MDWG – The Way Forward

The 124th OGC Member Meeting

Meeting sponsor

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IIC Technologies
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Marine (SD) Organisations and Workgroups

WGMGI

MDWG   Working group   S100WG
MSDIWG

Organisation
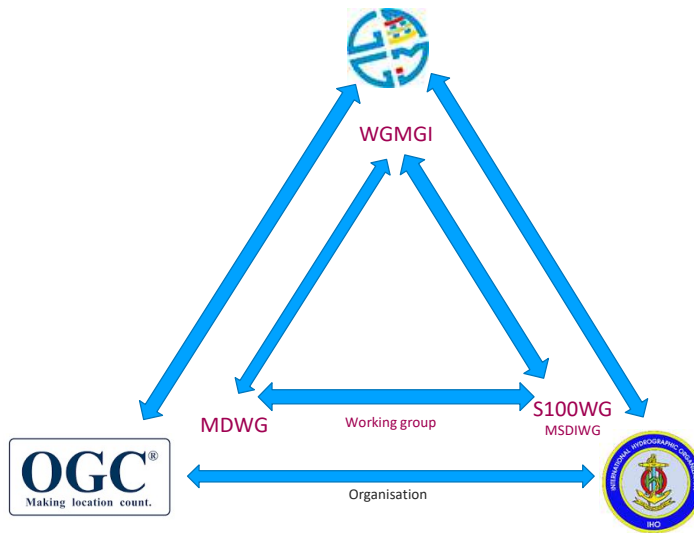
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Our Charter

- The Marine DWG is being established to :
  - **Address the gap in the OGC baseline** with regards to marine geospatial data
  - To ensure knowledge is **exchanged effectively** between the **relevant standards organizations**, the OGC membership and the **broader geospatial community**.
- Although this group will not be the platform for creating new standards, it will be the platform to **discuss and understand any issues, concerns, or barriers to interoperability** to ensure that marine data can be **used effectively by the wider communit**y.

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Planned Activities (wiki)

- **Serve as OGC TC focal point for complementary organizations that are working on MSDI best practices, such as the IHO MSDI Working Group and potentially other IHO committees.**
- **Discuss the content of a conceptual model for MSDI**
- *Research the requirements and processes needed to use S-57 and S-101 chart data for purposes other than safe navigation.*
- Research the requirements and processes needed to use high-resolution bathymetry data for purposes other than safe navigation.
- Explore the potential for an interoperability testbed to carry out these research activities and find sponsors and partners.
- Promote the development of OGC best practices and standards to meet the technical needs of MSDI.

Is this still accurate?

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From Singapore (2019) - Summary of Challenges identified

- Interoperability and discoverability, particularly for scientific data

- Datum harmonization, particularly vertical (land / sea) + coastal domain (+tide)

- Management and manipulation of temporal data in the marine domain (bathymetry, point clouds)

- Storage and handling for variable resolution data

- DGGS for data discovery and analysis

- Governance + policy for data sharing

- Interoperability and implementation of data catalogues. Not easy "to find everything relevant to my domain of interest"

- Metadata for bathymetry

- Security, provenance, authenticity

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Some ideas…

1. We need to mention FAIR: "Tools and technologies in support of FAIR"
   - By data type
   - By technology
2. MSDI and IGIF are the two main axes of our activities
   - We are focused on broad uses of marine geospatial data outside Navigation
   - We need clear defined distinctions for our communities. This is a challenge for the next combined meeting
3. We should ensure our stakeholders are defined:
   - Industry
   - Government
   - **Scientific research**
4. Standards for Broader Uses of Marine Geospatial Data
   - Drive alignment of S-100 with OGC API standards, identify "enabling" technologies and standards
   - Exploration of complementary scientific and industry standards and bodies
   - Spatial Modelling and content alignment
   - Implementation by "doing". Standards solve classes of problems, all at once…
5. Technology Watch
   - e.g. Digital Twin

IHO ↔ OGC

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FAIR Principles and MSDI/HO/S-100

- **F** - findable S-100 is modelled on ISO, in particular ISO19115 and includes detailed metadata and "structures for describing data structures" for metadata. OGC API Records can complement this.

- **A** - accessible. A combination of IHO/OGC plays a major part here.

- **I** - interoperability is significantly improved by using common modelling and data encapsulation) norms. IHO registry provides centralised definitions with flexible bindings. OGC complements this with web services which are similarly interoperable.

- **R** - reusable , this needs work from the MSDI community and IHO needs to work on this. Profiles which can be used for MSDI and navigational use cases are starting to emerge e.g s102 and now s122 but this needs buyin and action from the MSDI community to make sure they are represented in the modelling activities

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Planned Activities (wiki)

- Serve as OGC TC focal point for complementary organizations that are working on MSDI best practices, such as the IHO MSDI Working Group and potentially other IHO committees.
- Connect and showcase applicable stakeholder requirements and developments from Government, Industry and the scientific research community
- Support and develop methodologies for supporting the FAIR principles within the marine domain
- Research and report on re-use of hydrographic data for non-navigational purposes.
- Advance the development and implementation of testbeds
- Promote the development of OGC best practices and standards in the marine domain to meet the technical needs of MSDI.
- Work with IHO MSDIWG and UN-GGIM, allied bodies and the scientific community to promote harmonization of standards across the global geospatial community

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Some specifics…

- **Our activities are concerned with**
  - **Standards development and <u>implementation</u>**
  - **Pilots – demonstrating by doing**
  - **Noting and showing emerging trends and technologies.**
- **So:**
  - **Multi-resolution data**
  - **Bathymetry,**
  - **Geo-regulation, Governance and Provenance**
  - **Metadata**
  - **IGIF and IGIF-Hydro**
  - **Land/Sea interfaces**
  - **Digital Twins**

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We do GREAT projects, let's do more…

- **Multi-resolution data**
- **Bathymetry,**
- **Geo-regulation, Governance and Provenance**
- **Metadata**
- **IGIF and IGIF-Hydro**
- **Land/Sea interfaces (datum and model harmonization)**
- **Digital Twins**

How to aggregate API endpoints? $\mathcal{F} + \mathcal{S} \rightrightarrows \mathcal{G}$

- Interoperability and discoverability, particularly for scientific data
- **Datum harmonization, particularly vertical (land / sea) + coastal domain (+tide)**
- **Management, transportation and manipulation of temporal data in the marine domain (bathymetry, point clouds)**
- Storage and handling for variable resolution data
- DGGS for data discovery and analysis
- **Governance + policy for data sharing**
- Interoperability and implementation of data catalogues. Not easy "to find everything relevant to my domain of interest"
- Metadata for bathymetry
- **Security, provenance, authenticity**

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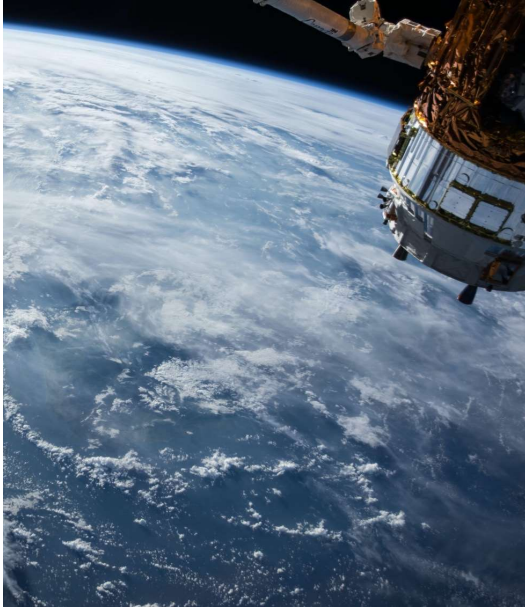
Thank You

Community

500+ International Members
110+ Member Meetings
60+ Alliance and Liaison partners
50+ Standards Working Groups
45+ Domain Working Groups
25+ Years of Not for Profit Work
10+ Regional and Country Forums

Innovation

120+ Innovation Initiatives
380+ Technical reports
Quarterly Tech Trends monitoring

Standards

65+ Adopted Standards
300+ products with 1000+ certified implementations
1,700,000+ Operational Data Sets
Using OGC Standards

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