



OGC Activities Relevant to HSSC 8

The creation and aspirations for the Marine Domain Working Group

By Andy Hoggarth, Chair of Marine DWG

MOU between IHO and OGC



- Circular letter 53/2016, 5th October – Establishment of a MOU of understanding between the IHO and the OGC
- Objectives
 - *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 hydrography and nautical charting, will act in close cooperation with each other regularly with regards to matters of common interest*
 - *Both organizations agree to keep each other informed on current and planned activities in which there may be mutual interest*
 - Liaisons from both organizations may participate in relevant bodies, groups and meetings as non-voting members

Purpose of the Marine DWG



- 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).

Functions of an OGC DWG



- Provide a forum for discussion and documentation of interoperability requirements
- Provide a forum to discuss and recommend document actions related to Interoperability Program Reports;
- Develop Change Requests for existing OGC Standards;
- Develop engineering reports for release as OGC White Papers, [Discussion Papers](#) or [Best Practices Papers](#);
- Provide informational presentations and discussions about the market use of adopted OGC Standards;
- Have a formal approved charter that defines the DWG's Scope of Work;
- Have all-member voting policies
- Have missions and goals defined by the TC.

Problem Statement for 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 increasing driving standardized sensor processing and management techniques.

Mission and Role for Marine DWG



1. 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.
2. 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.

Business Case for Marine DWG



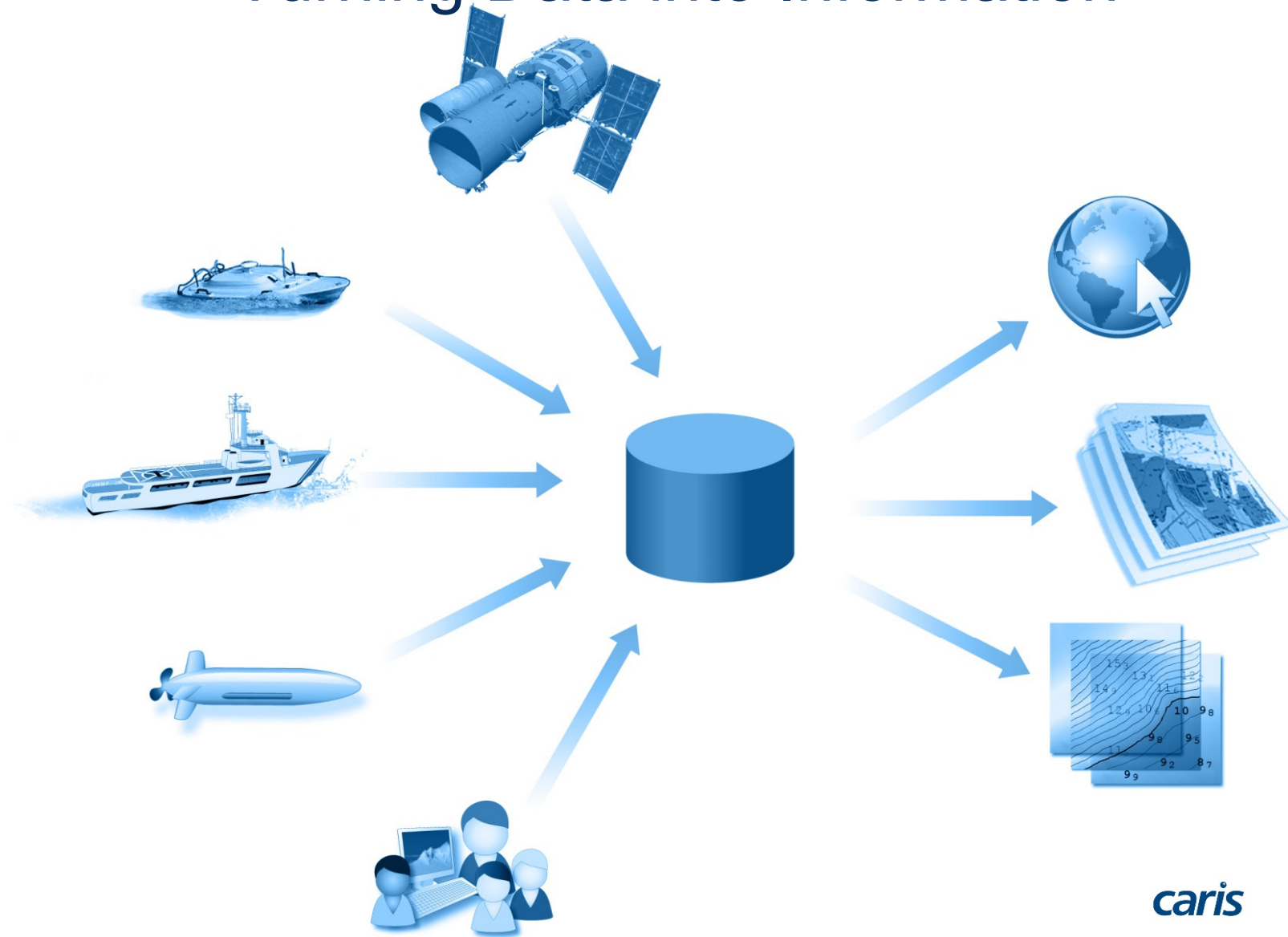
- Two thirds of the earth is ocean, it is the source of our food, energy, it governs our climate, it is the main method for transporting goods around the world, yet only 5% of it has been mapped and charted at high resolution.
- In order to increase this it is important to reach a broader group of stakeholders
- It is critical that the data collected in increasing volumes by an increasing number of data sources can be used effectively to support a Blue Economy

Key Activities of Marine DWG



1. Discuss the content of a conceptual model for a MSDI.
2. Discuss the types of OGC services useful in providing hydrographic and seafloor survey data through standardized interfaces.
3. Define any areas for standardization and create necessary SWG's to address the gaps in the standards baseline.
4. Explore the potential for an interoperability pilots and testbeds to ensure that marine geospatial data can be used for purposes other than navigation.
5. Determine the Big Data potential for marine data and identify standardized interfaces and testbeds.

Turning Data into Information



caris

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Marine DWG Members



- There are currently 56 members
- With only a handful from Hydrographic Offices
- Group chairs include:
 - Sebastian Carisio – NGA
 - Jonathan Pritchard – UKHO
 - Andy Hoggarth – Teledyne CARIS

Future Work Program fro Marine DWG



- Meeting at 101st Technical Committee, Taichung, Taiwan, Dec 6th
 - GSDI Marine/Coastal SDI Best Practice by Roger Longhorn
- Full day meeting of the Marine DWG at the MSDIWG to be held in Vancouver, Canada, Jan 30th or Feb 3rd
 - Develop work program with input from MSDIWG
 - Explore opportunities within Arctic SDI initiatives
- Look at upcoming OGC TC meeting calendar in 2017 as a venue to meet to discuss progress

Other OGC DWG's of Interest to IHO



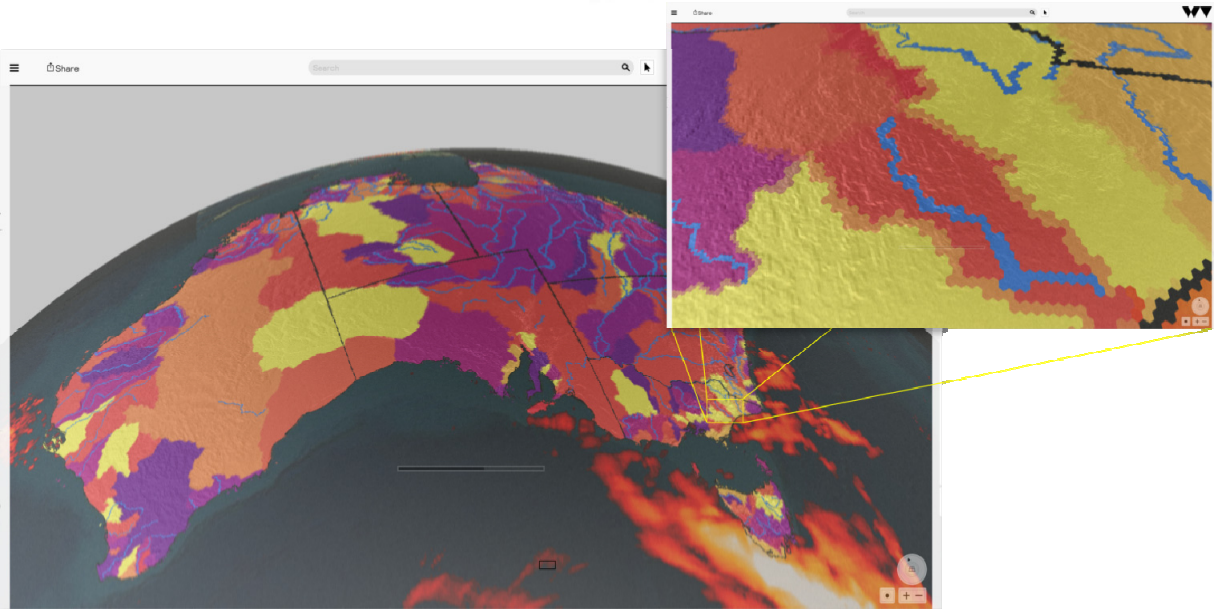
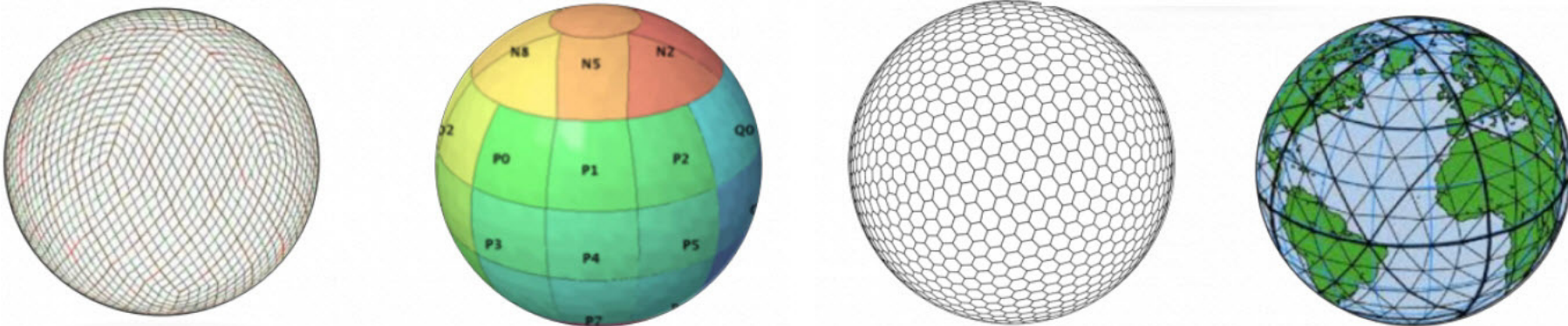
- Point Cloud – Use of point clouds increasing with Lidar, also Sonar data often stored as clouds
- MetOcean – Dealing with Met more than Ocean currently however much work done on netCDF for modelling
- Big Data – Data cubes, non-SQL databases, handling the 3V's – Velocity, Volume, Variety
- CRS – Driving new standards like the DGGS initiative
- SensorThings – Smart sensor networks and the IoT

Point Cloud Example



82 million points
Area = 300m x 700m
20 minutes to collect

DGGS Example



Common Operating Picture for Oil Spill Response



- Reported on this at HSSC6 in Chile
- A good example of a practical Marine SDI
- The work was done as OGC interoperability project
- Highlights how standard organizations (OGC, IOGP and IHO) can work together to solve a real world problem
- The report has been posted on the documents website for this meeting for your interest

Action requested of HSSC



- Encourage member state participation in the Marine DWG
- Encourage regional member state participation at OGC TC meetings either in person or remotely via web conference
 - *It's important the Hydrography has a voice and an opportunity to compare ideas with peers in the wider geospatial community*
- Consider passing wider geospatial research topics important to the HSSC to the Marine DWG for pursual in the Marine DWG work program