

THE IHO AND INTER-REGIONAL COORDINATION: A NEW MOMENTUM

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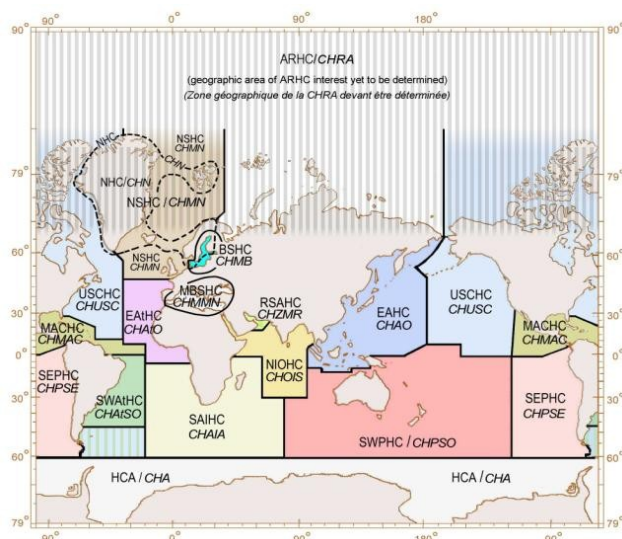
1. Background

As early as the second half of the 19th century, the major maritime nations became aware that maintaining a world-wide portfolio of nautical charts required handling an ever increasing volume of information and the necessity of international cooperation imposed itself progressively. Initiated at the bilateral level, for example between the British and French Hydrographic Offices, it was generalized when the International Hydrographic Bureau was created in 1921 with the objective to make world-wide navigation easier and safer through collaborative efforts. Initially limited to eighteen Member States, its membership grew over the years and had reached forty three Member States in 1970 when an intergovernmental Convention entered into force, which changed the Organization's name and legal status. It created the International Hydrographic Organization (IHO) with the following objectives:

- a) the coordination of the activities of national hydrographic offices;
- b) the greatest possible uniformity in nautical charts and documents;
- c) the adoption of reliable and efficient methods of carrying out and exploiting hydrographic surveys;
- d) the development of the sciences in the field of hydrography and the techniques employed in descriptive oceanography.

At an intermediate level between bilateral cooperation involving neighbouring countries and world-wide cooperation at the IHO level, it appeared that regional cooperation was also helpful in furthering these objectives. The first initiative had been taken in 1929 by the Nordic countries (Denmark, Finland, Norway and Sweden) which had established the Nordic Hydrographic Commission to discuss the standardization of chart symbols and water level information on charts and more generally the regional implementation of the recommendations of the International Hydrographic Conferences. Iceland joined the commission in 1956. It took more than thirty years before a second regional hydrographic commission was formed. The North Sea Hydrographic Commission (NSHC) was established in 1962, at the initiative of Denmark, the Federal Republic of Germany, The Netherlands, Norway, Sweden and the United Kingdom. Later France, Belgium, Iceland and, more recently, Ireland joined the Commission. The NSHC's first activities included agreeing on the publication of fisheries charts and survey requirements outside territorial waters. The third initiative originated in East Asia where China, Indonesia, Japan, the Republic of Korea, Philippines and Thailand formed in 1971 the East Asia Hydrographic Commission. Eight other regional hydrographic commissions were established over the twenty five following years.

In 1997, the XVth International Hydrographic Conference adopted a formal resolution to encourage the Member States having common regional interests to form Regional Hydrographic Commissions (RHC), in order to provide, in pursuance of IHO resolutions and recommendations, regional coordination with regard to nautical information, hydrographic surveys, production of nautical charts and documents, training, technical cooperation and capacity building projects. Specific provisions were agreed to coordinate hydrographic and charting activities in Antarctica in line with the special status of that region: the former IHO Permanent Working Group on Antarctica became the Hydrographic Committee (later Commission) on Antarctica. In accordance with the IHO resolution of 1997, four additional RHCs were established between 2000 and 2010, the last one covering the Arctic Region and thus completing the coverage of all maritime regions (*Fig. 1*). The geographical areas of the RHCs normally coincide with the international charting areas adopted in 1982 to develop integrated schemes of International (INT) charts at medium and large-scales and are more or less aligned with the NAVAREAs established in 1977 for the purpose of co-ordinating navigational warnings within the World-Wide Navigational Warning Service.



- ARHC: Arctic Regional Hydrographic Commission (2010)
 BSHC: Baltic Sea Hydrographic Commission (1983)
 EAHC: East Asia Hydrographic Commission (1971)
 EAHC: Eastern Atlantic Hydrographic Commission (1984)
 MACHC: MesoAmerican-Caribbean Sea Hydrographic Commission (1994)
 MBSHC: Mediterranean and Black Seas Hydrographic Commission (1978)
 NHC: Nordic Hydrographic Commission (1929)
 NIOHC: North Indian Ocean Hydrographic Commission (2002)
 NSHC: North Sea Hydrographic Commission (1962)
 RSAHC: ROPME Sea Area Hydrographic Commission (2000)
 SAHIC: Southern African and Islands Hydrographic Commission (1996)
 SEPHC: South East Pacific Hydrographic Commission (1991)
 SWAHC: South West Atlantic Hydrographic Commission (2006)
 SWPHC: South West Pacific Hydrographic Commission (1993)
 USCHC: US / Canada Hydrographic Commission (1977)
- HCA: Hydrographic Commission on Antarctica (1997)

Figure 1: Coverage of regionally based hydrographic commissions (2010) © IHO

The IHO resolution on RHCs recognized the need to allow for appropriate liaison between “geographically adjacent RHCs”. However the implementation was left at the discretion of each RHC. In some instances, the liaison mechanism was straightforward when at least one Member State belonged to both adjacent RHCs. In other instances, the liaison was at best indirect through specialized IHO organs, such as the IHO Commission on the Promulgation of Radio Navigational Warnings (CPRNW), bringing together NAVAREA coordinators, or the IHO Chart Standardization Committee (CSC), tasked to advise RHCs on the work of regional charting groups.

When the structure of the IHO was reviewed by its Strategic Planning Working Group (SPWG), following a decision of the XVIth International Hydrographic Conference in 2002, the need to rely on the regional dimension of the IHO in a more efficient and structured manner was clearly identified. Two measures were proposed and adopted in 2005. The first one, which is still subject to the formal ratification of the relevant amendments to the IHO Convention, provides for the establishment of the IHO Council, which will meet annually and comprise thirty seats with two thirds allocated to representatives of the RHCs. The second one came into force in 2009 with the creation of an Inter-Regional Coordination Committee (IRCC), being responsible for generating and monitoring the work to be carried out by the RHCs, promoting capacity building and co-operation with regional organizations concerned with the use of hydrographic services.

2. The new IHO Committee Structure

The new structure of the IHO which became effective on the 1st of January 2009 is based on three permanent committees (Fig. 2):

- Finance Committee (FC)** is responsible for preparing the IHO budget and administrative and financial policies and monitoring their implementation after approval by the IHO Member States;
- Hydrographic Services and Standards Committee (HSSC)** is the IHO technical committee responsible for the development of international standards for the quality and formats of hydrographic data and information, and the greatest possible uniformity in the use of these standards; and
- Inter-Regional Coordination Committee (IRCC)** is responsible for promoting and coordinating those activities that might benefit from a regional approach, such as capacity building, training and education, promulgation of navigational warnings, general bathymetry and ocean mapping and implementation of the principles related to the world-wide electronic navigational chart database (WEND), all matters identified as strategic objectives of the IHO.

3. The Inter-Regional Coordination Committee (IRCC)

In general terms the principal objectives of the IRCC are to:

- establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions;
- establish co-operation to enhance the delivery of capacity building programs;
- monitor the work of specified IHO inter-organizational bodies engaged in activities that require inter-regional cooperation and coordination;
- promote co-operation between pertinent regional organizations and,
- review and implement the IHO capacity building strategy, promoting capacity building initiatives.

The IRCC terms of reference (*Fig. 3*) were refined by the SPWG in 2005-2006, reviewed by the XVIIth International Hydrographic Conference in 2007, further adjusted by correspondence and adopted at the end of 2007.

The rules of procedure that were adopted simultaneously with the terms of reference define the membership of the Committee. It comprises the Chairs of its subordinate bodies: the RHCs, the Hydrographic Commission on Antarctica (HCA), the Capacity Building Sub Committee (CBSC), the World-Wide Navigation Warnings Service Sub Committee (WWNWS), the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC), and the Guiding Committee of the General Bathymetric Chart of the Ocean (GEBCO GC). All IHO Member States, and International and Non-Governmental International Organizations accredited to the IHO, may attend IRCC meetings as observers. The rules of procedure specify also that the IRCC shall meet once a year, by mid June, and whenever possible in conjunction with another relevant conference or meeting.

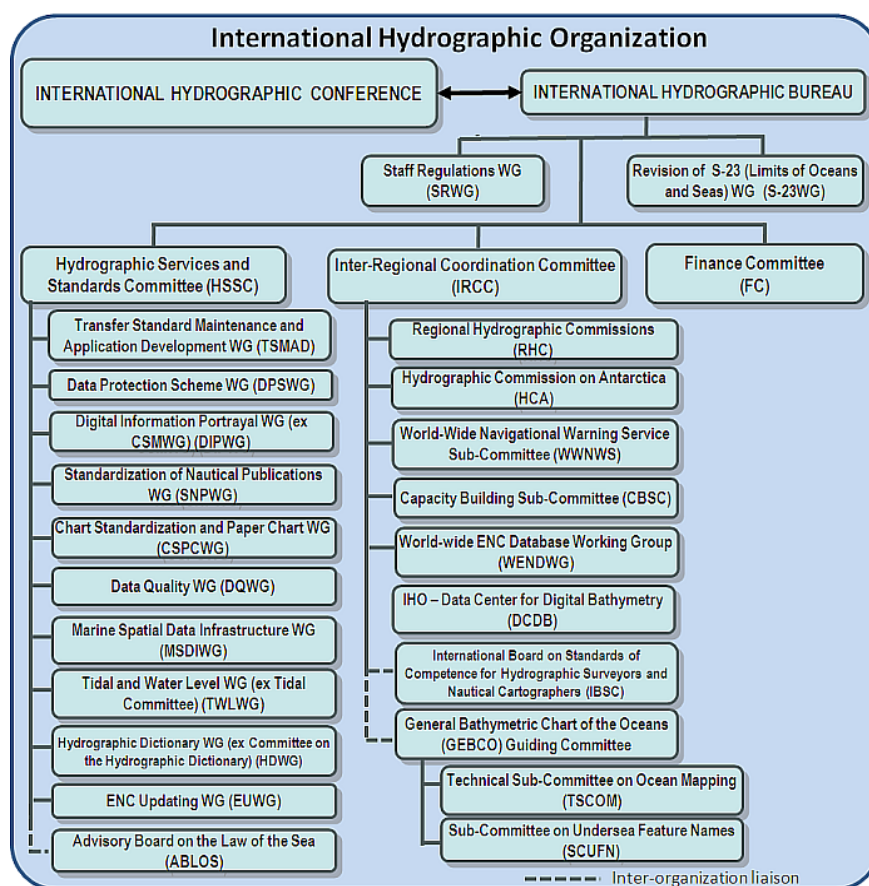


Figure 2: Structure of the IHO as of 1st January 2009 © IHO

INTER REGIONAL COORDINATION COMMITTEE (IRCC)

Terms of Reference

1. Establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions, especially on matters associated with Capacity Building; Promulgation of Radio Navigational Warnings; General Bathymetry and Ocean Mapping, Education and Training, and the implementation of the WEND suitable for the needs of international shipping.

Establish co-operation and partnership with governments, organizations and industry to enhance the delivery of Capacity Building programs and to ensure long-term sustainability.

2. Monitor the work of specified IHO Inter-Organizational Bodies engaged in activities that require interregional cooperation and coordination as directed by the International Hydrographic Conference ("International Hydrographic Conference" to be replaced by "the Assembly" when the Assembly is established) and provide advice and guidance to the IHO representatives as required.
3. Promote co-operation between regional organizations concerned with the use of hydrographic and bathymetric data, information and products as well as Maritime Safety Information (MSI) for navigation safety and all other marine purposes, including economic development, environmental protection and coastal resource management.
4. Review and implement the IHO Capacity Building Strategy and promote the Capacity Building and Training initiatives identified by the relevant subsidiary bodies of the Organization, facilitating interaction between RHCs and potential donors at both international and regional levels.
5. Prepare and maintain publications related to the objectives of the Committee.
6. Prepare a Committee Work Program and propose it to each ordinary session of the International Hydrographic Conference ("each ordinary session of the International Hydrographic Conference" to be replaced by "each ordinary session of the Assembly" via the Council when the Assembly and the Council are established). Consider and decide upon proposals for new work items under the Committee Work Program, taking into account the financial, administrative and wider stakeholder consequences and the IHO Strategic Plan and Work Program.
7. Monitor the execution of the Committee Work Program and report to each ordinary session of the International Hydrographic Conference ("ordinary session of the International Hydrographic Conference" to be replaced by "meeting of the Council" when the Council and Assembly are established), including an evaluation of the performance achieved.
8. Propose to the International Hydrographic Conference ("the International Hydrographic Conference" to be replaced by "the Assembly through the Council" when the Council and Assembly are established), the establishment of new Sub-Committees, when needed, supported by a comprehensive cost-benefit analysis.
9. As required, establish Working Groups to fulfill the Committee Work Program, in conformance with IHO Resolution 11/1962 as amended (IHO Resolution 11/1962 as amended to be replaced by Article 6 of the General Regulations when the revised IHO Convention enters into force) and approve their Terms of Reference and Rules of Procedure.
10. Monitor the work of its Sub-Committees, Working Groups and other bodies directly subordinate to the Committee.
11. Review annually the continuing need for each Working Group previously established by the Committee.
12. Liaise and maintain contact with relevant IHO and other bodies to ensure that IHO work activities are coordinated.
13. Liaise with other relevant international organizations and Non-Government International Organizations (NGIOs).
14. These Terms of Reference can be amended in accordance with Resolution 11/1962 as amended (to be replaced by Article 6 of the General Regulations when the revised IHO Convention enters into force).

Figure 3: Terms of reference of IRCC (2010) © IHO

According to the IHO Strategic Plan adopted in 2009, the IRCC is responsible for the “Inter-Regional Coordination and Support” programme of the IHO Work Programme.

4. Implementation of the IRCC and assessment of its activities

The IRCC has met three times since its establishment.

The first meeting took place immediately after the 4th Extraordinary International Hydrographic Conference in June 2009. Besides electing its Chair and Vice-Chair, in accordance with the rules of procedure, the Committee set up its modus operandi, reviewed the activities of its subordinate bodies and discussed its work plan for the coming year. The main outcome was the decision to set up a working group (WEND WG) to monitor the development of an adequate coverage of electronic navigational charts (ENC) in accordance with the implementation of the ECDIS carriage requirements that had been approved a few days earlier by the Maritime Safety Committee of the International Maritime Organization (IMO). The following Terms of Reference were agreed:

1. Monitor the development of adequate ENC coverage to meet any carriage requirements for ECDIS;
2. Develop proposals for speeding up ENC production and ensuring uniform ENC quality and consistency, and for making data available world-wide, including SENC¹ distribution, taking advantage of any offers for production assistance, or other ways of mutual assistance and co-operation;
3. Advise Member States, where appropriate, on the need, as well as on methods and tools for validating the data, and on any assistance which could be offered by the RENCs;
4. Monitor the implementation of the WEND, in response to Decision 21 of the XVIIth IHC², and advise IRCC of appropriate measures for speeding-up the implementation process;
5. Assist in harmonizing the policies of regional ENC Coordinating Centres (RENC) with respect to matters related to administration, legality, finances, technical processes, etc.

The second IRCC meeting was held in New Orleans (United States) in June 2010. The Committee discussed the progress in establishing the Arctic Regional Hydrographic Commission and identified four generic items to be further investigated by RHCs:

- the methodologies in use for displaying information on survey status,
- the implementation of the guidance for preparing and maintaining INT Charts,
- experiences in dealing with handling marine disasters, and
- strategies to involve non IHO Member States in RHCs' activities.

RHCs were also invited to ensure that the countries receiving support from the IHO Capacity Building Fund do provide follow-up reports on the outcomes.

¹ SENC: System Electronic Navigational Chart: the ENC database transformed in the manufacturer's internal ECDIS format.

² Decision 21 of the XVIIth International Hydrographic Conference:

The IHO

- *Realizing that even in the paper chart world, a complete coverage of high quality nautical charts does not exist.*
- *Furthermore realizing that it is not realistic to expect a complete world-wide coverage of ENCs in all waters in the foreseeable future.*
- *Recognizing that shipping is more congested in some areas and routes around the world than others.*
- *Consequently also recognizes the need to identify congested areas and as a minimum ensure the earliest possible coverage of ENCs in those areas.*
- *Having considered the report from DNV on the “Effect of ENC Coverage on ECDIS Risk Reduction” establishing that:*
 - *a significant coverage of suitable ENCs are already available to the international shipping community, and*
 - *the implementation of ECDIS will enhance safety at sea, and*
 - *the implementation of ECDIS is found to be cost efficient for new as well as existing ships above a certain size.*
- *Noting that the Conference reaffirmed its commitments to the WEND Principles.*
- *Strongly supports the efforts by IMO to introduce mandatory carriage requirements for ECDIS, emphasizing that:*
 - *a significant coverage of ENCs is already in place and will be further improved by 2010, as indicated in the DNV report and supported by IHO assessments, and secondly that*
 - *acceptance of mandatory carriage requirements will further accelerate the production of ENCs*

The Committee adopted the following Work Programme for the WEND Working Group:

- a) monitor progress in providing ENC coverage and identify and propose solutions to issues of concern such as gaps and overlaps;
- b) investigate and report on the significance of other areas of concern:
 - variation in licensing terms and conditions,
 - reports of ENC quality and updating issues;
- c) keep RHC Chairs informed of ENC issues identified within their regions;
- d) provide support to the IHB in preparation of reports to the IMO Sub-Committee on safety of navigation.

The Committee invited the GEBCO Guiding Committee to consider ways to strengthen collaboration with RHCs with a priority on improving high resolution shallow water bathymetry at the regional level.

The Committee also encouraged the continuation of the valuable collaboration amongst IHO, IALA³, WMO⁴, IOC⁵ and IMO to optimize resources in capacity-building programmes and noted the progress made in consolidating the cooperation with regional organizations such as the Association of Caribbean States and the European Commission.

The third meeting of the IHO Inter-Regional Coordination Committee (IRCC3) was held in Niteroi (Brazil) in June 2011. The main items on the agenda of the meeting were:

- the status of approval of the Protocol of amendments to the IHO Convention,
- the development of the WEND Database,
- the implementation of the IHO strategic planning mechanism,
- the preparation of the IRCC contribution to the XVIIIth International Hydrographic Conference in 2012.

In the light of the modest progress in carrying out the work plan of the WEND Working Group, the Committee agreed on ways and means to prepare, with the active participation of the RHCs, a comprehensive report on the implementation of the WEND Principles for consideration by the XVIIIth IHC. The feedback from the RHCs, notably from the Baltic Sea Hydrographic Commission, on coordinating survey schemes and displaying survey status, led the Committee into agreeing an action to design a suitable framework for the development of IHO Publication C-55 (Status of hydrographic surveying and nautical cartography world-wide).

5. Perspectives

The main short-term challenge on the IRCC agenda concerns the implementation of the WEND Principles in conjunction with the ECDIS carriage requirements. Although the global ENC coverage has made significant progress (*Fig. 4*), there are still a number of outstanding issues to be resolved. The objective is to ensure that mariners have access to up-to-date ENCs for all navigation routes and ports around the world. Conversely, there should be only one ENC covering a given area for each usage band. Although according to the SOLAS⁶ Convention individual Coastal States are responsible for attaining this objective in the maritime areas under their national jurisdiction, the provision of an adequate ENC coverage, without any gap or overlap and with a proper distribution and updating service, is also an inter-regional coordination matter with three main components:

- the ENC coverage of international areas,
- the ENC coverage of areas under national jurisdiction of Coastal States which do not have any ENC production capability,
- the ENC coverage of areas where the limits of waters of national jurisdiction between the bordering States are not established.

Comparison of ENCs with corresponding paper charts				
	May 2008	May 2009	May 2010	March 2011
Small scale ENCs (planning charts)	>90%	~100%	~100%	~100%
Medium scale ENCs (coastal charts)	60%	77%	84%	88%
Large scale ENCs (top 800 ports)	65%	84%	91%	94%

Figure 4: Progress in ENC coverage © IHO

³ IALA: International Association of Marine Aids to Navigation and Lighthouse Authorities.

⁴ WMO: World Meteorological Organization.

⁵ IOC: Intergovernmental Oceanographic Commission.

⁶ SOLAS: Safety Of Life At Sea.

All three components are very sensitive and require an inter-regional cooperative approach based on delegation, capacity building and co-production arrangements. The IRCC and its subordinate bodies are instrumental in detecting shortcomings, identifying and promoting best practices and designing innovative solutions when required, in line with the goals of the IHO. With the transition to the digital era and the associated development of “e-navigation”, these goals are even more relevant today as when the IHB was established 90 years ago.

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