OGC Marine Domain Working Group Sebastian Carisio, Co-chair Jonathan Pritchard, Co-chair

BS-NSMSDIWG Workshop Virtual | 24 August 2020

The world's leading and comprehensive community of experts making location information:



Findable



Accessible



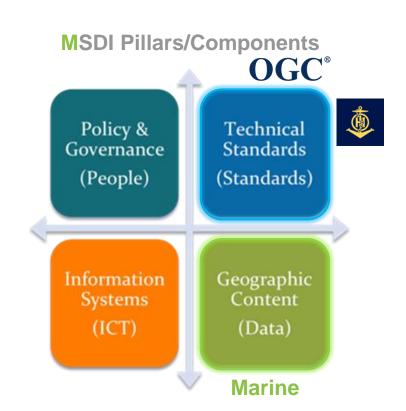
<u>I</u>nteroperable



Reusable



- Close working relationship between MSDIWG and Marine DWG.
- IHO & OGC standards are considered by both groups.
- Ensures best practices for the interoperability and wider use of marine geospatial data.



IHO & OGC MoU

Wide Web.



- WHEREAS, the IHO and the OGC are addressing business processes and technical issues related to the advancement of hydrographic and geographic content sharing and visualization, and the advancement and use of the advancement and use of the street of the
 - Recitals:

 WHEREAS, the IHO is an intergovernmental consultative and technical organization that was established in 1921 to contribute to making navigation easier and safer throughout the world by improving mantical clarts and documents, particularly through the sorting of standards for the production of hydrographic data and the provision of hydrographic services, through the coordination of the hydrographic netivities of all cruestal and interested States, and through capacity building of national hydrographic netivities of all cruestal and interested States, and through capacity building of national hydrographic netivities of all cruestal and interested States, and through capacity building of national hydrographic networks.

 WHEREAS, the OGC is a not-for-ground control of the national formation technology (IT) systems that process gen-referenced information.

 WHEREAS, the IHO and the OGC are addressing business processes and technical issues related to the advancement of hydrographic and geographic content sharing and visualization, and the all natural ground up of the "Total Control of the particular to th
- WHEREAS, the IHO and the OC are addressing business processes and electrical insures related to the description of process government and advancement of hybridistic processes and electrical insures related to the description of process government and advancement of hybridistic processes and electrical insures related to the description of process government and advancement of hybridistic processes and electrical insures related to the description of process government and advancement of hybridistic process government of hybridistic pr

Open Geospatial Consonti

hall be sent by email to the address of the other

- In the any activity hused by the enter Party, the E and confidentiality of the Party will be hinding.

 1. GENERAL

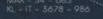
 1. The IHO and the OGC with the aim of effectively attaining the objectives set forth in their respective constituent instruments through collaborating on the development of their relevant standards related to bytrography and enatitied clearing, will act in clear cooperation with each other read will consider clear their product clear through collaborating one the development of their relevant standards related to bytrography and enatitied clearing, will act in clear cooperation with each other reads clear other regularly with regard to matters of common interest.

 1. Both organizations agree to keep each other informed on current and plurated activities in which there was be mutual interest.

 1. Both organizations agree to keep each other informed on current and plurated activities in which there was be mutual interest.

 1. The Official Lie Only", or otherwise zon-
- WHEREAS, the IHO and the OGC wish to harmonize their respective work programs, achieve mutual benefit from sharing expertise of domain experts of the two organizations and welcome cross project participation where appropriate.

- There is a gap in the current OGC baseline regarding marine geospatial data with an emphasis on hydrography and ocean mapping.
- To support smart exchange methods required for interoperability with organizations such as the International Hydrographic Organization (IHO) and International Oil and Gas Producers (IOGP) and their data standards.
- Motivated by the widening use of marine data for purposes other than safe navigation, described frequently as Marine Spatial Data Infrastructure (MSDI).



Problem Statements for OGC Marine DWG

 Geospatial data has been successfully standardized for navigational purposes by hydrographic agencies for years.



Data now in demand for a much wider range of applications.



- Chart data is a major source of information but does not lend itself automatically for wider use.
 - Bathymetric grids, points clouds, seafloor sediment mosaics and water column data may require further standardization.
 - Data volumes and sources are increasing driving standardized sensor processing and management techniques.

Marine DWG Mission and Role

• The **mission** of the Marine DWG is to broaden the use of marine data through the understanding of the interoperability-related requirements for relevant use cases.

- The role of the Marine DWG is to serve as a forum within OGC for marine data issues; to present, refine and focus interoperability-related issues to the Technical Committee; and to serve where appropriate as a liaison to other industry, government, independent, research, and standards organizations active within the marine domain.
 - Since formally established in June 2016, the Marine DWG meets almost quarterly at OGC's Technical Committee (TC) meetings, and jointly with IHO MSDIWG and UN-GGIM Working Group on Marine Geospatial Information (WG-MGI).

- 4 Co-chairs: NGA, UKHO, IIC Technologies, Teledyne CARIS
- 119 signed up to Marine DWG email list
 - lists.opengeospatial.org/mailman/listinfo/marine.dwg
- Marine DWG Twiki
 - https://external.opengeospatial.org/twiki_public/MarineDWG/WebHome



Point Cloud

- Use of point clouds increasing with LIDAR, also Sonar data often stored as clouds.
- Joint Marine DWG / Point Cloud Session

MetOcean

• Dealing with Met more than Ocean currently however much work done on netCDF for modelling.

Big Data

Data cubes, non-SQL databases, handling the 3V's – Velocity, Volume, Variety.

DGGS

- Discrete Global Grid System
- Joint session with Marine DWG

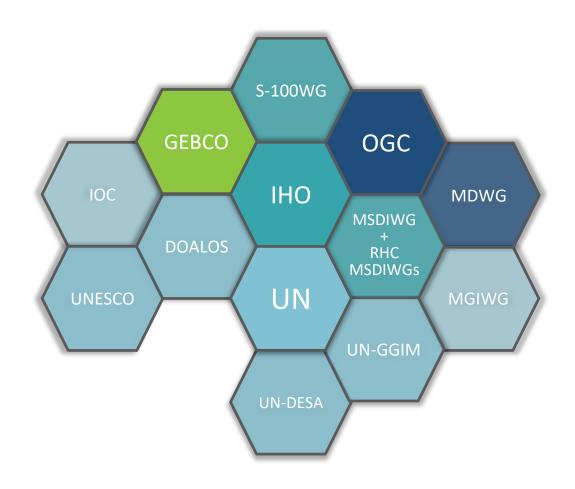
SensorThings

Smart sensor networks and the IoT.

- Close of OGC Pilot project on Maritime Limits and Boundaries.
 - Outputs to IHO standards in progress and should result in a GML Schema forming part of the point release for the IHO standard.
- Improvements and tighter alignment between IHO and OGC standards a basis for interoperability between models.
- Input to UN-GGIM and discussions over Integrated Geospatial Information Framework (IGIF) for Water.
- MSDI Pilot is ongoing development
 - Follow-on to IHO-OGC Marine SDI Concept Development Study
 - https://portal.opengeospatial.org/files/?artifact_id=88037
- Engagement with Discrete Global Grid System (DGGS) DWG, and marine applications of DGGS through the GEBCO 2030 Project.

International Marine Data Governance





Graphic Reference - J. Pritchard, "UN-GGIM, MGIWG &IOC", Presentation, 104th OGC Technical Committee, Southampton, United Kingdom, 12 September 2017