The 4th Extraordinary International Hydrographic Conference was held in Monaco, 2nd - 4th June 2009. The most important issue of the conference was the global availability and quality of ENCs (Electronic Navigational Charts), which are the only official electronic charts published by maritime countries according to the SOLAS (Safety Of Life At Sea) convention of the IMO. The IMO expects a fairly complete portfolio of ENCs to be available in the very next years to meet the requirement for the mandatory carriage of ECDIS on most commercial vessels, which has recently been approved by the Maritime Safety Committee of the IMO.

In this respect, the introductory speech by the Secretary-General of IMO, Efthimios E. Mitropoulos, bears a particular significance. Stressing that hydrography helps to minimize environmental damage, the Secretary-General paid tribute to his Serene Highness, Prince Albert 2nd and his personal interest in all matters environmental, in addition to his continuing support of the IHO. He declared, among other issues, that there is a simple and direct correlation between safe navigation and the protection of the marine environment and that the basic requirement for accurate and reliable charts has seldom been so important. But, as he put it, “hydrographic data are also essential to a multitude of other diverse activities, such as global seabed studies; mapping and predicting shoreline erosion and sediment transport; delimitation of maritime boundaries; coastal construction; the study of marine resources, both living and non-living; pollution control; and the development of marine geographic information systems - all of which can be enlisted in the battle to preserve and protect our environment.”

“The work of the International Hydrographic Organization is a central part of IMO’s achievements in this arena”, he added. By way of an example of this collaboration at work, the Maritime Safety Committee (of IMO) recently expressed its keenness to adopt amendments to existing regulations under the Safety of Life at Sea Convention to make the carriage of Electronic Chart Display and Information Systems, known as ECDIS, mandatory. He also acknowledged that IHO is active beyond the strict safety of navigation and mentioned just a few examples: “the support of the hydrographic community for the Marine Electronic Highway Demonstration Project in the Strait of Malacca; the development of chart symbology for Particularly Sensitive Sea Areas and for ships' routeing systems; and the IHO working group to develop an international standard to ensure common and consistent means for depicting marine environment protection measures on electronic charts. All of these initiatives demonstrate clearly how hydrography can enhance the ability of mariners to navigate safely.” He observed that “the vital work of hydrographic surveying can never truly be said to be complete” and ended by recalling that “Signatories to SOLAS have an obligation to collect hydrographic data and information, to produce charts and nautical publications and to keep them up-to-date and to promulgate Maritime Safety Information - activities, which all contribute to enhanced navigational safety and to the protection of the marine environment.”

Strategic Planning and Work Programme

A new definition of hydrography was adopted, as follows:

"Hydrography is the branch of applied sciences which deals with the measurement and description of the physical features of oceans, seas, coastal areas, lakes and rivers, as well as with the prediction of their change over time, for the primary purpose of safety of navigation and in support of all other marine activities, including economic development, security and defence, scientific research, and environmental protection”. The main changes from the previous definition are underscored. The definition is broadened according to growing demand for hydrographic data, especially for environmental information, with a special aim to make authorities more aware of the importance of such data. Some countries requested that disasters be included in the
definition; for the majority, it was considered as provided for under “security”.

The new work programme will be based on the three principal programmes which will replace the five existing ones. These programmes are the following:

- Corporate Affairs under the responsibility of the International Hydrographic Bureau (to be replaced by the Secretary General when the revised IHO Convention enters into force),

- Hydrographic Services and Standards under the responsibility of the relevant Committee (HSSC),

- Inter Regional Coordination and Support under the responsibility of the Inter Regional Coordination Committee (IRCC)

The content of the work programme will not be changed until 2012, but will be structured according to the recommendations of the ISPWG (IHO Strategic Plan Working Group) report. A table of correspondence is given in the report. The ISPWG also introduced performance indicators and risk management in the Strategic Plan. The effort to be associated with risk management is not precisely known at this stage and the Conference agreed to request the IHB Directing Committee to review possible needs for assistance in preparing the annual cycles of the new strategic mechanism, in consultation with the high level committees. This proposal was approved in the hope that the IHO Member States will join Norway, which has volunteered, in helping the IHB to fulfil its task. The budget will also be rearranged under the same structuring.

**Inland Waters**

A specific working group had been created to study the issues associated with inland waters and reported to the Conference. The decisions made by the Conference are interesting for showing the necessity of IHO productions for inland waters as well as the legal and regulatory variety of relationships between the authorities in charge of maritime and other waters. They are reproduced below. It is interesting to note that the list of recommendations below was simply “noted” although it was proposed that they be “endorsed”.

“The HCIWWG (HYDROGRAPHY AND CARTOGRAPHY IN INLAND WATERS WORKING GROUP)

a) Invite relevant Regional Hydrographic Commissions to

i. consider establishing liaison committees or other bodies, where relevant, to ensure consistent use and development of hydrographic standards and mutual cooperation for the enhancement of navigation safety in navigable inland waters within a region, and

ii. to encourage cooperation and mutual assistance between authorities, even from different regions but with common interests, particularly for the safety of navigation in navigable inland waters, with the purpose of mutual support and the establishment of instructions and guidance for hydrographic survey and the production of nautical charts, in accordance with the guidance in Technical Resolutions T1.3 and A3.4, and Article 8 of the future General Regulations.
b) Invite relevant Member States and/or Regional Hydrographic Commissions (RHCs) to submit proposals to IHO for Capacity Building Committee (CBC) projects in support of regional coordination and the exchange of know-how in inland hydrography and cartography.

c) Agree that, wherever possible, when developing the IHO Work Program, and standards and guidelines, the potential applicability to hydrography and cartography for navigable inland waters should be taken into consideration.

d) Direct the IHO Hydrographic Dictionary Working Group to establish a definition for navigable inland waters, taking as a starting point the definitions contained in Annex B of the HCIWWG Report.

e) Establish a formal cooperation agreement between IHO and the Inland Electronic Navigation Chart Harmonization Group (IEHG) to produce, and to advise and assist the IHO on providing for the development and extension of specifications to cover Electronic Navigational Charts (ENCs) and digital nautical publications for navigable inland waters.

f) Invite the IHO Hydrographic Services and Standards Committee (HSSC) to develop guidelines for those who seek to develop extensions to IHO specifications for use in navigable inland waters.

g) Invite the HSSC to consider the adoption of relevant extensions to IHO specifications for use in navigable inland waters developed by other organisations.

h) Invite the Inter-Regional Coordination Committee (IRCC) to foster and coordinate inland-related capacity building proposals/actions/work of RHCs and review their status at its annual meetings.”

In addition, “relevant Regional Hydrographic Commissions (RHC), through appropriate liaison bodies, are invited to:

a. Encourage the consistent use of hydrographic and nautical cartographic standards and mutual cooperation for the enhancement of navigation safety in navigable inland waters within and between regions.

b. Encourage the identification of needs for developing additional regional extensions to IHO specifications to cater for navigable inland waters and foster these developments together with other relevant organisations.

c. Encourage liaison with relevant IHO bodies (International Hydrographic Bureau (IHB), Hydrographic Services & Standards Committee (HSSC)) to ensure that any extensions to IHO specifications for navigable inland waters are consistent with IHO specifications and are as far as possible harmonised between other regional extensions.

d. Encourage liaison, when appropriate, with other bodies working with inland hydrographic and nautical specifications, especially with the Inland Electronic Navigational Chart.
Harmonisation Working Group (IEHG), to ensure consistency and harmonisation as far as feasible with their specifications.

c. Encourage cooperation and mutual assistance between relevant authorities, even from different regions but with common interests, particularly for the safety of navigation in navigable inland waters, with the purpose of mutual support and the establishment of instructions and guidance for hydrographic survey and the production of nautical charts.

f. Monitor the development and use of hydrographic and cartographic standards on navigable inland waters, and report as necessary to the Inter-Regional Coordination Committee (IRCC).

Where the responsibility for hydrography and nautical cartography of maritime and navigable inland waters is divided among different organizations, Member States are encouraged to ensure that these organizations’ activities are properly coordinated.”

Marine Spatial Data Infrastructure
The IHO has established a working group on this topic, the MSDIWG, which reports to the CHRIS (Committee on Hydrographic Requirements for Information Systems), which is being subsumed in the new HSSC (Hydrographic Services and Standards Committee).

Definitions (from the MSDIWG report)

“A Spatial Data Infrastructure is a term used to summarise a range of concepts, processes, relationships and physical entities that, taken together, provide for integrated management of spatial data and information. The term covers the processes that integrate technology, policies, criteria, standards and people necessary to promote geospatial data sharing throughout all levels of Government. It covers the base or structure of practices and relationships among data producers and users that facilitates data sharing and use. It covers the set of actions and new ways of accessing, sharing and using geographic data that enable far more comprehensive analysis at all levels of government, the commercial and not-for-profit sectors and academia. It also describes the hardware, software and system components necessary to support these processes.”

The Conference adopted the following policy:

The IHO will support Member States in the identification, development and implementation of an appropriate role in national Spatial Data Infrastructure (SDI) and MSDI initiatives. This will be achieved through:

- The development and maintenance of a Special Publication that will provide a definitive procedural guide to establishing the role of the national hydrographic authority in MSDI.
- Developing an MSDI capacity building plan comprising knowledge transfer and training to Member States.
- Developing and managing a web-based facility to

1 for more detail, see http://ienc.openecdis.org/?q=node/6
encourage knowledge transfer, best practice and provision of on-line guidance and training material.

- Formalising relations between IHO and other SDI stakeholder groups and through actively participating in these groups to strengthen understanding and knowledge of the role of hydrography in MSDI.

IHO Regional Hydrographic Commissions are encouraged to monitor and report progress in Member States’ MSDI engagement and development as a means of benchmarking the role of the national hydrographic authority in MSDI.”

**ENCs**

**ENC Coverage**

The 4th EIHC resolved that Member States and non-Member States\(^2\) should report on whether they will have ENC coverage in place to support international voyages and trade by 2010, in accordance with the Resolution (Decision 20)\(^3\) of the XVII International Hydrographic Conference, to the International Hydrographic Bureau and the Chair of the relevant Regional Hydrographic Commission as soon as possible, and not later than 1 August 2009, so that appropriate remedial plans can be identified and put into place to achieve the target.

**ENC consistency and quality**

These issues gave rise to the longest debate in the conference. It was an opportunity for all present members to express their positions, allowing for a better understanding of the problems to be solved.

There is a wide consensus on the main goals: that ENCs be consistent, correctly encoded, validated and updated, and that any set of them be obtainable from a single source (but not necessarily a unique one). The chairman of the PRIMAR Stavanger Advisory Committee, Gilles Bessero (also the French Hydrographer), presented a vision in line with the “WEND\(^4\) principles” adopted many years ago by the IHO, where RENCs\(^5\) perform, on a regional basis, the tasks necessary to achieve the above goals. Another vision, shared by a number of countries, is for a more “liberal” approach: as difficulties arise between some countries, the distributors could be relied upon to make the best of what they receive from states, which, as part to the IMO SOLAS convention, have an obligation to collect hydrographic data and information, to produce charts and nautical publications and to keep them up-to-date and to

\(^2\) Many regional hydrographic commissions include representatives from States which are not members of the IHO

\(^3\) Extract from resolution 20 : »... 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 »

\(^4\) Worldwide Electronic Navigational Chart Database

\(^5\) RENCs, according to the WEND principles, are « organisational entities where IHO members have established co-operation amongst each other to guarantee a world-wide consistent level of high quality data, and for bringing about co-ordinated services with official ENCs and updates to them. »
promulgate Maritime Safety Information.

It is worth noting that the debate crystallized on the proposed change of “encourage” by “should” in the following excerpt from the “WEND principles”, and that the change was dismissed. “Member States are encouraged to distribute their ENCs through a RENC in order to share in common experience and reduce expenditure, and to ensure the greatest possible standardization, consistency, reliability and availability of ENCs.”

The issue thus stays in the purview of member states, which may resort to RENCs, but also to other solutions.

**ENCs for leisure craft and fishing boats**

A report on this subject was presented by Greece. It was agreed that the matter should be put to the HSSC for their consideration and decision on the best way forward.

**Date and place of the next conference**

It should be held in Monaco (as usual) in April 2012; the exact date will be fixed in consultation with the Monaco government.

Yves Desnoës IFN
IAIN Representative at IHO
29 June 2009