

THE NEED TO PROMOTE CLOSER LINKS BETWEEN THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO) AND THE INTERNATIONAL CARTOGRAPHIC ASSOCIATION (ICA)

By R. Furness (Australia)

*Chair of the Commission on Marine Cartography
of the International Cartographic Association (ICA)*

Marine or nautical cartography is intrinsically present in the manifestation of visualized hydrographic data in general and which is typically published in the form of nautical chart images (paper and digital), as well as associated products, for the broadening uses of mariners and society. The rightly proud achievements of the IHO's Member States over the years in standardizing nautical charts, ENCs, RNCs and their production arguably has had an effect of rendering less visible to many the fundamental cartographic principles embodied within those products. It is suggested that familiarity of users and producers with such standardized images has led to a degree of unintentional insularity on the part of each organization with respect to the other. Arising challenges from technological imperatives in the last few decades deriving from, for example, massive data collection abilities, use of statistical data quality analysis, visualization necessities, automation opportunities for product production methods, including printing and display efficiencies, increasingly suggest definite benefits from enhancing closer ties between the IHO and the ICA, thus building on potential synergies from the professional expertise that abounds in both organizations.

Cooperation between the IHO and the ICA has been variously consistent over many decades, at least for the last twenty years or so. This was solidified in the form of a Memorandum of Understanding (MoU) signed in 2012 by the then Presidents of ICA and of the IHO Directing Committee. The MoU document encourages regular contact between both organizations, especially through closer ties between their Commissions and Working Groups. This encouragement is promoted by the aim of this Note.

Senior officers of both organizations have attended the Conferences of the other organization and, at the committee level, the ICA has strongly supported the work of the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC). This support is evident through the direct and continuous membership on the IBSC of two Members (Ron Furness and Emeritus Professor Lysandros Tsoulos) since 2002, following an approach from the President of the then IHB Directing Committee and the Chairman of the then (Advisory) Board for ICA in 2001 for ICA support for the development and introduction of what became the Standards of Competence for Nautical Cartographers, currently promulgated by IHO as Publications S-8A and S-8B (www.iho.int/downloads).

ICA support for IBSC is channelled through its Commission on Marine Cartography. This body was re-established as a Working Group in 2015 and elevated to the status of a Commission at the 18th General Assembly of ICA, held contiguous to the 29th International Cartographic Conference (ICC2019) that was conducted in Tokyo, Japan, during July 2019.

The ICC2019 was very successful and illustrated the continuing significance of cartography with its overall theme *Mapping Everything for Everyone* that generated 44 sub-themes. The formal Opening Session was granted the honour of the presence of Their Imperial Highnesses, Crown Prince and Crown Princess Akishino with the 400 plus delegates packing the hall (with telecasting to another venue) receiving a supportive address from the Crown Prince. Overall, the Conference was attended by some 950 delegates from about 75 countries. They had the choice of 750 presentations in 150 sessions that included Marine Cartography. Liaison between IHO and ICA is typically evident in the International Map Exhibition (IME) which is held during the international conferences. Sometimes, this has seen the separate classification of nautical charting, but more usually, as in IME2019, most exhibiting ICA Members include charting within their exhibits. Many nautical charts were displayed at IME2019, which displayed overall, some 385 exhibits from 30 countries, and which was held in the vast public area of the Telecom Center Building in Daiba. Public access was a feature and a steady stream of visitors was able to view the exhibits in paper and digital forms. The International Children's Map Competition attracted 188 maps from 33 countries. Twenty-two booths comprised the Technical and Commercial Exhibition and some 50 grants were made for young researchers. The Programme and Proceedings, as well as the details of the General Assembly, can be found at <https://icaci.org/icc2019/>.

Much of the work of both IHO and ICA is conducted through their various Commissions and/or Working Groups. There is much to be gained from better cross-relationships and networking between the compatible groups and with each reaching out to at least achieving observer status between them. The following table identifies and suggests some potential liaisons. The full list of the ICA Commissions can be found at <https://icaci.org/commission-proposals-2019-2013/>

Table: Suggested IHO-ICA Commissions/Working Groups with sympathetic aims (not exclusive)

IHO Body	Suggested compatible ICA Commission
Marine Spatial Data Infrastructures (MSDIWG)	SDI and Standards Cartography in Early Warning and Crisis Management
Crowd Sourced Bathymetry Working Group (CSBWG)	Marine Cartography Ubiquitous Mapping
IHO Data Centre for Digital Bathymetry (DCDB)	Marine Cartography
FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)	Marine Cartography Education and Training
IHO Nautical Chart Working Group (NCWG)	Marine Cartography
IHO Capacity Building Sub-Committee (CSBC)	Marine Cartography Education and Training
IHO S-100 Working Group (S-100 WG)	SDI and Standards Open Source Geospatial Technologies
IHO History and Heritage (IHO)	Marine Cartography History of Cartography Cartographic Heritage

The full list of ICA Commissions, together with their detailed Terms of Reference, can be found at <https://icaci.org/files/documents/generalassembly2019/24-commissions/24-tors.pdf>.

Specifically commenting on Marine Cartography, the Commission on Marine Cartography was established with the following Terms of Reference and an immediate period of existence of four years:

- Disseminate information on Marine Cartography as the ICA Expert Marine Cartography Focus Group to ICA members and to other affiliated organisations, covering research on cartography relating to the visualisation and management of ocean data.
- Promote the establishment of a global network for marine cartographers using media to facilitate the strengthening of the access of interested communities to marine cartographic knowledge.
- When practicable, foster and support local meetings for workshops on Marine Cartography and assist in engaging appropriate recognised experts.
- Liaise and coordinate with other relevant ICA Commissions and Working Groups.
- Liaise and coordinate with relevant groups from other organisations and associations (e.g. IHO, FIG, IGU...).
- Provide appropriate qualified members representing ICA membership on the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC).
- Encourage and promote policies of equal opportunity wherever possible within the Marine Cartography profession.

The Commission was proposed by Australia. Chair is Ron Furness (Australia); Vice-Chair, Emeritus Professor Lysandros Tsoulos (Greece) and Secretary, Dr Shachak Pe-eri (United States).

After their continuous contributions as members to the work of IBSC since 2002, the Chair and Vice-Chair are focussed on achieving a succession plan for their replacements. Furthermore and noting that IHO and FIG are both represented on IBSC by four members and that IHO additionally provides the Secretary, the IBSC itself has mooted a need to consider expanding ICA representation to four members, thus the ICA Commission will additionally need actively to seek out additional contributors to the ongoing vital work of the IBSC. The need arises from the increasing general workload of the IBSC as well as increasing interest in the development and maintenance of programmes that comply with S-8A and/or S-8B, the Standards of Competence for Nautical Cartographers. This is in addition to the maintenance of the Standards themselves.

Partly to this end, any reader interested and who feels they are qualified and experienced to contribute through the ICA to the work of the IBSC is invited to make direct contact with either the Chair (Ron Furness ron.furness.ibsc@gmail.com) or Vice Chair (Lysandros Tsoulos lysandro@central.ntua.gr).

The aim of this Note has been to bring to the wider notice of readers the cooperative nature in the relationship between the IHO and ICA, with an objective of seeking to strengthen the relationship by building on opportunities presented from closer ties between the existing Commissions and/or Working Groups of each parent organization. The Members of the Commission on Marine Cartography look forward to promoting and supporting such enhanced cooperation.

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