OGC Activities Affecting HSSC

Presented by

Trevor Taylor, OGC,

ttaylor@opengeosptial.org

Andy Hoggarth, Co-Chair, OGC Marine DWG,
Andy.Hoggarth@Teledyne.com

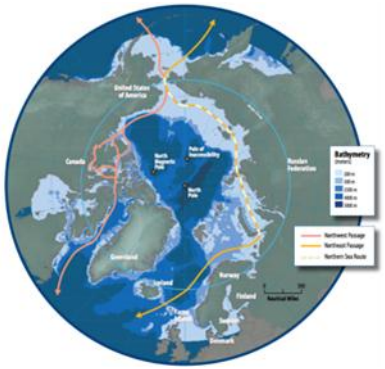
Doc #: HSSC9-07.8A

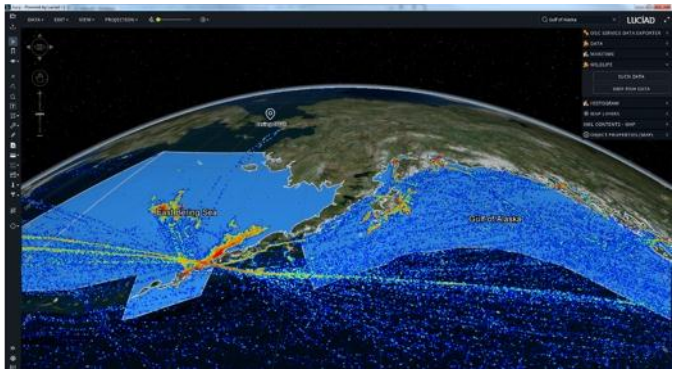
9 November, 2017

OGC®
Making location count.

The OGC Mission

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





Shipping activities & Arctic wildlife

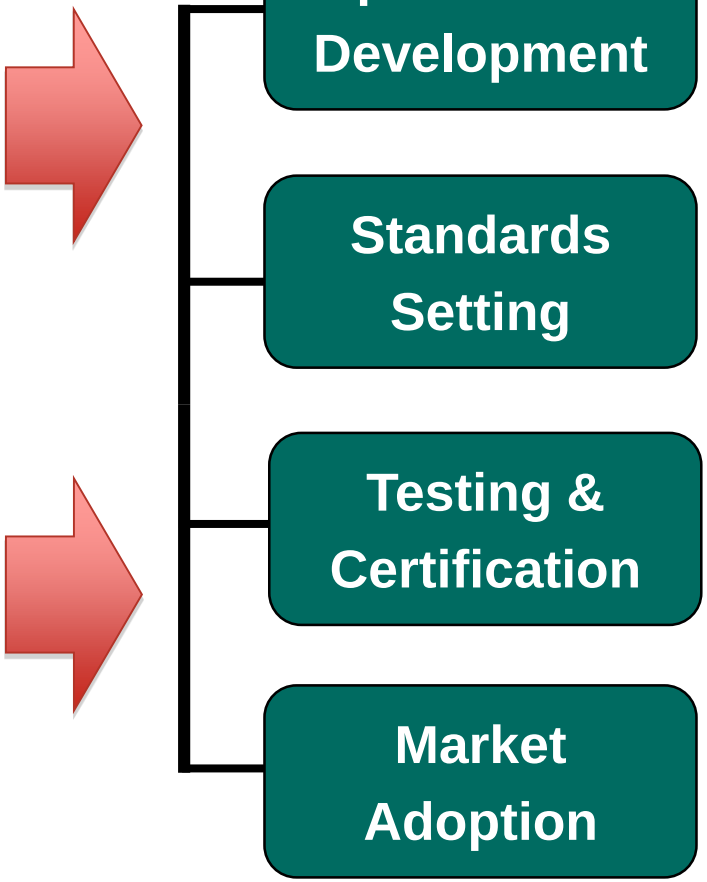
Source: http://www.opengeospatial.org/pub/ArcticSDP/assets/slides/ArcticSDP_90.pptx

OGC®

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

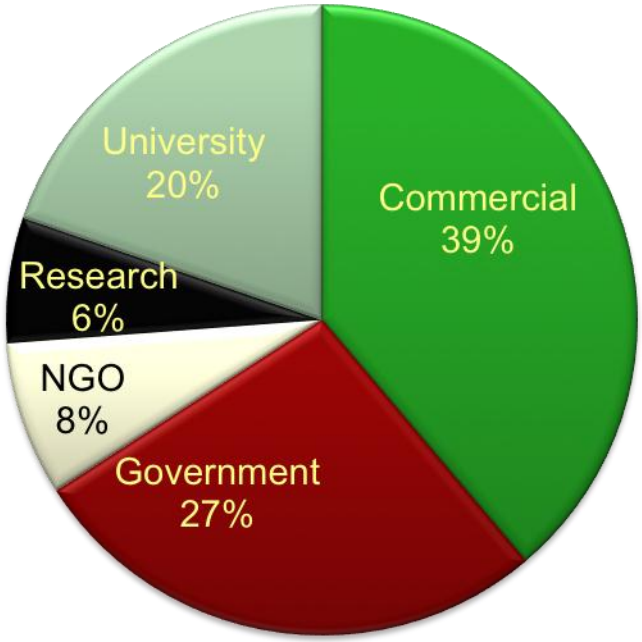


OGC®

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)
- 934 products, 5784 implementations
  - 810 Implementations formally certified
  - That we know of, there are many more!
- Enabling access to 100K+ datasets

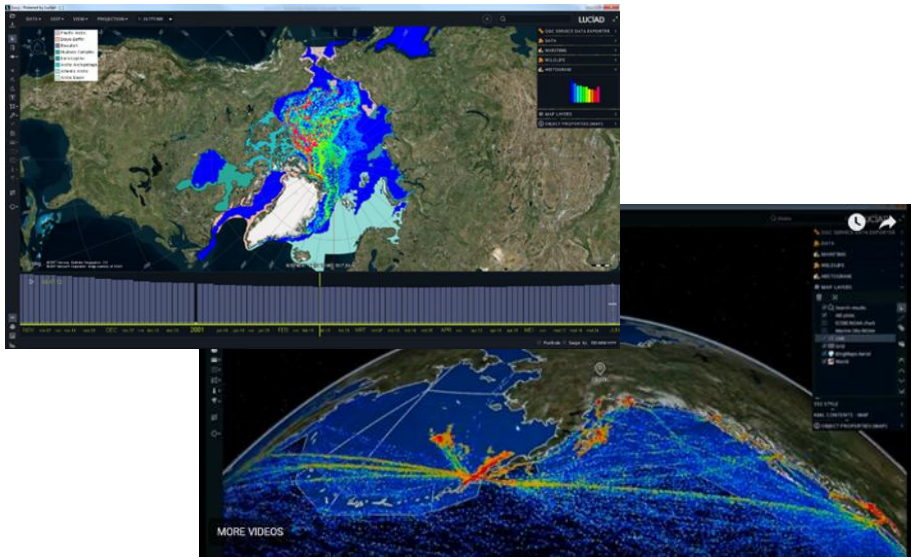


OGC®

Completed - Arctic SDP

- Scenarios
  - Sea ice age evolution: Beaufort Gyre
  - Shipping activities & Arctic wildlife
  - Search & Rescue in the Hudson Strait
  - Modeling, Forecasting & Complex Data Analysis – Permafrost
  - 3D Data Visualization & Temporal Patterns – Caribou Migration
  - Food Security

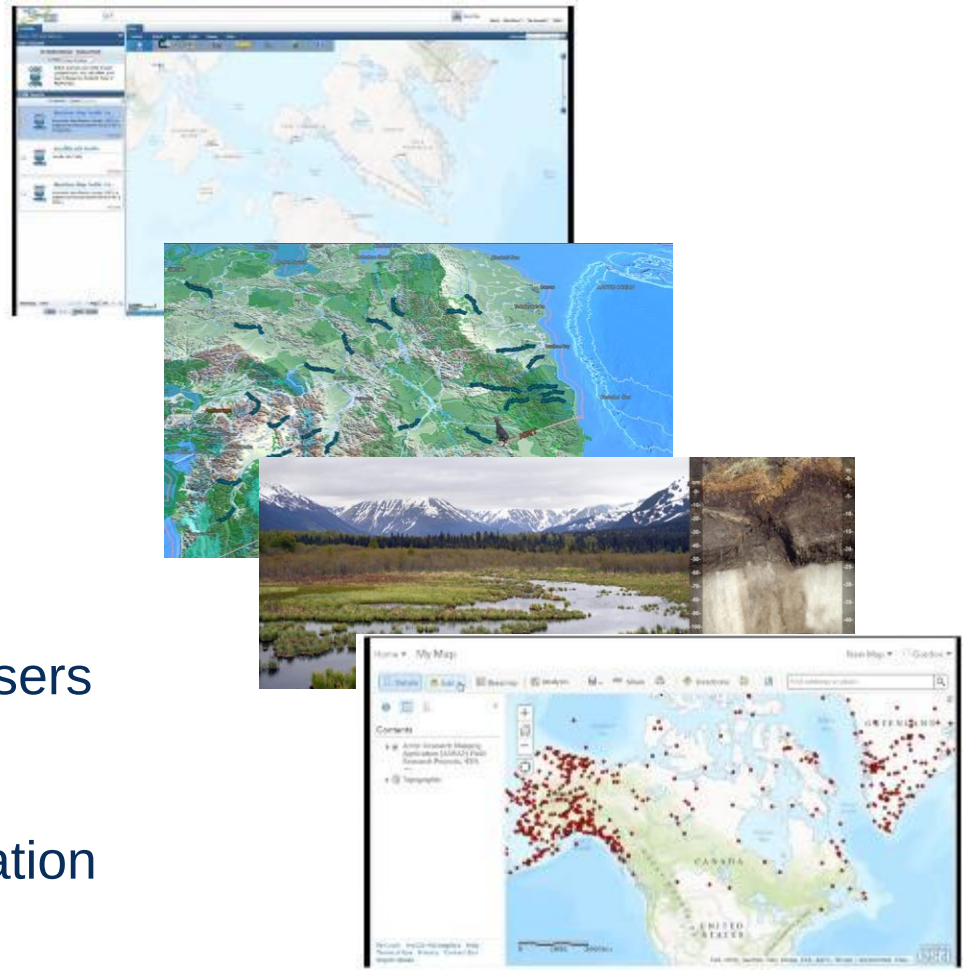
Video - **http://bit.ly/arcticsdp**



OGC®

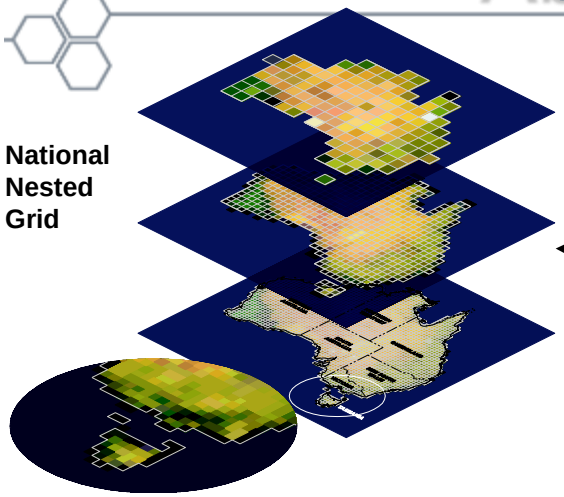
Key Results

- Standards work well (where implemented)
- Key Results
  - Discovery of relevant data still an issue
  - Automated crawling finds services
- Lots of data not available but…
  - Limited standardized interfaces
  - Many proprietary interfaces
  - Different login procedures/registrations
  - Non-standardized formats
- Arctic Geoportal needs to guide users
  - Base maps
  - Integration of data
- Low bandwidth requires consideration

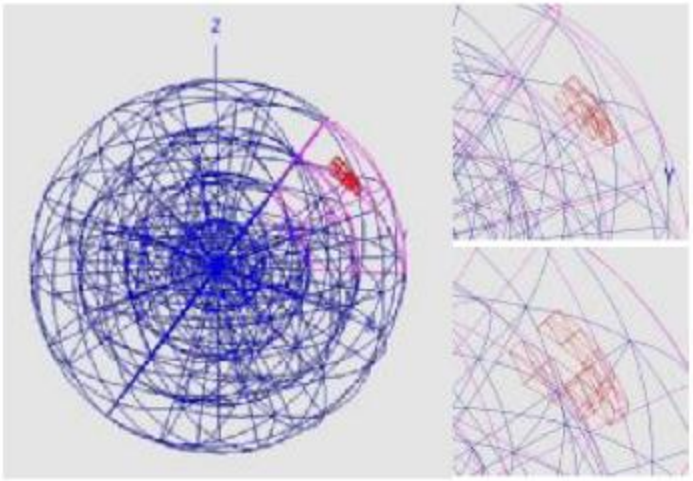


OGC®

Adopted - Discrete Global Grid Systems Abstract Specification

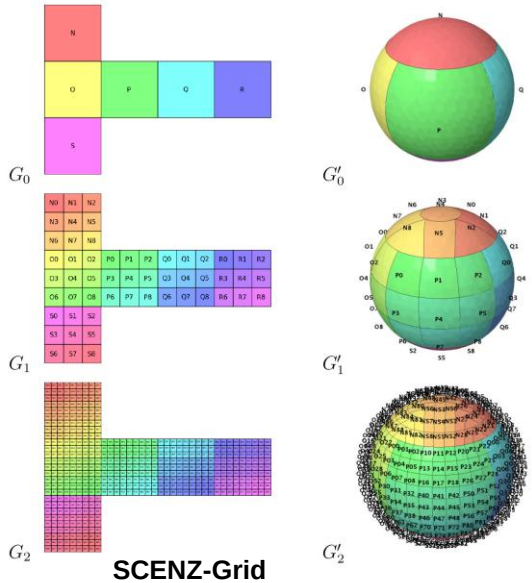


National Nested Grid

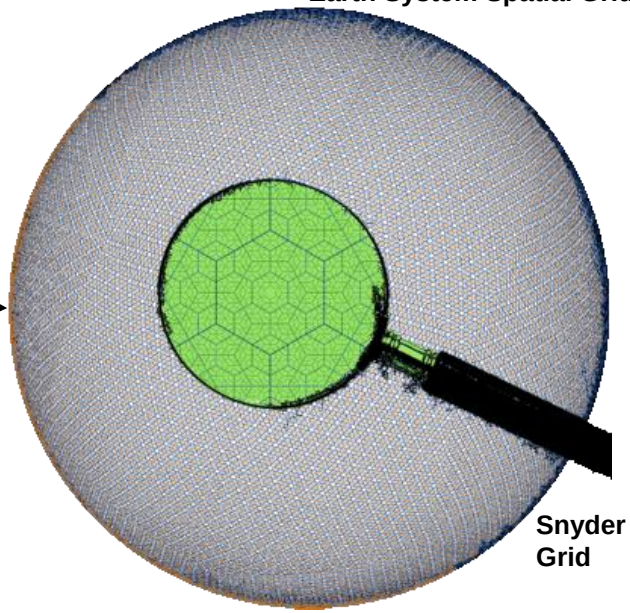


Earth System Spatial Grid

OGC®



SCENZ-Grid



Snyder Grid

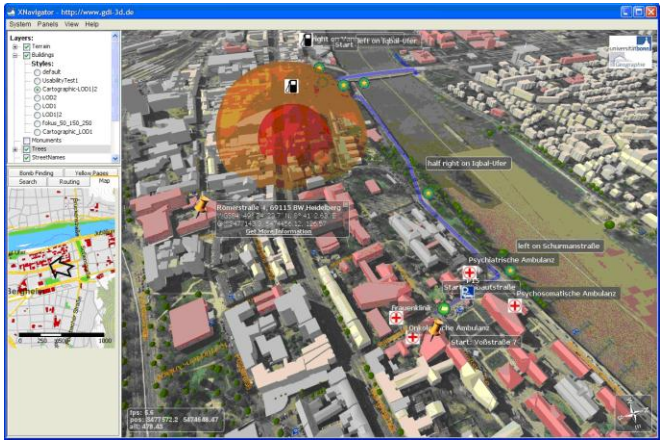
OGC®

Source: Matt Purss, Geoscience Australia

Adopted - 3D Portrayal Services

The 3DPS standard;

- Describes how a client and service negotiate
- Enable interoperable 3D portrayal
- View, analyze and combine 3D geoinformation from diverse sources in a single view
- Optimized for both client- and server-side rendering
  - Server-side rendering is usually used to support mobile devices and to visualize high resolution images of 3D scenes
  - Client-side rendering is used for desktop and web-based 3D rendering
- Joint Standard with the Web3D consortium



SCREENSHOT OF THE W3DS-CLIENT (XNAVIGATOR) SHOWING STYLED BUILDINGS ACCORDING THE USAGE, SOURCE; PROF. DR. ALEXANDER ZIPF CHAIR OF CARTOGRAPHY, DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF BONN

OGC®

Community Standards

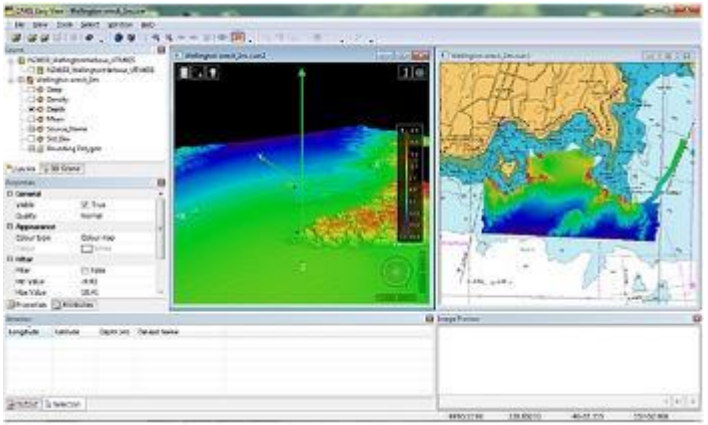
What is a community Standard ?

- Official position of the OGC endorsing a specification or standard developed external to the OGC
- Considered to be a normative standard by OGC membership and part of the OGC Standards Baseline
- Must have strong evidence of implementation
- A “snapshot” of a mature standard
- Maintained by submitting organizations (who may decide to continue to create new versions), not OGC
- Originator has either shared the Intellectual Property Rights with the OGC or granted unlimited free use of the Intellectual Property to all implementers

Adopted – Community Standards

- Indexed 3D Scene Layer (I3S) and the Scene Layer Package Format (SLPK) Specification.
  - ESRI, along with numerous endorsing organizations
- LAS 1.3
  - ASPRS
- GeoRSS

Integrated Mesh of Girona, Spain.



OGC®

Up and Running – UxS DWG

- Unmanned Systems Domain Working Group
  - Intended to cover unmanned/autonomous devices
  - Opportunity to bring Maritime ROVS/AUV requirements to the group

UAV./UAS/Drones

ROVS

AUV

Maybe ??????

OGC®

For Public Comment -TimeseriesML 1.2

- Defines an XML encoding that implements the OGC Timeseries Profile of Observations and Measurements
- Goal is to allow the exchange of datasets across information communities
- Available for public review and comment at https://portal.opengeospatial.org/files/76112
- Comments are due by 29 November 2017 and should be submitted to requests@lists.opengeospatial.org

On-Going and In Development

On-Going

- Linked Data
  - WFS 3.0 updates (very “Webby”), first draft released November 1, 2017
  - Environmental Linked Features Interoperability Experiment (ELFIE)
  - New Spatial Data on the Web Interest Group (with W3C)

In Development

- Marine SDI Concept Development Study (proposed)
- Marine SDI Innovation Project (potential follow on project)
- Potential S 121 Maritime limits and boundaries Pilot (pending approval from S121 working group)
- Activity Plan associated with completed IHO/OGC MOU (in discussion)
- Potential update to UN-GGIM core standards guide (IHO/ISO/OGC – potential new work item)?

Events

OGC meetings

- December 4th to 8th, North Palmerston NZ, Hosted by Manaaki, Whenua, Land Care research (includes Marine DWG meeting)
- March 19th to 23rd, 2018 , Orleans, France (includes Marine DWG Meeting, tbc)
- June 4th to 8th, 2018, Fort Collins, Co, USA
- September , 2018, Stuttgart, Germany
- November/December, N. AM (Charlotte, NC, tbc)

Co-located Meetings

- IHO MSDIWG 9 and OGC Marine DWG, Niteroi, Brazil, Jan 29 - Feb 2, 2018

OGC®

OGC Marine DWG Update

- From Marine DWG Co-chairs

OGC®

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).

OGC®

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.

OGC®

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.

OGC®

OGC Marine DWG Update

- 4 Marine DWG meetings over 12 month period
  - Vancouver, Canada
  - St. Johns, Canada
  - Delft, Netherlands
  - Southampton, UK
- 3 co-chairs from NGA, UKHO, TDY CARIS
- 81 signed up to Marine DWG email list

OGC®

Vancouver meeting

- **Held 1 day meeting alongside the IHO MSDIWG**
  - 30 attendees (15 in person, 15 remote)
  - Included Hydrographic Offices, Mapping Agencies, Oil and Gas, Research Institutes e.g. Ocean Networks Canada

- **Topic 1: Land and Sea integration**

- **Topic 2: The wider use of marine data and related standards**
  - DOF Subsea: An update on IOGP Seabed Survey Data Model (SSDM)
  - Teledyne CARIS: Interoperability experiment between SSDM / IHO S-100
  - UKHO: Challenges around portrayal, Defence Vs Civilian data
  - IIC: Portrayal work for IHO S-100

- **Topic 3: Current Marine SDI initiatives**

OGC®

MSDIWG8 - Marine DWG Related Actions

No	Work Item	Priority	Milestones	Start Date	End Date	Status	Responsible Contacts	Remarks
B.3	Identify wider user requirements for bathymetry data	H	1. Develop primary use case for Arctic Bathymetry SDI 2. Update **concept development study** ($) 3. Propose test-bed 4. Build test-bed ($$$)	2017	2018	Planned	IIC Esri OGC Caris Canada Portugal	$ = funding required
D.1	Identify relevant standards to support MSDI implementation and operation.	H	1. Provide annual reports to IRCC and HSSC 2. DGGS (Ref: B3)	06/2017	01/2020	Ongoing	OGC Marine DWG	
D.2	Assess the suitability and shortcomings of standards in supporting data interoperability.	M	1. Identify standards relevant to bathymetry (Ref: B3) 2. Marine Cadastre 3. Oceanography	2018	2019	Planned	OGC Marine DWG (inc: Portugal)	
H.1	Conduct 2018 -20 meetings of MSDIWG, arranged back to back with 1-day MSDI Open Forum and OGC Marine DWG	H	1. Date and venue defined 2. Logistics in place 3. Open Forum programme defined 4. Develop content for DWG workshops	2017	2020	Ongoing	MSDIWG Management Group (Chair/Vice Chair, Sec, IHO Sec)	2018- Brazil 2019- Korea 2020- tbc

OGC®

St. Johns meeting

- Maritime Search and Rescue Scenario from the ArcticSDP, Angela Amirault, Compusult
- The Evolution of Smart Bay and Smart Atlantic, Scott Bruce, Marine Institute
- Arctic Regional Marine Spatial Data Infrastructures Working Group Update, Sebastian Carisio, NGA

OGC®

Delft meeting

- Overview of the Copernicus program, Catharina Bamps, European Union
- Copernicus Marine Environment Monitoring Service (CMEMS), Cecilia Donati, Institutional Relations Manager at Mercator
- Satellite Derived Bathymetry, Chris Howlett, TCarta Marine
- OGC Sensor Web Enablement Standards, Simon Jirka, 52° North Initiative

OGC®

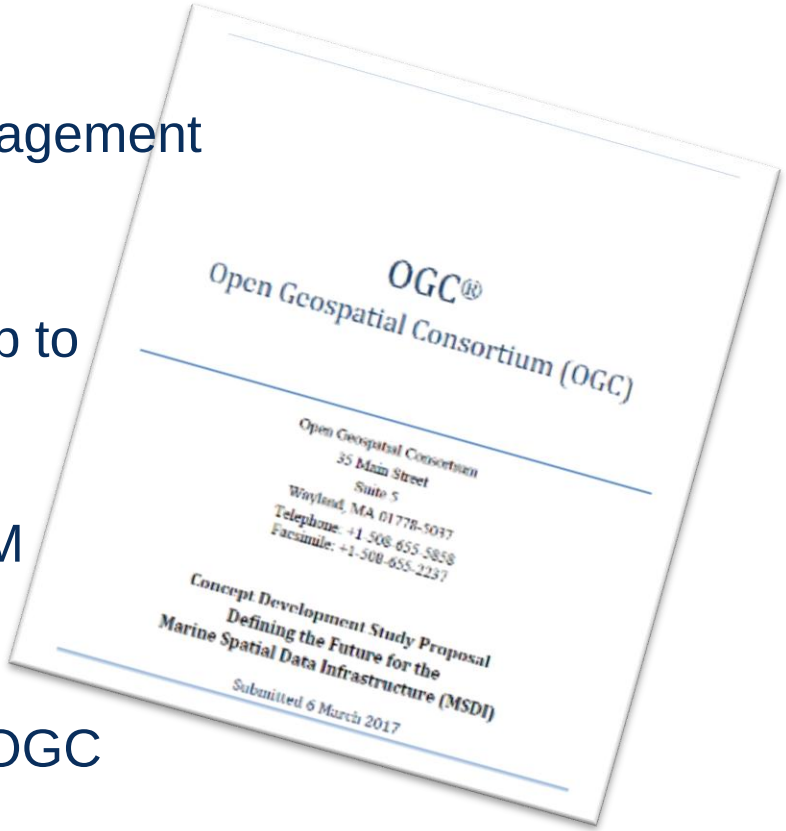
Southampton meeting

- Semantically enhancing SensorML with controlled vocabularies in the marine domain, Alexandra Kokkinaki, British Oceanographic Data Centre
- Maritime Limits and Boundaries and IHO S-121, Sébastien Durand, Canadian Hydrographic Service
- Formation of UN-GGIM Marine Working Group
- IOC Plan for Oceanographic Data and Information Management
- Point Cloud DWG and Marine DWG combined session
  - Scope and work of the Point Cloud DWG, Stan Tillman
  - Bathymetry and Point Clouds, Jonathan Pritchard

OGC®

Meeting Outputs

- OGC MSDI Concept Development Study (CDS)
- Monitoring next steps of the Arctic SDP
- Connect with Emergency & Disaster Management DWG
- OGC pilot proposed with IHO S-121 group to enable web services
- OGC Marine DWG to liaise with UN-GGIM MGIWG
- Proposal to reach out to IOC to promote OGC
- Further collaboration with OGC Point Cloud DWG


OGC®
Open Geospatial Consortium (OGC)

Open Geospatial Consortium
35 Main Street
Suite 5
Wayland, MA 01778-5037
Telephone: +1-508-655-5858
Facsimile: +1-508-655-2237

Concept Development Study Proposal
Defining the Future for the
Marine Spatial Data Infrastructure (MSDI)

Submitted 6 March 2017

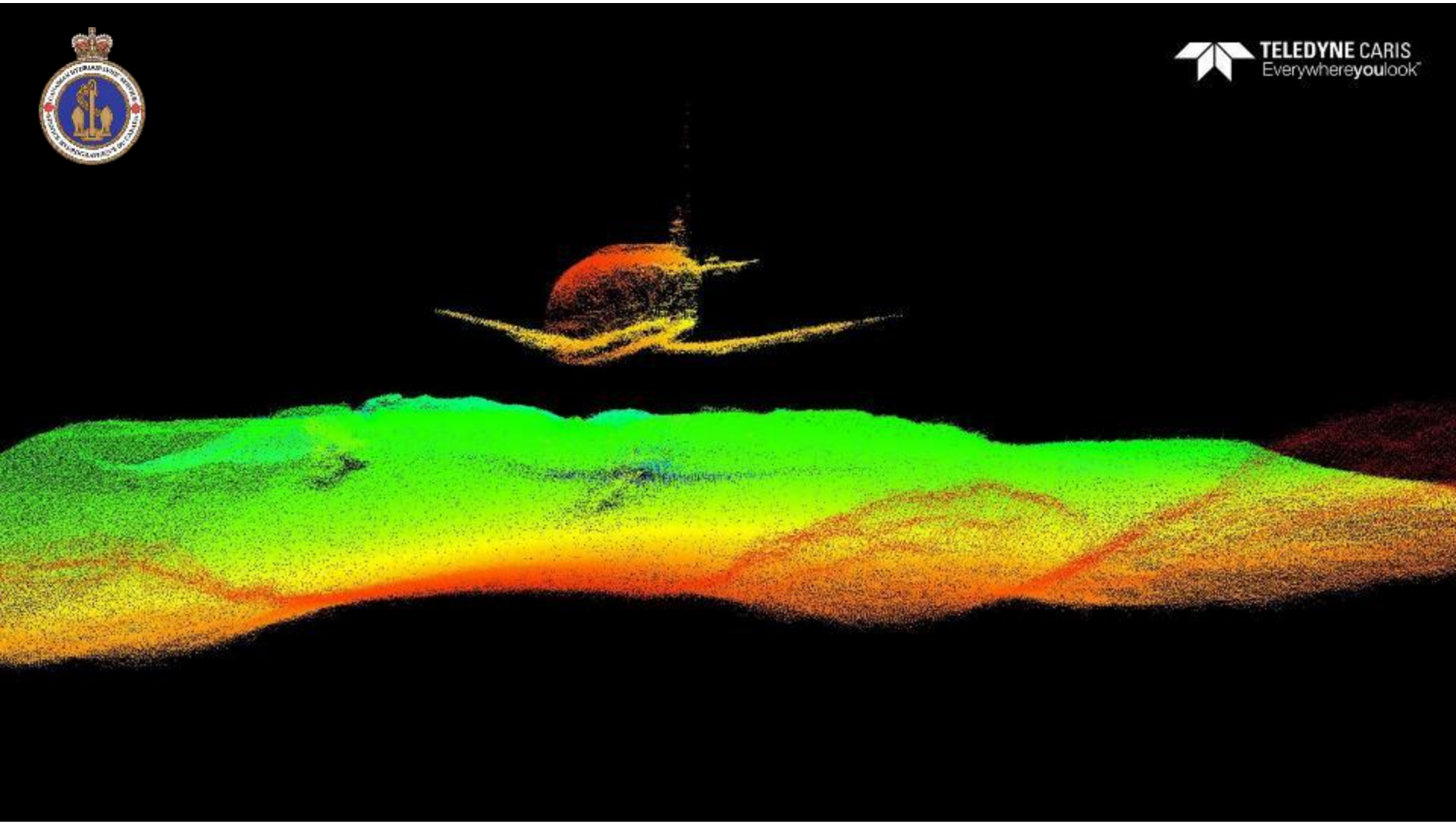
OGC®

Future Meetings

- We will hold next Marine DWG at Palmerston North, New Zealand OGC TC Meeting, Dec 4th 13:00 – 14:30
  - Presenters will include:
    - Land Information New Zealand (LINZ), Hydrographic Department
    - The HDF group
- There will be a 1 day Marine DWG alongside the MSDIWG 9 in Niteroi, Brazil, Jan 29 - Feb2, 2018
- Work programme defined in collaboration with MSDIWG and through Marine DWG meetings

OGC®

Just for fun!



OGC®

Action requested of HSSC

- Note this report
- 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

OGC®