

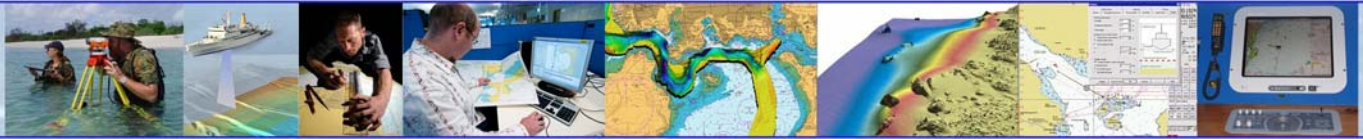
41ST MEETING OF ISO/TC 211 Sydney, Australia, 7-11 December

Standards Australia hosted the 41st meeting of the International Organization for Standardization (ISO) - Technical Committee 211 (ISO/TC211). ISO TC211 deals with the development of standards and specifications for the geospatial domain. The International Hydrographic Organization (IHO) is a Class A liaison member of ISO/TC211 and participates in its standards development and maintenance Working Groups. The ISO/TC211 19100 series of standards and specifications have been used for the development of the IHO S-100 Universal Hydrographic Data Model. IHB Assistant Director Anthony Pharaoh represented the IHO at the meeting.



41st ISO/TC211 Plenary Meeting

The 41st plenary meeting unanimously accepted a nomination from the United Nations Statistics Division (UNSD), (which is the secretariat for the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM)), to become a Class A liaison member. There are currently 33 external liaison members.



ISO requires that all standards undergo regular revisions. The 41st plenary meeting agreed that the following standards, which are relevant to the IHO S-100 standard, should undergo a systematic review: ISO 19108 (Temporal schema), ISO 19123 (Schema for coverage geometry and functions), ISO 19129 (Imagery, gridded and coverage data framework) and ISO 19135-2 (Procedures for item registration - Part 2: XML schema implementation).

The following standards, which are also relevant to S-100, will be eligible for systematic review in 2016: ISO 19111 (Spatial referencing by coordinates), ISO 19131 (Data product specifications) and ISO 19139-2 (XML schema implementation – Part 2 for Metadata).

In response to a request by the IHO to ensure that new editions of the 19100 series of standards remain relevant to implementing organizations; the 41st Plenary unanimously approved a resolution (744) relating to backward compatibility in revised standards and stating that; *ISO/TC 211 strongly recommends that revisions of standards and technical specifications include an informative annex which describes how backward compatibility is addressed. This annex may include crosswalks, mappings or similar mechanisms, which evidence the degree of compatibility*".

In response to an invitation from the Technical Committee on Geographic Information of the European Committee for Standardization (CEN/TC287) the plenary meeting, agreed to investigate how the documents listed below can be adopted as TC211 documents. These documents may be relevant to the IHO MSDI Working Group;

- CEN/TR 15449-1, Spatial data infrastructures – Part 1: Reference model
- CEN/TR 15449-2, Spatial data infrastructures – Part 2: Best practices
- CEN/TR 15449-3, Spatial data infrastructures – Part 3: Data centric view
- CEN/TR 15449-4, Spatial data infrastructures – Part 4: Service centric view
- CEN/TR 15449-5, Spatial data infrastructures – Part 5: Validation and testing

A "Standards in Action Workshop" took place during the meeting. The workshop included presentations on the Australia & New Zealand - Foundation Spatial Data Framework (FSDF), the Republic of Korea's experiences with geospatial standard profiling, the use of ISO standards within the multinational Defence Geospatial Information Working Group (DGIWG) and a "Standards Development Journey".

The next ISO/TC211 plenary meeting will take place in Tromsø, Norway in June 2016.



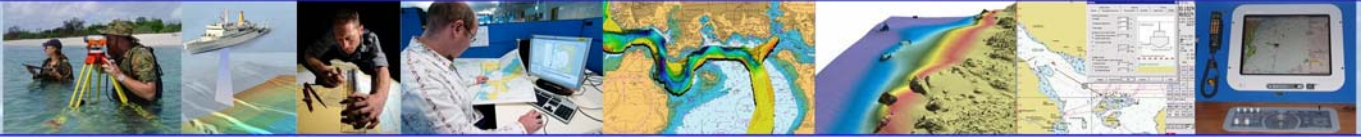
16TH MEETING OF THE MESO-AMERICAN - CARIBBEAN SEA HYDROGRAPHIC COMMISSION (MACHC) Antigua and Barbuda, 9-12 December

The 16th Meeting of the Meso American - Caribbean Sea Hydrographic Commission (MACHC) was held in St. John's, Antigua and Barbuda from 9 to 12 December with 70 participants from 11 Member States, six Associate Members, three observer countries, nine observer organizations, and eleven companies. President Robert Ward and Assistant Director Alberto Costa Neves represented the IHB.



The meeting was hosted by the Antigua Department of Maritime Services (ADOMS) and chaired by Captain Marc van der Donck, national Hydrographer of the Netherlands and Chair of the Commission.

As a lead-up to the meeting, an IHO capacity building seminar on raising awareness of hydrography was held. Speakers from several IHO Member States, the International Maritime Organization (IMO) and the International Association of Aids to Navigation and Lighthouse Authorities (IALA) took part.



MACHC 16 - SEMINAR ON NATIONAL OBLIGATIONS FOR THE PROVISION OF NAVIGATION SERVICES
7th - 8th DECEMBER 2015
Antigua & Barbuda

This was followed by meetings of the MACHC Integrated Chart Coordination Committee (MICC), the Capacity Building Committee, the Marine Economic Infrastructure Program (MEIP) Working Group and discussions on the latest developments in risk assessment.

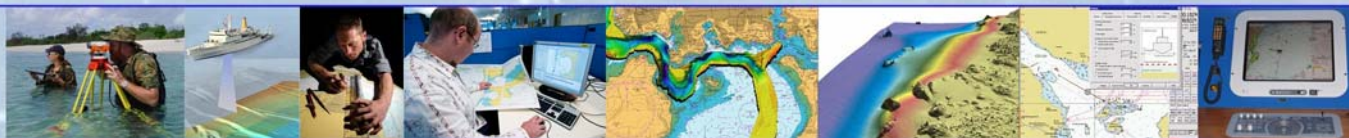
President Ward and the Chair of the MACHC, accompanied by the national Hydrographers of Mexico and UK and the former national Hydrographer of Brazil called on His Excellency Gaston Browne, Prime Minister of Antigua and Barbuda.

HNLMS *Friesland*, the Netherlands Navy regional guard ship made a port call during the period of the meeting. MACHC attendees were invited to lunch and a tour aboard the vessel.

The 16th meeting of the MACHC was opened on behalf of the government of Antigua and Barbuda by His Excellency Dwight Gardiner, Ambassador Extraordinary and Plenipotentiary, with special responsibility for the International Maritime Organization, the International Seabed Authority, the International Maritime Satellite Organization, Antigua and Barbuda Representative on Transportation (Port and Maritime) to the Caribbean Community and the Association of Caribbean States.

The agenda was arranged according to themes: reports from countries and organizations, surveying and risk assessment, spatial data infrastructures, nautical charts and publications, and capacity building. In addition to the delivery of national reports from each of the countries represented at the meeting, presentations were provided to complement relevant agenda topics by the industry stakeholders and other organizations invited to the meeting.

The meeting was told of significant progress in ENC coverage in the region with 58 new ENCs and the development of a regional IC-ENC Center in Brazil. The meeting was also informed of the development of a practical gap analysis process under development by the USA that will help coastal States to identify those ports where there is a need to produce larger scale ENCs.



This, and other collaborative activities, reflected the growing levels of technical cooperation between all MACHC States in the region.

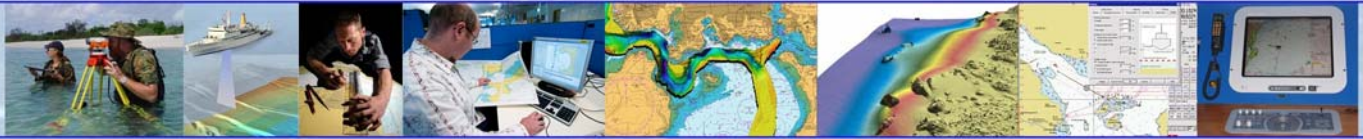
The meeting welcomed the representative of the Organization of Eastern Caribbean States (OECS) and acknowledged the recent Memorandum of Understanding concluded between the IHO and the OECS. As a result, the OECS was recognised as a permanent observer organization in the MACHC. The meeting was informed of significant progress on a proposal, spear-headed by Antigua and Barbuda, to develop sub-regional hydrographic services in the waters of the Member States of the OECS. Once donor funding has been obtained, the project will enable the development of a regional Hydrographic Service in the Eastern Caribbean.

The Commission reviewed the progress made with its Maritime Economic Infrastructure Programme (MEIP), which aims to be part of a regional Marine Spatial Data Infrastructure (MSDI) that supports the blue economy in the region.

A number of changes to the Statutes of the MACHC were agreed in anticipation of the entry into force of amendments to the IHO Convention. In particular, a process was included to determine the selection of representatives on the IHO Council and to indicate their obligations to the Commission. The Statutes were also amended to recognize the need to support the Spanish language during meetings of the Commission.

The Dominican Republic informed the meeting of the recent creation of the national hydrographic service as part of the Navy. The Dominican Republic was also recognised as an Associate Member of the Commission.

The next meeting of the MACHC will take place from 14 to 17 December 2016 in Belém, Brazil.



97TH MEETING OF THE OPEN GEOSPATIAL CONSORTIUM (OGC) TECHNICAL COMMITTEE

Sydney, Australia, 30 November to 3 December

The Open Geospatial Consortium (OGC) is a not for profit international industry consortium with a membership of more than 520 companies, government agencies and universities. The OGC standards support interoperable solutions for location-based services and mainstream IT requirements. The OGC works closely with the Technical Committee on Geographic information/Geomatics of the International Organization for Standardization (ISO/TC211) in producing standards for the geospatial domain. Following the joint work between these two organizations and the IHO to develop a “Guide to the Role of Standards in Geospatial Information Management” which has been adopted by the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM), the IHO and the OGC are considering developing further their cooperation through cross-participation in their relevant organs.

The OGC held its 97th Technical Committee meeting in Sydney; Australia from 30 November to 4 December, preceding the 41st plenary meeting of the ISO/TC211. The meeting was hosted by the National Information and Communications Technology - Australia (NICTA) Research Centre and attracted some fifty participants. IHB Assistant Director Anthony Pharaoh represented the IHO at the meeting.

The opening address was provided by the Chief of the Environmental Geoscience Division of Geoscience Australia, Dr. Stuart Minchin. The Committee conducted its work through parallel working group sessions. The activities focused on topics including how to integrate and support the OGC Land XML schema, reviewing and updating extensions to the OGC Metadata framework, TimeseriesML (Time series Markup Language) which will also include a JSON encoding, the “SensorThings” Application Programming Interface (API) Standard, use-cases requirements for a draft OGC JSON (Java Script Object Notation) specification and its associated geographic (GeoJSON) extension, extensions to the OGC Web Map Services specification, work on improved security for web services, a temporal extension for Well Known Text (WKT) encoding and the development of a point cloud data product specification.

The following new OGC standards that may be relevant to IHO work were approved in 2015: GML Application Schema (Coverages JPEG2000), Web Processing Service (WPS) 2.0 Interface Standard, Web Map Tile Service: Simple Profile (WMTS Simple); Network Common Data Format (CF-netCDF) 3.0 encoding using a GML (Geographic Markup Language) Coverage Application Schema, KML (Keyhole Markup Language) 2.3, Earth Observation Metadata Profile and Web Coverage Service Interface Standard for Transaction Extensions. There were discussions on the use of the Hierarchical Data Format (HDF5) and on testing the inclusion of ISO-19115 metadata in HDF5. HDF is currently used in the Bathymetric Attributed Grid (BAG) specification and the IHO S-102 product specification. It will also be included as an encoding format in the next edition of the S-100 Standard.



The OGC has recognised that there is a need for interoperability in LiDAR standards. Several presentations were provided on LiDAR formats, including hydrographic LiDAR. Associated with this, the OGC has established a Domain Working Group (DWG) to address interoperability issues with point cloud data. The aim of the Working Group is to broaden the understanding of point cloud data and improve data interoperability.

The OGC has commissioned test bed projects to test the applicability of its standards with the outcomes of these projects being provided as engineering reports. The engineering reports that are of relevance to the S-100 Working Group include “*Testbed 11 DGIWG GMLJP2 Testing*,” “*Testbed 11 Referenceable Grid Harmonization*” and “*Symbology Mediation*.”

A presentation on the Australian “Data Cube” project was provided by Dr Minchin. This project has enabled three decades of Australian satellite imagery, spanning Australia’s total land area at a resolution of 25 square metres, to be made available for public access and analysis. The presentation highlighted how Australia’s vegetation, land use, water movements and urban expansion has changed over the past 30 years.