

**8<sup>th</sup> MEETING OF THE IHO-INTER REGIONAL COORDINATION COMMITTEE  
IHO IRCC-8**

**ABU DHABI, UAE, 29-31 MAY 2016**

**Update on the development of the IHO GIS**

<b>Submitted by:</b>	IHB
<b>Executive Summary:</b>	This paper reports on the progress in developing the IHO GIS and related web-based services.
<b>Related documents:</b>	IRCC7-05B - <i>Report of the IHO Secretariat</i> IRCC7-09B - <i>Update on the IHO ENC Catalogue</i> IHO CL 89/2015 - <i>Modernization of IHO Publication S-11 Part B International Chart Web Catalogue and Associated on line web based services</i>

**General**

1. Work has continued since IRCC-7 on the development of the IHO GIS which is composed of two main parts: a country information database and a regional information database. As regard related web-based services, the main achievement since IRCC-7 has been the implementation of the INTtoGIS services. Some improvements have been made to the IHO ENC Catalogue and the development of an on-line registration service for IHO meetings has been initiated.

**IHO Country Information Database**

2. The country information database has been progressively upgraded to include additional administrative information and facilitate the maintenance of the Yearbook (IHO Publication P-5) and related lists posted on the IHO website. These documents are now continuously updated. An enhanced internal interface has been developed to facilitate the export of data in support of the work of the Secretariat.

3. Table 1 provides statistics on the currency of the information provided by Member States.

*Table 1  
Statistics on the currency of Member State information in the IHO Yearbook (P-5)  
Status as of 30 April 2016*

Year of last update	Number of Member States	Comments
2012	4	China, Estonia, Pakistan, Suriname
2013	9	Cyprus, DPRK, Jamaica, Latvia, New Zealand, Serbia, Singapore, South Africa, UAE
2014	16	
2015	33	
2016	23	

4. IHO Member States are invited to review their entry in the Yearbook on an annual basis and provide the IHB with the appropriate updates or report no change. A template is available on the IHO website to report updates (Home > Standards & Publications > Download > Periodical Publications > P-5).

## Regional Information Database

5. An Esri-based GIS solution has been implemented to develop further the regional information database. This enables access to various layers of information through the IHO website and through cloud-based on-line GIS options. The IHO ENC Catalogue and the IHO GIS for Antarctica have been transferred to this new environment. The IHB welcomes any feedback on the use of these applications.

6. Work has continued on developing a GIS database application to support C-55 - *Status of Hydrographic Surveying and Charting Worldwide* and the work of the IHO. An option where the C-55 data is overlaid over approximate EEZ limits is currently being assessed, for internal IHB use only.

7. Table 2 provides statistics on the currency of the information available in C-55.

*Table 2  
Statistics on the currency of C-55 information  
Status as of 30 April 2016*

Year of last update	Number of Areas (excluding land-locked countries)	Comments
/	25	Bosnia-Herzegovina, Brunei Darussalam, Costa Rica, Dominican Republic, DPRK, Egypt, Georgia, Guatemala, Haiti, Indonesia, Kuwait, Libya, Marshall Islands, Nicaragua, Palau, Panama, Papua New Guinea, Qatar, Sierra Leone, Suriname, Turkmenistan, UK - Turks & Caicos Is, USA - Kingman Reef & Palmyra Island, Yemen, Yemen - Socotra Is
2003	1	Algeria
2004	23	Albania, Angola, Belgium, Cambodia, Chile, Chile - Easter Is & Salay-Gomez, Chile - Islas Juan Fernandez, Chile - Islas San Ambrosio & San Felix, Croatia, Dem. Rep. of the Congo, Ecuador - Galapagos Islands, Eritrea, Guinea Bissau, Liberia, Russian Federation - Area N, Saudi Arabia - Area I, Saudi Arabia - Area J, Singapore, Slovenia, St Lucia, Vanuatu, Viet Nam, Western Sahara
2005	6	China - (including Hong Kong and Macau SAR), Cuba, El Salvador, Honduras, Iraq, Paracel Is
2006	2	Antarctic Peninsula, Antarctica - excluding Peninsula
2007	22	Antigua & Barbuda, Bahamas, Belize, Dominica, Fiji, Ghana, Grenada, Guyana, Jamaica, Jordan, Kiribati, Maldives, Malta, Mauritius, Montenegro, Nauru, Nigeria, Spratly Islands, Sri Lanka, St Kitts & Nevis, Tuvalu, USA – Puerto Rico, US Virgin Islands & Navassa Island
2008	3	Australia - Heard Is, Myanmar, Oman
2009	5	Bulgaria, Malaysia, Morocco, Seychelles, Venezuela
2010	15	Iceland, Japan, Japan - Minami Tori Shima, UAE, UK - Anguilla, UK - Bermuda, UK - British Indian Ocean Territory, UK - British Virgin Is, UK - Cayman Is, UK - Falkland Is & Dependencies, UK - Gibraltar, UK - Montserrat, UK - Pitcairn & Dependencies, UK - S Georgia and S Sandwich Is, UK - S Orkney and S Shetland Is
2011	8	Cabo Verde, India, Philippines, Poland, Russian Federation - Area K, South Africa - Prince Edward Is, Syria, Timor Leste

Year of last update	Number of Areas (excluding land-locked countries)	Comments
2012	22	Australia, Australia - Christmas Is, Australia - Cocos (Keeling) Is, Australia - Macquarie Is, Australia - Norfolk Is, Estonia, Mexico, Mozambique, Namibia, Norway - Peter I Øy, Palestinian Authority, Rep of Korea, Solomon Islands, Somalia, Uruguay, USA, USA - Alaska and Arctic, USA - American Samoa, USA - Guam and Wake Is, USA - Hawaii, Midway Is, Johnston Atoll, USA - Howland & Baker Is, USA - Jarvis Is
2013	17	Canada, Canada - Arctic, Canada - East Coast, Cyprus, Denmark - Greenland-NE Coast, Denmark - Greenland-NW Coast, Iran, Ireland, Lithuania, Norway - Area N, Romania, Sao Tome & Principe, St Vincent & the Grenadines, Sudan, Thailand, Trinidad & Tobago, Turkey
2014	23	
2015	62	
2016	6	

8. The number of areas with no data or with data more than five years old represents 43% of the total number of areas listed in C-55 (excluding areas related to land-locked countries). RHCs are invited to ensure that entries related to their region are updated on an annual basis and that the appropriate updates or reports of no change are provided to the IHB. This can be done through national reports to RHC meetings in accordance with the IHO Resolution 2/1997 as amended - Establishment of Regional Hydrographic Commissions (RHC).

9. In accordance with actions IRCC7/24 and 25 and in response to the request to complement C-55 composite data with CATZOC information (see IHO CL 52/2015), CATZOC data was provided by PRIMAR - on behalf of IC-ENC, PRIMAR and Canada, Singapore, Sweden and Thailand. Portrayal options in the IHB C-55 GIS are being investigated.

### **IHO ENC Catalogue**

10. The IHO ENC Catalogue can be accessed from the IHO web site at Home > ENCs, ECDIS & S-100 > ENC Availability. The application provides a web map service for each of the 6 ENC usage bands. In 2015, the IHO ENC Catalogue was moved into an Esri GIS environment. The IHO ENC Catalogue is updated on a monthly basis.

11. All actions raised at the WENDWG6 meeting in relation with the IHO ENC Catalogue (WENDWG6/06, 6/15, 6/16, 6/17) are in progress or under consideration.

### **INT Chart Web Catalogue and Associated On-Line Web-based Services (INToGIS)**

12. As reported to IRCC7, the IHB has initiated the development of an on-line web-based interactive version of IHO Publication S-11 Part B -Catalogue of INT Charts. This project, called "INToGIS", contributes to the development of the IHO Geographic Information System (GIS). The project has been generously supported by the Korea Hydrographic and Oceanographic Agency (KHOA). The objective of the project is to provide the Regional International Charting Coordination WGs with relevant on-line updated information and the necessary tools to review and maintain INT chart schemes and monitor the implementation of the INT chart schemes. Extending the capability to include ENC scheming and coverage is also envisaged (action WENDWG6/06 refers).

13. As announced in IHO CL 89/2015, the new INT Chart Web Catalogue and the associated INT Chart on-line Web Manager services were made available in January 2016 through the IHO website at: [www.iho.int](http://www.iho.int) > Standards & Publications > S-11 > Part B (link).

14. Producer and Printer Nations and the INT Chart Coordinators/ICCWGs were invited to contact the IHB in order to obtain a user name and password. As of 30 April 2016, three Coordinators had not requested their user name and password, and only 15 Producer/Printer Nations had requested (and obtained) login identification.

15. Feedback and lessons learned from the initial use of the services and from the implementation of the experimental procedure for the review and monitoring of INT charts decided at IRCC7 (IHO CL 64/2015 refers)

were addressed during the workshop for Regional INT Chart / ENC Coordinators that was held at the IHB on 25 April 2016, immediately before the second meeting of the Nautical Cartography Working Group. The INT Chart / ENC Coordinators of 14 out of 15 charting regions were present or represented. . A comprehensive demonstration of the INTToGIS web-based INT chart scheme management tool was provided. A reminder was made at the workshop that relatively few Producer/Printer Nations had requested login identification.

16. An upgrade of the INTToGIS has been requested by one Coordinator to allow ICCWG/Charting Groups using the on-line interface to assess preliminary proposals prior to formal consideration and final decision by the relevant RHC.

### **On-Line Registration Service for IHO Meetings**

17. As indicated in IHO CCL 1 dated 21 April 2016, the Directing Committee has decided that registration for the XIX<sup>th</sup> International Hydrographic Conference / 1<sup>st</sup> Session of the IHO Assembly will be available on-line via the IHO website from 1 September 2016. Because of IT security issues, the initial version of the tool will be self-contained, with no connection to the CIS. The initial registration of the identity of applicants will be validated by the IHB. After this initial approval, legitimate applicants will be able to register for further IHO meetings without having to re-enter their details.

18. A beta-version, developed with the support of KHOA through the Project Officer seconded by the Republic of Korea, underwent a blank test at the IHB in April. Internal IHB tests will continue in May based on past meetings. It is expected that the tool will be used in full scale testing as part of registering HSSC8 participants.

### **Proposals**

19. IRCC is invited to:

- a. **Note** this report;
- b. **Request** RHCs to review entries related to their region in IHO C-55 and P-5 (Yearbook) at least annually;
- c. **Provide** guidance on further development of the IHO GIS that may be required to support its work;
- d. **Take** any other actions as it considers appropriate.