Overview of OGC and Marine DWG for GEBCO SCRUM and TSCOM

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Introduction

To serve as a global forum for the collaboration of developers and users of spatial data products and services, and to advance the development of international standards for geospatial interoperability

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OGC standards are broadly applicable to exchange and web enablement of bathymetry data

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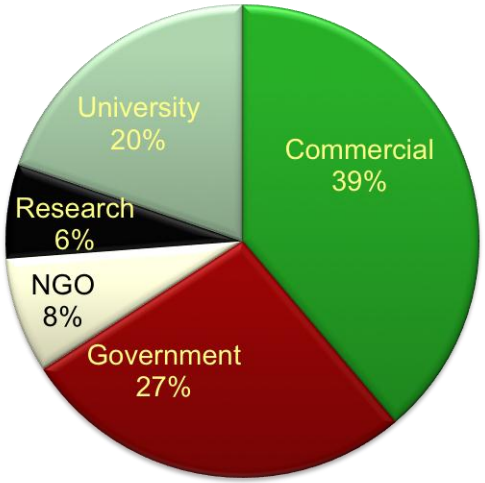
The Open Geospatial Consortium Membership Update

Not-for-profit, international voluntary consensus standards organization; leading open standards innovation for spatial data

- Founded in 1994
- 520+ member organizations
- 50 Open Standards
- 100+ Innovation initiatives (e.g. Pilots)
- 997 products, 6297 implementations
  - That we know of, there are many more!
- Enabling access to 100,000 datasets



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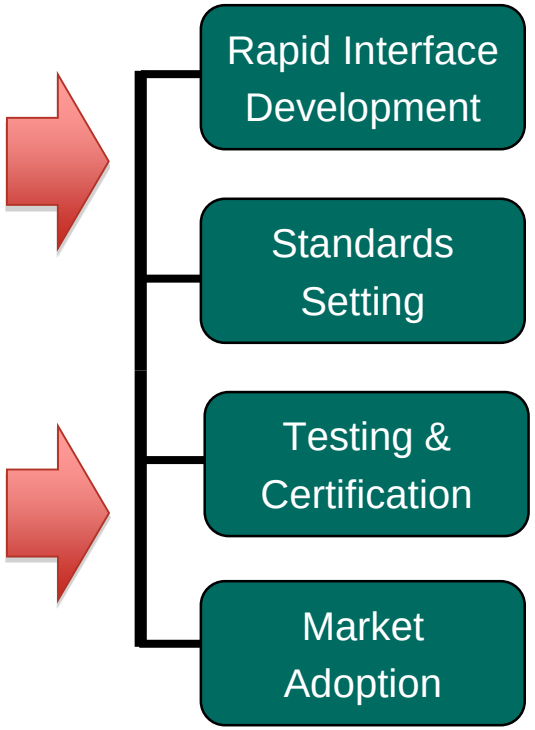
OGC Programs – Advancing Interoperability

- ***Innovation Program*** - global, innovative, rapid prototyping program uniting users and industry in accelerating interface development and delivery of interoperability to the market

- ***Standards Program*** – Consensus standards process similar to other Industry consortia (World Wide Web Consortium, OMA etc)

- ***Compliance Program*** - allows organizations that implement an OGC standard to test their implementations with the mandatory elements of that standard

- ***Communications and Outreach Program*** – education and training, encourage take up of OGC specifications, business development, communications programs



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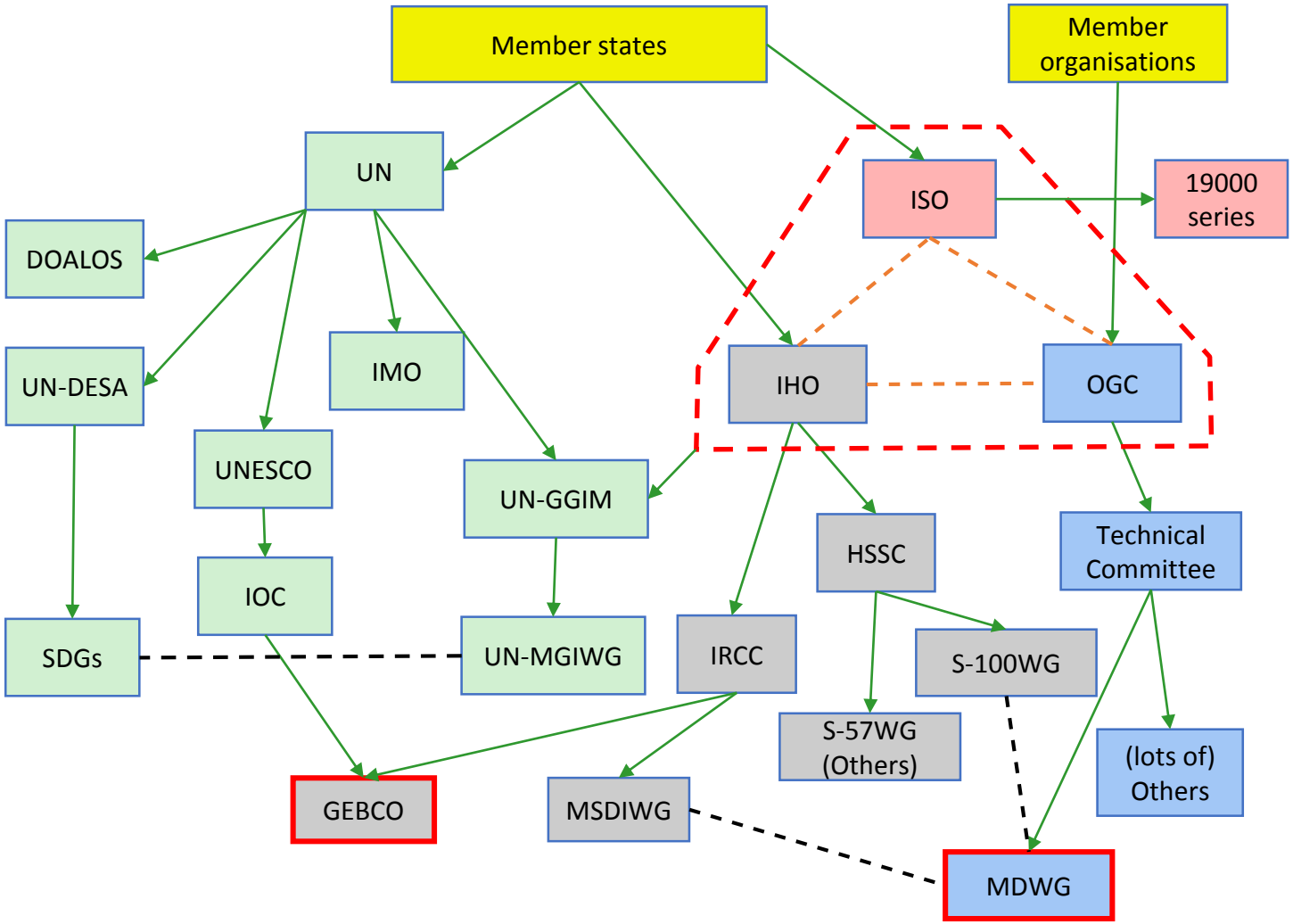
Relationship diagram between Groups



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Purpose for establishing the Marine DWG

- There was a gap in the current OGC baseline regarding marine geospatial data related to hydrography and ocean mapping
- Support smart data exchange, improved interoperability between all users of geospatial data
- Motivated by the widening use of marine data for purposes other than safe navigation, including Marine Spatial Data Infrastructure (MSDI), science, natural resources, fisheries, tourism etc.
- To provide a common voice between standards and policy groups IHO, ISO, IOGP, UN-GGIM, IOC etc.

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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.

http://external.opengeospatial.org/twiki_public/MarineDWG/WebHome

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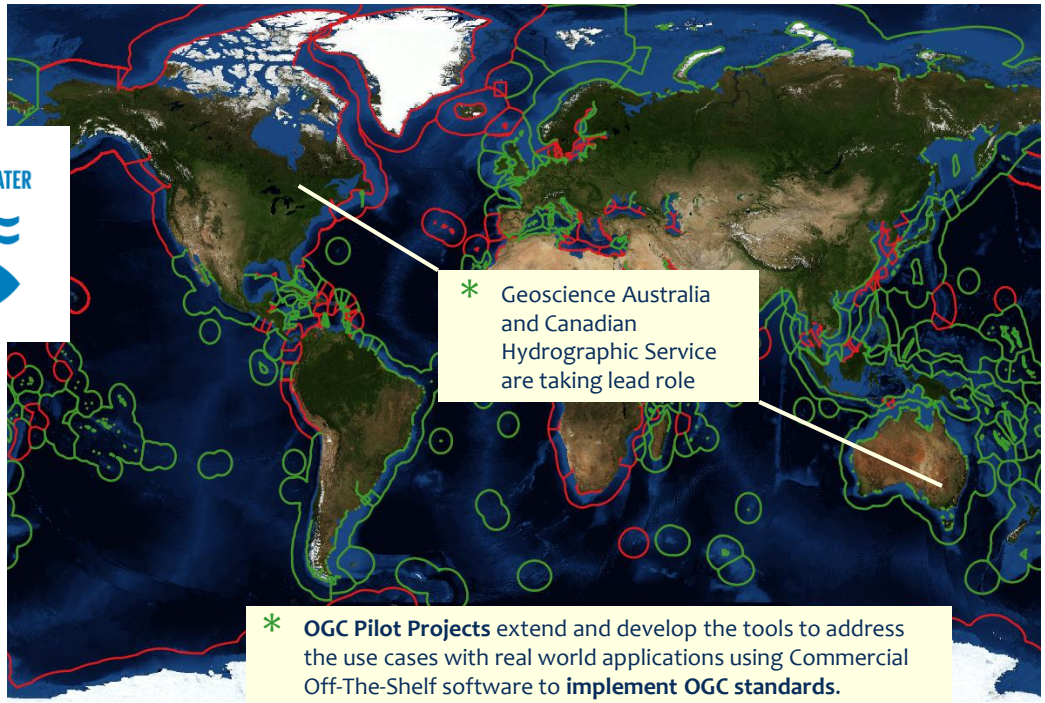
S-121 Standard for Maritime Limits and Boundaries

- UN asked IHO to improve the compatibility of this data with GIS
- Related to the UN sustainable development goals 14.C
- IHO and OGC are working together on this standard, good example!
- Utilizing IHO S-100 standard and ISO Land Administration standard 19152
- OGC Innovation program to engage industry to further polish and integrate the standard within a community of users

14 LIFE BELOW WATER



* Geoscience Australia and Canadian Hydrographic Service are taking lead role

* **OGC Pilot Projects** extend and develop the tools to address the use cases with real world applications using Commercial Off-The-Shelf software to **implement OGC standards**.

* The Pilot Project will deliver a substantial **demonstration in December 2018** at a meeting of the S-121 Project Team at the UN headquarters, and a final revisions by March 2019.

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Marine Spatial Data Infrastructure Concept Development Study (MSDI-CDS)

- MSDI-CDS
  - Organized by OGC and is supported by the National Geospatial-Intelligence Agency (NGA) on behalf of the IHO and its MSDI focused work program
- MSDI-CDS Workshop (23 OCT 2018)
  - Panel: Marine Uses of Spatial Data Infrastructures
  - Panel: Meeting U.S. Government Needs for Marine Spatial Data
  - Panel: MSDI Geospatial Technology, Standards and Services
- Next Steps: Request For Information (RFI)
  - RFI will soon be posted on OGC's website and distributed broadly to international marine community
  - Responses are greatly encouraged
  - Innovation Program Pilot Project to follow, will need partner organizations

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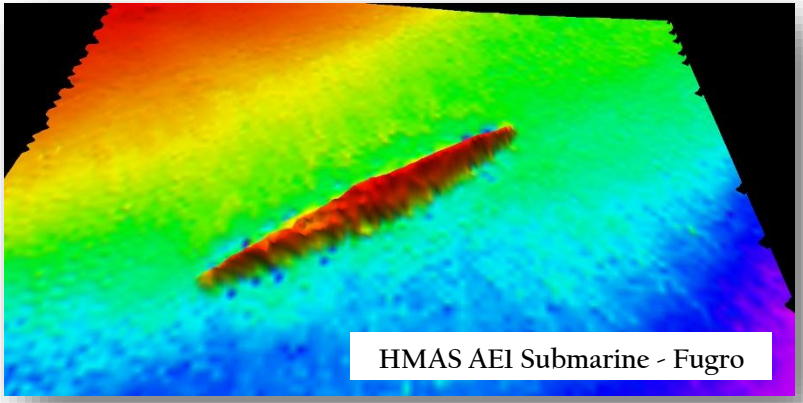
Interoperability of Bathymetry will be important



- Types and Formats of bathymetry
  - Point Clouds, Grids, VR Grids, Tracklines
  - S-102, BAG, GeoTIFF,
  - HDF, CSAR, XYZ, LAS
- Need for standardized metadata profiles
  - Quality, Uncertainty, CRS, Epoch, Source
- Need for standardized Web services connecting national databases, to regional data centres and then potentially to global access points for public
- OGC standards can help

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Other OGC Working Groups Of Interest

- Point Cloud – Use of point clouds increasing with Lidar, including Airborne Lidar Bathymetry and Laser Scanners, also Sonar data often stored as point clouds
- MetOcean – Much work done on netCDF for modelling, Coverage standards and Temporal aspects
- Big Data – Data cubes, non-SQL databases, Big Data CRS systems (DGGS)
- SensorThings – Smart sensor networks and GeoIOT
- New GeoAI group putting forward a charter for the establishment of a DWG

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OGC Marine / Maritime Summit and Technical Committee Meeting in Singapore

- Part of the TC meetings taking place Feb 25th to Mar 1st 2019
- Week before *MSDIWG meeting at KHOA (Korean Hydrographic Office), Busan
- Supported by Maritime and Port Authority (Singapore Hydrographic Office) and IHO
- At the National University of Singapore (NUS)

*note that MSDIWG is followed by 1 day OGC Marine DWG (6th Mar) and then UN-GGIM meeting

MPA SINGAPORE

NUS National University of Singapore

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