>Related Projects</i>	New Ed. 3.0.0 of S-11 Part – <i>Guidance for the Preparation and Maintenance of International (INT) Chart and ENC Schemes</i>

Introduction and Background

1. The 8th meeting of the IRCC (IRCC-8) took place in Abu Dhabi, UAE, from 29 to 31 May 2016 and noted with concern several issues related to ENC coverage including the fact that little progress had been made in resolving the continuing existence of overlapping ENC data in some areas of the world.

2. The following actions were decided:

N°	Action	Responsible	Deadline
IRCC8/13	work to reduce overlaps by applying the WEND Principles in defining approved ENC schemes	RHC Chairs	Permanent
IRCC8/14	draft an IHO Resolution to address the overlapping issues and report to the IRCC	WENDWG	IRCC9

3. In support of Action IRCC8/13, the WENDWG continues to monitor the evolution of ENC overlaps by charting region as a standing agenda item, with the kind support provided by the RENCs and the UKHO. In addition, it is worth noting that Ed. 3.0.0 of S-11 Part A includes, now, a section providing guidance for the preparation and maintenance of ENC schemes. These actions are consistent with each other and complementary.

4. At its 7th meeting, the WENDWG drafted a proposed Resolution developed from the existing Guidelines for the Implementation the WEND Principles, on the lessons learned from ECDIS tests using different scenarios (ENC in same usage bands, ENC in different usage band but having the same compilation scale), and on the work already done by the WENDWG at its 6th meeting. Concerns raised in Doc. NCSR 4/27/5 (sections 16 and 17 in particular) were also noted and the WENDWG confirmed the need to reinforce the full implementation of the WEND Principles, with an IHO Resolution. Key points in relation to this matter were highlighted in the IRCC Chair’s report to the first Assembly.

5. At its 9th meeting, the IRCC endorsed the proposal by the WENDWG for a new IHO Resolution aimed at eliminating overlapping ENC data in areas of demonstrable risk to safety of navigation (See Decision IRCC9/19 and Action IRCC9/16). This proposal is provided in Attachment-1 to Annex-B.

Actions required of the Council

6. The Council is invited to:

- a) Endorse the proposed IHO Resolution in Appendix 1, with a view to submitting an agreed version to the IHO Member States for approval;
- b) Consider other proposed actions as appropriate.

PROPOSAL FOR AN IHO RESOLUTION ON THE ELIMINATION OF OVERLAPPING ENC DATA IN AREAS OF DEMONSTRABLE RISK TO THE SAFETY OF NAVIGATION

Submitted by: IRCC

- References:
- A: IHO Resolution 1/1997 as amended – *WEND Principles* – including its Annex - *Guidance for the Establishment of ENC Production Boundaries - Guidelines for the Implementation of the WEND Principles*.
 - B S-11 Ed. 3.0.0 - *Guidance for the Preparation and Maintenance of International (INT) Chart and ENC Schemes and Catalogues of INT Charts and ENCs* (currently in the approval process after endorsement at HSSC-8).

PROPOSAL: To adopt IHO Resolution **xx/2017** – *Elimination of overlapping ENC data in areas of demonstrable risk to the safety of navigation.*

EXPLANATORY NOTE:

At its 8th meeting, IRCC tasked the WENDWG to draft an IHO Resolution addressing issues related to overlapping ENC data. The proposed IHO Resolution is the result of Action WENDWG6/05 as agreed at the 6th meeting of the WENDWG (WENDWG-6). It also takes into account existing references and the new Ed. 3.0.0 of S-11 Part A - *Guidance for the Preparation and Maintenance of International (INT) Chart and ENC Schemes*.

It is proposed that the relevant section of the existing *Guidelines for the Implementation of the WEND Principles* related to overlapping issues, is incorporated directly in the proposed IHO Resolution, without any change, in order to reinforce its important role. One of the main reason to do so, is that this section has already been approved by IHO Member States (IHO CL 40/2014 dated 26 May).

This draft proposal in attachment takes also into account the recommendations made at WENDWG-6 as follows (Extract of the minutes of WENDWG-6):

"One of the main objectives of the WENDWG is to monitor the application of the WEND Principles by the Hydrographic Offices and the Regional Hydrographic Commissions (RHCs). ... Yet, for various reasons, there remain numerous cases of overlapping ENCs, which is contrary to the ENC production principles established by the IHO. Based on the analysis provided by the UKHO and the RENCs, it was agreed that the situation is not improving very much.

While the research study led by Singapore in the Malacca Strait is expected, IC-ENC provided a very comprehensive report on the unpredictable behaviour of ECDIS in situations where overlapping data occurs, for different scenarios.

CIRM provided very useful comments on the possible existing ENC selection criteria implemented in ECDIS. He also stated that manufacturers would stand ready to implement a hierarchy of tests if the IHO was in a position to propose selection criteria (CATZOC, waters under the jurisdiction of the ENC Producer, compilation scale, more recent survey date, publication date, etc.). But this is obviously not possible at the moment and it is likely that the selection is made...randomly! He also confirmed that HO's cartographers are the right people to make cartographic choices, not the industry.

PRIMAR reported that for budget reasons, it is likely that the mariners do not face so many cases of overlapping as they buy only one ENC at the appropriate scale for the voyage. However, the RENCs cannot deny the sale of these overlapping cells. So the US wondered whether the problem was real or not, and if it was, what could be achieved by the WENDWG if not the monitoring only?

As decided at WENDWG-5, South Africa confirmed that the WEND Principles together with the Guidelines did not need to be amended, as there will be no effect at all if they were, but they needed to be applied even enforced, notably through the definition of approved-ENC schemes by RHCs in their respective Charting Regions.

Considering that the use of IMO arbitration was the absolute last option, as indicated in the Guidelines, the Chair of the IC-ENC Steering Committee suggested a pragmatic approach taking into account all the complementary tools available at the IHO level and as a first stage, to consolidate the results of the IC-ENC overlapping study seeking the views of OEMs, the ENCWG and the NCWG. A full set of actions was decided accordingly.

Post meeting note: An S-57 Encoding Bulletin, regarding the "same compilation scale, different usage band" scenario, was subsequently issued by the ENCWG."

[Proposed] **IHO Resolution xx/2017 – Elimination of overlapping ENC data in areas of demonstrable risk to the safety of navigation**

Elimination of overlapping ENC data in areas of demonstrable risk to the safety of navigation	xx/2017	IHO CL xx/2017 (as endorsed at IRCC9 and C-1)	
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1. It has been reported that overlapping ENC data, when used in ECDIS equipment, may lead to unpredictable behaviour in at least the following cases:
 - overlapping data occurring in the same usage band (navigational purpose code);
 - overlapping data occurring in ENC cells in different usage bands (navigational purpose codes) but using the same compilation scale.
2. Hydrographic Offices, ENC Producers, and Regional Hydrographic Commissions should take appropriate measures to eliminate all overlapping ENC data, particularly in areas of demonstrable risk to the safety of navigation.
3. While RENCs and End-User Service Providers may develop certain distribution policies to help prevent such overlapping data from passing through the ENC distribution chain, the safety of mariners at sea should not rely on these mechanisms alone, as if they were the primary solution.
4. In addition to the existing procedures related to overlapping ENC data described in:
 - IHO Resolution 1/1997 as amended (*WEND Principles*) and its Annex (*Guidance for the Establishment of ENC Production Boundaries*);
 - the *Guidelines for the Implementation of the WEND Principles*, as endorsed by the 11th WEND Committee Meeting in 2008 and amended in 2014;
 - S-11 Ed. 3.0.0 - *Guidance for the Preparation and Maintenance of International (INT) Chart and ENC Schemes and Catalogues of INT Charts and ENCs*; and
 - S-57 - *IHO Transfer Standard for Digital Hydrographic Data* -, Appendix B.1, Annex A - *Use of the Object Catalogue for ENC* (Ed. 4.0.0, June 2014) - clause 2.1.8;

Hydrographic Offices, ENC Producers, and Regional Hydrographic Commissions should seek to:

- identify overlapping ENC data in all areas of significance to navigational safety within their areas of production or control;
 - prevent the increase of any such cases;
 - resolve all of those cases where a demonstrable risk to the safety of navigation exists, through discussion and negotiation between the relevant ENC producers, as soon as possible, and at least within one year of any such overlapping ENC data being reported or identified.
5. Notwithstanding the responsibilities of the ENC Producer Member States involved, to take early action to notify the mariner of possible risks to the safety of navigation, in any case where the elimination of overlapping ENC data cannot be resolved and its continued existence presents a demonstrable risk to the safety of navigation, the procedures described in section 1.7 of the *Guidelines for the Implementation of the WEND Principles* should be applied. The timescale to resolve should be within one year of the matter coming to the attention of the ENC Producer Member States involved. Section 1.7 states:

"1.7. The S-57 Standard allows minimal overlap of ENC data within usage bands. ECDIS systems will operate unpredictably in areas where significant overlapping ENC coverage is present, raising a potential navigational risk to end-users. Where overlapping coverage exists the Producer Member States should recognize their responsibility and take the necessary steps to resolve the situation. To ensure that overlapping ENC data coverage is resolved to the satisfaction of the Regional Hydrographic Commission (RHC), the following procedures should be undertaken in sequence until there is satisfactory resolution:

1.7.1 The RHC will identify and assess ENC coverage within their area of

responsibility and highlight those areas where there are navigationally significant differences between the overlapping ENCs. The assessment of what may be navigationally significant should be guided by the best practices in this regard, acknowledged and approved by the IRCC. The RHC may seek the assistance of a Regional ENC Coordination Centre (RENC) to assist in development of this assessment and should take a proactive approach with the ENC Producer Member States, to resolve overlap issues within the region.

1.7.2 The RHC will keep the IRCC Chair and the IHO Secretariat informed, through the annual reporting process, about overlaps in ENC coverage, their associated risks and related action(s) taken by the coastal States and/or the Producer Member State. Appropriate action by the IHO Secretariat should be initiated to inform the International Maritime Organization of the situation with details of the desired actions to be taken by the Government(s) of the involved coastal State(s) and the risks associated with inaction.

1.7.3 Where urgent action is required to alert mariners to navigationally significant overlap issues then the RHC, through the concerned Producer Member States, should initiate promulgation of appropriate warnings directly with the regional NAVAREA coordinator and other local navigational warning protocols, while keeping the IRCC Chair and IHO Secretariat informed."

PROPOSAL FOR THE REVOCATION OF IHO RESOLUTION 1/1992

<i>Submitted by:</i>	IRCC Chair
<i>Executive Summary:</i>	<p>IHO Resolution 1/1992 on the monitoring of INT charts is under review by the IRCC as a result of Decision 2.4 of EIHC-5. Subsequently, a procedure incorporating a <i>basic check-list for reviewing INT charts</i> developed by the NCWG and Regional INT Charts Coordinators was agreed at IRCC-7, and implemented on a trial basis.</p> <p>HSSC is now submitting to the Council (C-1) an amendment aiming to incorporate the new procedures in Section 100 of IHO Publication S-11 - Part A - <i>Guidance for the Preparation and Maintenance of International (INT) Chart Schemes</i>.</p> <p>As a result, this submission proposes to revoke IHO Resolution 1/1992 as being obsolete, as endorsed at IRCC-9.</p>
<i>Related Documents</i>	<p>IRCC7-06B – Management and Monitoring of the IHO INT Chart Collection.</p> <p>NCWG2-10.2A – Review of New INT Charts by INT Charts Coordinators.</p> <p>A.1/G/02Rev1 (Annex B to PRO#9) – Revise IHO Publication M-3 (for IHO Resolution 1/1992)</p> <p>A-1, Decision 5.m – Revocation of IHO Resolution 2/1982 as amended.</p> <p>IRCC9-11B – Monitoring of INT Charts.</p> <p>C1-3.1 - HSSC Report to the Council – Revision to IHO Standards: ... Draft Edition 3.1.0 of S-11 Part A...</p>
<i>Related Projects</i>	

Introduction and Background

1. The IHO Resolution 1/1992 – *Monitoring of INT Charts* – states:
"It is resolved that the IHB will endeavour to examine all newly printed or adopted INT Charts, and to provide the concerned Member States with comments on any points of non-compliance with the Chart Specifications of the IHO for INT Charts, in order that a close conformity be achieved in future products."
2. In 2014, EIHC-5 considered the IHO Report on the Technical Capacity and Available Resources at the IHB. This led to Decision No 2.4:
"The Conference noted the Report on the Technical Capacity of the International Hydrographic Bureau and agreed to task IRCC to review arrangements for the collection and examination of INT Charts currently regulated by ... IHO Resolution 1/1992 (Monitoring of INT Charts) and to consider the need to amend or develop relevant IHO Resolutions, taking into account the comments from the Conference".
3. This issue was addressed at IRCC-7 (Decision IRCC7/3 refers), and in August 2015, a two-year trial procedure for the review of new INT charts, to be implemented by the relevant Regional INT Chart Coordinators, was decided (see [IHO CL 64/2015](#)). In order to support the work of Regional INT Chart Coordinators, a "*basic quality assurance check-list for review of INT charts*" was also prepared by the IHO Secretariat in liaison with the NCWG and the Regional INT Charts Coordinators.

4. In August 2016, the INT Chart Coordinators were invited by the IHO Secretariat to provide their feedback on this new procedure by the end of March 2017, in order to provide recommendations on the way forward at IRCC-9, after the two years of trials.

Analysis

5. The following Regional INT Charts Coordinators provided their feedback: Australia (for Region L (SWPHC)), Brazil (for Region C1 (SWAtHC)), Finland (for Region E (BSHC)), France (for Regions F (MBSHC) & G (EAtHC)), India (for Region J (NIOHC)), South Africa (for Region H) and UK (for Regions D (NSHC) and M (HCA)).

6. All the respondents reported that, in their regions, INT chart schemes were relatively stable so they have not been in a position to implement fully the new procedure. Despite this fact, they agreed that the *basic quality assurance check-list for review of INT charts* would be a very useful process to follow when receiving new charts. Several Coordinators provided useful amendments to the check-list. One Coordinator reported that the *basic quality assurance check-list for review of INT charts* was tested successfully for a real case.

Conclusion

7. Following the trial of the procedures since August 2015 and based on the feedback from Regional INT Charts Coordinators, it is proposed to standardize the procedures as endorsed at IRCC-9 (See Decision IRCC9/45 and Action IRCC9/46).

Recommendations

8. HSSC is submitting a separate paper (see HSSC Report to the Council) for endorsement by the Council, aiming to incorporate the new procedures as an additional item in Section 100 of IHO Publication S-11 - Part A Ed. 3.0.0 - *Guidance for the Preparation and Maintenance of International (INT) Chart Schemes*.

9. Following the revocation of IHO Resolution 2/1982 by the 1st Session of the IHO Assembly (see Decision 5.m), and considering that the IHO Resolution 1/1992 is now the only Resolution related to INT Charts, and its purpose will now be covered in other documents, it is recommended to revoke IHO Resolution 1/1992.

Justification and Impact

10. The new procedure can be recognized as the quality control mechanism to ensure that an INT chart can be accepted as "Produced" in the INT Web Chart Catalogue (S-11 - Part B). The procedure may also serve as an important qualifying capacity building step with regard to new IHO Member States producing their first INT charts.

11. There will be no significant impact on Regional INT Chart Coordinators, in terms of resource, due to the fact that INT charts schemes are now relatively stable in most charting regions. In recent years, very few new INT charts are produced each year.

Actions required of the Council

12. The Council is invited to:

- a) Endorse the proposal in paragraph 9 for IHO Resolution 1/1992 to be revoked;
- b) Consider any other actions as appropriate.

PROPOSAL FOR WITHDRAWAL OF IHO PUBLICATION B-7 GEBCO GUIDELINES

<i>Submitted by:</i>	IRCC Chair
<i>Executive Summary:</i>	<p>This paper proposes that IHO Publication B-7 be withdrawn, as endorsed at IRCC-9.</p> <p>IHO Publication B-7 – <i>GEBCO Guidelines</i> has been awaiting the completion of a review since 2012. Since the review was initiated Terms of Reference of the GEBCO Guiding Committee have been comprehensively revised and approved and IHO Publication B-11 has been published. It is considered these developments make B-7 redundant and therefore it should be withdrawn.</p>
<i>Related Documents</i>	<p>IRCC9 – Report, Decisions and Actions of IRCC9.</p> <p>IRCC8-07I – Report of GGC</p> <p>GGC ToRs</p> <p>IHO CL70/2015/Rev.1 dated 21 September 2015</p> <p>B-11 – GEBCO Cookbook</p> <p>IHO CL47/2012 dated 07 May 2012</p>
<i>Related Projects</i>	

Introduction and Background

1. A review and revision of IHO Publication B-7 – *GEBCO Guidelines* – was commenced by the IHO Secretariat in 2009; the publication was distributed to members of the GEBCO Guiding Committee (GGC) for consideration, comment and input. The partially completed publication was included as a meeting document at GGC31 in 2014, GGC32 in 2015 and GGC33 in 2016, where it was decided to propose its withdrawal.
2. During this period the Terms of Reference of the GGC were comprehensively revised and expanded with the amended version being adopted by the Intergovernmental Oceanographic Commission (IOC) of UNESCO on 22 June 2015 at its 28th Assembly and then subsequently by the IHO Member States on 11 September 2015 as announced in IHO CL70/2015/Rev.1. Over the same period work was completed on the creation of IHO Publication B-11 (IOC Manuals and Guides 63) – *The IHO-IOC GEBCO Cookbook* – whose subsequent adoption by IHO member States was announced in IHO CL47/2012 and approval by the IOC Executive Council in October 2012.

Analysis

3. The adoption and approval of the new GGC ToRs and the publication of B-11 has meant that the majority of material proposed to be included in the revised version of B-7 was already available and therefore the GGC considered that there was no longer a requirement to continue with the revision and updating of B-7, in fact it was considered more appropriate to withdraw the publication so as to avoid duplication of information and material, which would require additional resources to ensure its harmonization with B-11 and the GGC ToRs.
4. It was agreed by the GGC that a comprehensive check would be conducted to ensure any material in B-7 which was not already included in either B-11 or the GGC ToRs, and which was consider current and relevant, would be identified and subsequently included in either document as appropriate.

Conclusion

5. The withdrawal of B-7 will remove a long standing, but stalled, review from the GGC Work Plan and allow resources to be focused on the creation of improved GEBCO products and a revised GEBCO_Grid. At its ninth meeting, the IRCC endorsed the withdrawal of B-7 (See Decision IRCC9/36 and Action IRCC9/28).

Recommendations

6. Following the approval to withdraw B-7, the GGC should be instructed to ensure that all appropriate material is transferred to either B-11 or included as a proposed revision to the GGC ToRs.

Justification and Impact

7. There will be no significant impact on the IHO Secretariat and, once the review and transfer of material is completed, GGC resources can be directed towards achieving global bathymetric coverage and higher resolution grids, which are in demand by the numerous users of the current GEBCO Grid.

Actions required from the Council

8. The Council is invited to:
- a) Endorse the proposed withdrawal of IHO Publication B-7 – *GEBCO Guideline*;
 - b) Instruct the GGC to transfer any relevant material in B-7 to B-11 or to propose amendments to the GGC ToRs for subsequent submission to the IHO and IOC Member States for approval; and to
 - c) Consider any other actions as appropriate.

PROPOSAL FOR A NEW EDITION 2.0.0 OF THE IHO PUBLICATION C-17 - *SPATIAL DATA INFRASTRUCTURES "THE MARINE DIMENSION" - GUIDANCE FOR HYDROGRAPHIC OFFICES*

Submitted by:	IRCC Chair
Executive Summary:	Following endorsement at IRCC-9, this paper provides a proposal from the IRCC for a new edition 2.0.0 of IHO Publication C-17 <i>Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices</i> .
Related Documents:	j) CL 58/2015 k) CL 42/2016 l) CL 59/2016 m) IRCC9-07E2 n) IHO Resolution 2/2007 as amended o) IHO Strategic Plan 2017 p) Decision A-1/21
Related Projects:	

Introduction and Background

1. The Inter-Regional Coordination Committee (IRCC) at its seventh meeting in Mexico City in June 2015 (CL 58/2015) endorsed the Work Plan of the MSDIWG which included revising and extending the content of edition 1.1.0 of IHO Publication C-17 *Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices*. At its eighth meeting in Abu Dhabi in May 2016 (CL 42/2016), the IRCC tasked the IHO Secretariat to circulate the draft new edition 2.0.0 of C-17 seeking comments from Member States and other stakeholders, as required by the IHO Resolution 2/2007. Comments were reviewed by the MSDIWG and the draft new edition 2.0.0 was endorsed by IRCC at its ninth meeting in Paramaribo, Suriname, in June 2017.

Analysis

2. The IHO Secretariat circulated the draft new edition 2.0.0 of C-17 under cover of CL 59/2016 and the comments received were reviewed by the MSDWG8 (31 January to 2 February 2017). The comments received and the responses from the MSDIWG Chair are shown in *doc. IRCC9-07E2*.

3. The revised draft New Edition 2.0.0 of C-17 took into consideration the comments received and is now available under *Draft Publications for discussion* at:

www.iho.int → Standards & Publications → Download

Conclusion

4. At its ninth meeting the IRCC endorsed the revision process that had been followed by the MSDIWG in accordance with the IHO Resolution 2/2007 as amended (See Decision IRCC9/25 and Action IRCC9/17) and now seeks the endorsement of the Council to the draft New Edition 2.0.0 of the IHO Publication C-17 *Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices* and subject to this endorsement, the submission of the publication to the IHO Member States for approval.

Recommendations

5. The IRCC recommends the endorsement of the proposed new edition 2.0.0 of IHO Publication C-17 *Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices* and that the

Council encourages Member States to take advantage of the publication for the strengthening of the marine component of national spatial data infrastructures.

Justification and Impact

6. The proposed new edition 2.0.0 of IHO Publication C-17 *Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices* is aligned with Strategic Directions 2.5 and 4.4 of the IHO Strategic Plan 2017 and supports the implementation of the new IHO Resolution on Improving the Availability of Bathymetric Data Worldwide (Decision A-1/21 refers).

Actions Required of the Council

7. The Council is invited to:
- a) **Note** the report;
 - b) **Endorse** the proposed new edition 2.0.0 of IHO Publication C-17 *Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices*;
 - c) **Encourage** Member States to use IHO Publication C-17 *Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices* for the strengthening of the marine component of their national spatial data infrastructures; and
 - d) **Take** any other actions as appropriate.

Appendix 1 - Member States' Responses to IHO CL 59/2016 and Comments from the Marine Spatial Data Infrastructures Working Group

**MEMBER STATES' RESPONSES TO IHO CL 59/2016 AND COMMENTS FROM THE MARINE
SPATIAL DATA INFRASTRUCTURES WORKING GROUP**

Note: responses from the MSDIWG are given along the text in *italics*

COMMENTS ON CL 59/2016

BELGIUM

Thank you for the interesting document. The Flemish Hydrography has no remarks on the document.

Response from the MSDIWG Chair: I thank Belgium for the support.

CHILE

We have given close attention to the draft version of the new edition of the IHO Publication C-17, which has also been examined by the national agency in charge of SDI matters.

We acknowledge the work conducted by the MSDIWG and we consider that the new edition provides a useful guiding tool, having in mind a collaborative and integrated work and being in line with the principles set by the UN-GGIM agenda.

We consider that the content of the publication is at the level of recommendations offering a guide to manage the marine component of SDI, without the intention of imposing any mandatory regulation, as many details may fall under the exclusive national responsibilities.

Response from the MSDIWG Chair: I thank Chile for the support.

CROATIA

Please find below Croatian comments related to IHO CL 59/2016.

"Croatia welcomes the IHO (MSDIWG) efforts to create the draft new edition 2.0.0 of IHO publication C-17 Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices.

The presented draft of IHO publication C-17 is an excellent guide for national hydrographic offices to fully understand the MSDI concept and implement it along its own business processes.

Croatia has no additional comments on the draft new edition 2.0.0 of IHO publication C-17 but uses this occasion to provide brief information regarding the MSDI development in Croatia.

In Croatia, the State Geodetic Administration (SGA) is the Croatian NSDI National Contact Point in the implementation of the INSPIRE Directive. In the Register of subjects 41 NSDI subjects are reported and in the Register of spatial data sources 212 sources of spatial data are reported.

Hydrographic Institute of the Republic of Croatia (HHI) is also reported as subject in the Register of NDSI subjects and reported seven spatial data sources in the Register of spatial data sources."

Response from the MSDIWG Chair: I thank Croatia for the support and for providing the brief information about the national infrastructure.

CUBA

Cuba has no comments to the CL 59/2016 Call for Comments on Draft New Edition 2.0.0 of IHO Publication C-17 - Spatial Data Infrastructures "The Marine Dimension" - Guidance for Hydrographic Offices.

Response from the MSDIWG Chair: noted.

FRANCE

In response to the circular letter in reference, I have the honor to inform you that France propose to include the content of paragraph 6 "data duplication and conflict" in paragraph 7 "why is MSDI important to IHO?". In effect the lines in paragraph 6 explain why a MSDI is important to HOs.

Response from the MSDIWG Chair: I thank France for the suggestion but we consider that a separate paragraph highlights this important content.

MEXICO

Following the instructions of the General Directorate of Oceanography, Hydrography and Meteorology and referring to the Circular Letter N° 59/2016 dated 28th October 2016, concerning the Call for comments on draft new edition 2.0.0 of IHO Publication C-17 - *Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices*, we inform you that, after having reviewed the publication, it was determined that it is very well structured and clear; for that reason we have neither comments nor any proposal of amendments.

Response from the MSDIWG Chair: I thank Mexico for the support.

NETHERLANDS

The Netherlands is pleased with the new version 2.0.0 of document IHO C-17. It is comprehensive and well written. We wish to compliment the MSDIWG for this achievement. There are some aspects of SDI that could be given more attention in the next version:

1. Paragraph 9.1 is essential. SDI does not just cost resources, it also provides many advantages to HOs. The most important one is missing: being part of SDI allows for easier access to spatial data sets of other parties that HOs need but not produce themselves. Not having to obtain a copy anymore is an important efficiency gain as well as an investment in the quality of the acquisition process.
2. Rightfully, there is attention for the developments within the framework of UN-GGIM. A reference to the UN-GGIM Statement of Shared Guiding Principles would be appropriate.
3. Data ingestion from third parties, such as crowd-sourced bathymetry, is, in our view, part of an SDI too. This is demonstrated by e.g. the EMODNet Data Ingestion project. The discussion on the role third party data can play for the SDI participants deserves its own Section.

I hope that the MSDI WG finds these comments helpful.

Response from the MSDIWG Chair: I thank the Netherlands for the support. The comment on the access to spatial data is indeed implicit in the actual text. A reference to the UN-GGIM Statement of Shared Guiding Principles was added. Expanding the content for third party data will be considered in a future revision.

PERU

I am pleased to address to you to greet you and, at the same time, to refer to your Circular Letter N° 59/2016 dated 28 October 2016, in which you ask for comments from Member States on Draft new Edition 2.0.0 of IHO Publication C-17 - *Spatial Data Infrastructures "The Marine Dimension"*.

To this respect, I am informing you that this Directorate has evaluated the above mentioned document, and we are in favour of the development of such a tool, outlining both the improvement of fundamentals and steps to implement a Marine Spatial Data Infrastructure (MSDI), and the roles of an Hydrographic Office (HO), for a better management of this tool in the Hydrographic Offices.

I take this opportunity to renew my personal esteem.

Response from the MSDIWG Chair: I thank Peru for the support.

SPAIN

As a reply to the IHO Circular Letter No. 59/2016, I am pleased to inform you that this Hydrographic Institute of the Navy agrees with the Project of new Edition 2.0.0 of the IHO Publication C-17 - *Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices*, and has no comments to this respect.

Response from the MSDIWG Chair: noted.

UNITED KINGDOM

With regards to the above Circular Letter, UK considers the draft of Edition 2.0.0 of C-17 to be a significant improvement upon the previous edition. It is far more comprehensive, and easier to read. We appreciate the opportunity to comment and hope that our comments attached will contribute to further improvements.

UK comments on Draft New Edition 2.0.0 of C-17

Principles:

1. Under 'IHO Policy' on page 4, the purpose of C-17 is described as 'a definitive procedural guide to establishing the role of the national hydrographic authority in MSDI'. Of the 25 pages of the main body, 15 pages are describing MSDI principles to justify reasons for needing it, with only a few pages on how to implement. Greater focus on how to establish an MSDI would be of value.
2. For SDI to be effective, emphasis must be placed on the availability and accessibility of quality geospatial data from authoritative sources. C-17 has insufficient emphasis on the importance of access to data of defined quality.

Fundamental errors:

3. Section 2 states that 'Spatial data is usually stored as coordinates and topology', but it must also include some coding or attributes to say what it is.
4. Section 3 states that 'Ship-borne survey will over time become the capture platform of last resort'. Although other platforms exist, to achieve high quality bathymetric survey there is no intention to move away from ship-borne equipment.
5. Section 8.6 incorrectly states that IALA is 'establishing the maritime digital infrastructure by developing a common data structure using S-100 ...'.

General comments:

6. The structure of sections on how to implement ('MSDI involvement') are not clear. Section 9.3 is called 'Step by step approach to MSDI involvement' but is little more than a list of 18 one-liners. There is also then section 11 called 'Steps required to be taken by HOs to make MSDI happen', with 10 steps which overlap with the previous 18.
7. Inconsistent use of SDI and MSDI which is confusing. Page 18 even refers to the marine component of an MSDI which is either tautology, or suggesting that an MSDI is more than marine information.

8. The focus on training is not specific to MSDI. Need for competence in MSDI is no different to the need for competence in any technology. The introduction of a 5th pillar is unnecessary.

Unsubstantiated comments and opinions:

Values quoted should cite references. Opinion is not appropriate in such a guide.

9. Section 3 - 'value of geospatial data has fallen by approximately 80% in the last 5 years';
10. Section 4 - '5 million potential users';
11. Section 8.3 - 'We have arrived at a tipping point heralding a new era ...'
12. Section 13 - 'no doubt that there has never been a more urgent need for a paradigm shift in how we inhabit our planet'.
13. Section 13 - 'the geospatial industry, as we know it, has reached an existential moment.'
14. Section 2.1.5 states that there is a lack of understanding of MSDI in the HO community. Although this may be true, it is not necessary to state it within such a document.
15. Section 9 implies that HOs are not good at articulating the case for MSDI. Although this may be true, it need not be stated in such a document, and in any event it could be argued that as a supplier of the data for MSDI, it is not the role of the HO to champion the need.

Added value:

16. It might be helpful to refer to the Copernicus Programme. Copernicus is the world's largest single Earth Observation (EO) programme and directed by the European Commission in partnership with the European Space Agency (ESA). It aims at achieving a global, continuous, autonomous, high quality, wide range satellite Earth Observation capacity. There is a particularly strong emphasis upon the marine domain, providing accurate, timely and easily accessible information on a mostly free Open Source basis.
More details at <http://marine.copernicus.eu/> and <http://emeroencv.copernicus.eu/>
17. Section 6 Data Duplication and Conflict - It is vital to publicize and promote which organisation is the authority for a particular dataset, and that the same data used or distributed elsewhere has proper citation.
18. Section 8.7 Emergency Planning and Response - To effectively support the disaster management community, the minimum geospatial data needed in an emergency situation needs to be identified (sometimes referred to as 'Fundamental Operational Data'). The organisations responsible for the production and provision of such datasets should consider these data a priority when developing MSDI.
19. Section 9.4 - Understanding the variety of potential users of the MSDI and their specific needs can better inform decision making regarding content, accessibility and metadata. This is particularly true of non-traditional users of HO office data (i.e. those outside the navigation community including, but not limited to, academia, research entities, humanitarian organisations, civil groups, governments). Additional consideration should be given to the accessibility of data in this context, as specialist formats used by HOs worldwide are inappropriate for other users, who are increasingly looking to improve sharing of the world's geospatial data through quality, open standards. Care must be taken that users from all backgrounds understand the data and what uses are appropriate, through proper attribution and provision of metadata

Response from the MSDI WG Chair: I thank UK for the positive words and for the comments to which I present the following considerations:

1. *The intention is surely to combine the understanding of MSDI and the means to implement it both in the main text and in the annexes. Examples are welcomed for the next revision of the publication.*
2. *Noted and I invite for more specific inputs for the next revision of the publication.*
3. *Amended to be more explicit in the preceding paragraph.*
4. *Noted and amended to be less stringent.*
5. *Noted. Paragraph amended.*

6. *Noted.*
 7. *Noted and amended page 18.*
 8. *Noted.*
 9. *to 13. Noted. These are the views and considerations from the MSDIWG.*
 14. *The WG considered that it is important to highlight the lack of understanding in some HOs.*
 15. *This publication is about helping HOs to place themselves beyond data suppliers.*
 16. *Noted.*
 17. *Noted. Authoritative data is covered elsewhere.*
 18. *Noted.*
 19. *Noted. Section 9.4 amended accordingly.*
- As a general comment, I invite UK to engage actively in the next revision of this publication.*