



Open
Geospatial
Consortium

Federated Marine SDI Pilot 2023

Q&A Session

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OGC FMSDI Team



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What is OGC?

A hub for thought leadership, innovation, and standards for all things related to location

Our Vision

Building the future of location with community and technology for the good of society

Our Mission

Make location information Findable, Accessible, Interoperable, and Reusable (FAIR)

Our Approach

A proven collaborative and agile process combining consensus-based standards, innovation project, and partnership building



Who Are Our Members?

Commercial

Business Development

Global: Brand Exposure

Competitive Technical Advantage

Funding for Innovation

Government

Innovation & Market Support

International Partnerships

Trusted Advice

Operational Policy

Support & Certification

Research & Academia

Applied Research Partners

International Collaboration

Funding for Innovation

Citations



Open
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Collaborative Solution & Innovation Program

<https://www.ogc.org/ogc/innovation>

Marine Spatial Data Infrastructure (MSDI) – CDS

For more information please contact innovation@ogc.org

Maritime Limits and Boundaries (MLB) Pilot

For more information please contact innovation@ogc.org

Arctic Spatial Data Pilot

For more information please contact innovation@ogc.org

Federated Marine SDI

Connecting land & sea

across nations Connecting Land and Sea to Protect the Arctic Environment

Federated Marine SDI

Connecting Land and Sea for Global Awareness

Federated Marine Spatial Data Infrastructure Pilot 2023

Singapore - Arctic - Caribbean



Digital Twin of the Ocean

ILIAD



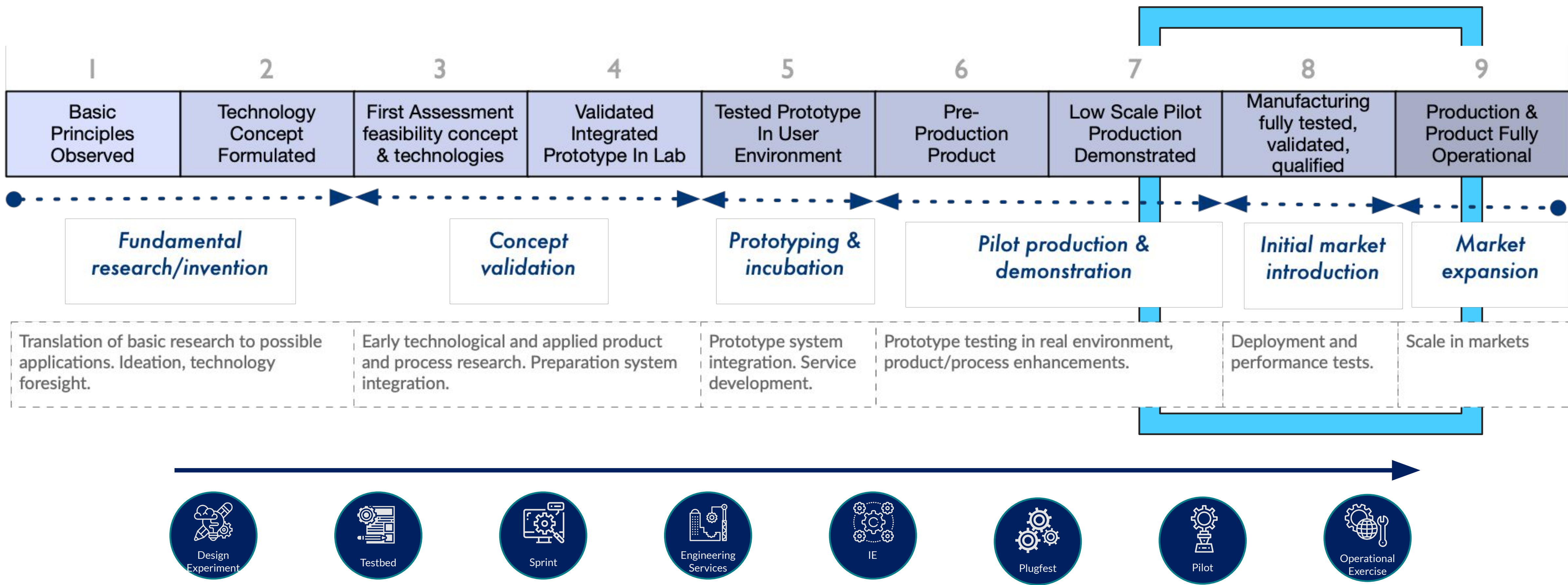
Interoperability and Collaboration from Oceans to Space

Testbed-19



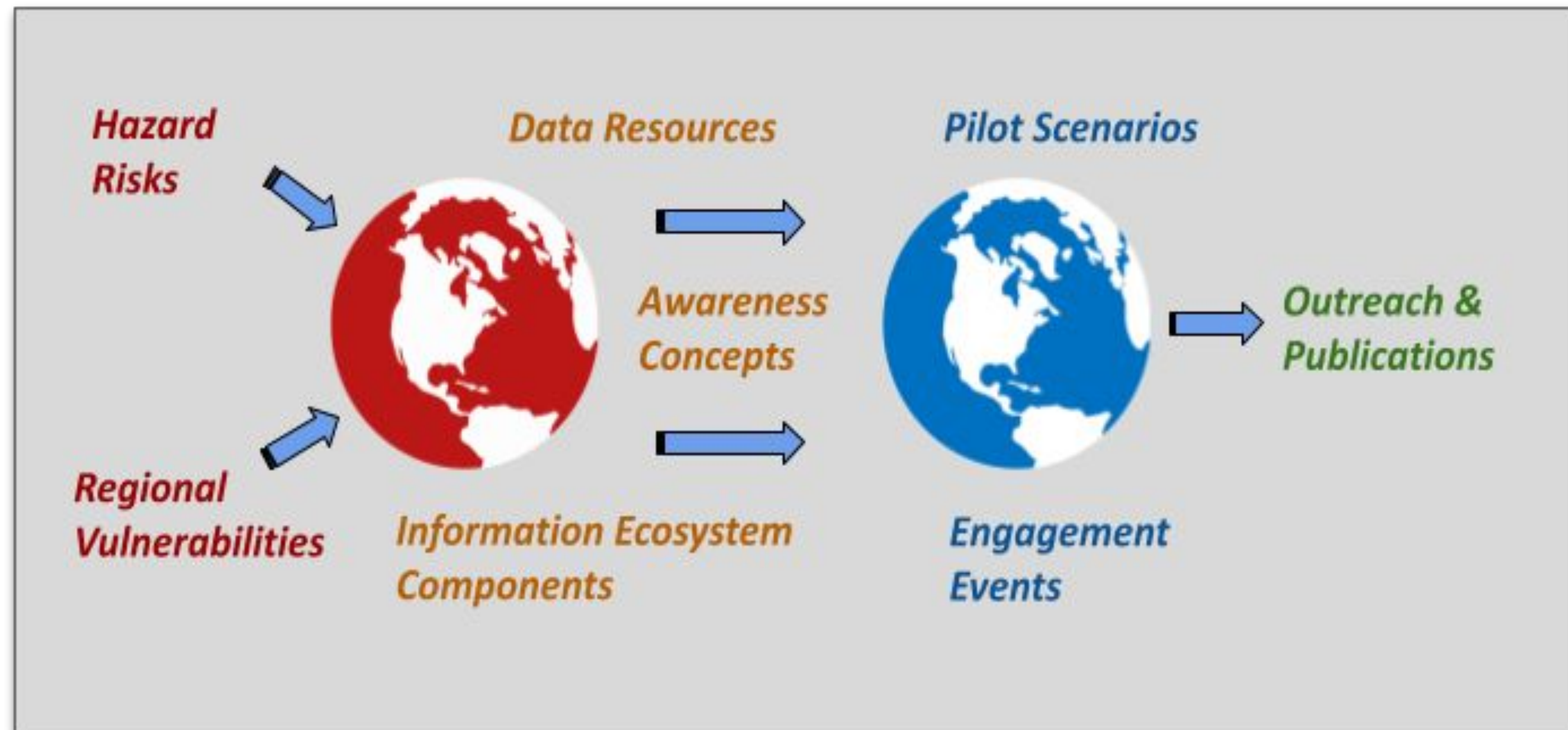
Technology Maturation Strategy

Technology Readiness Levels

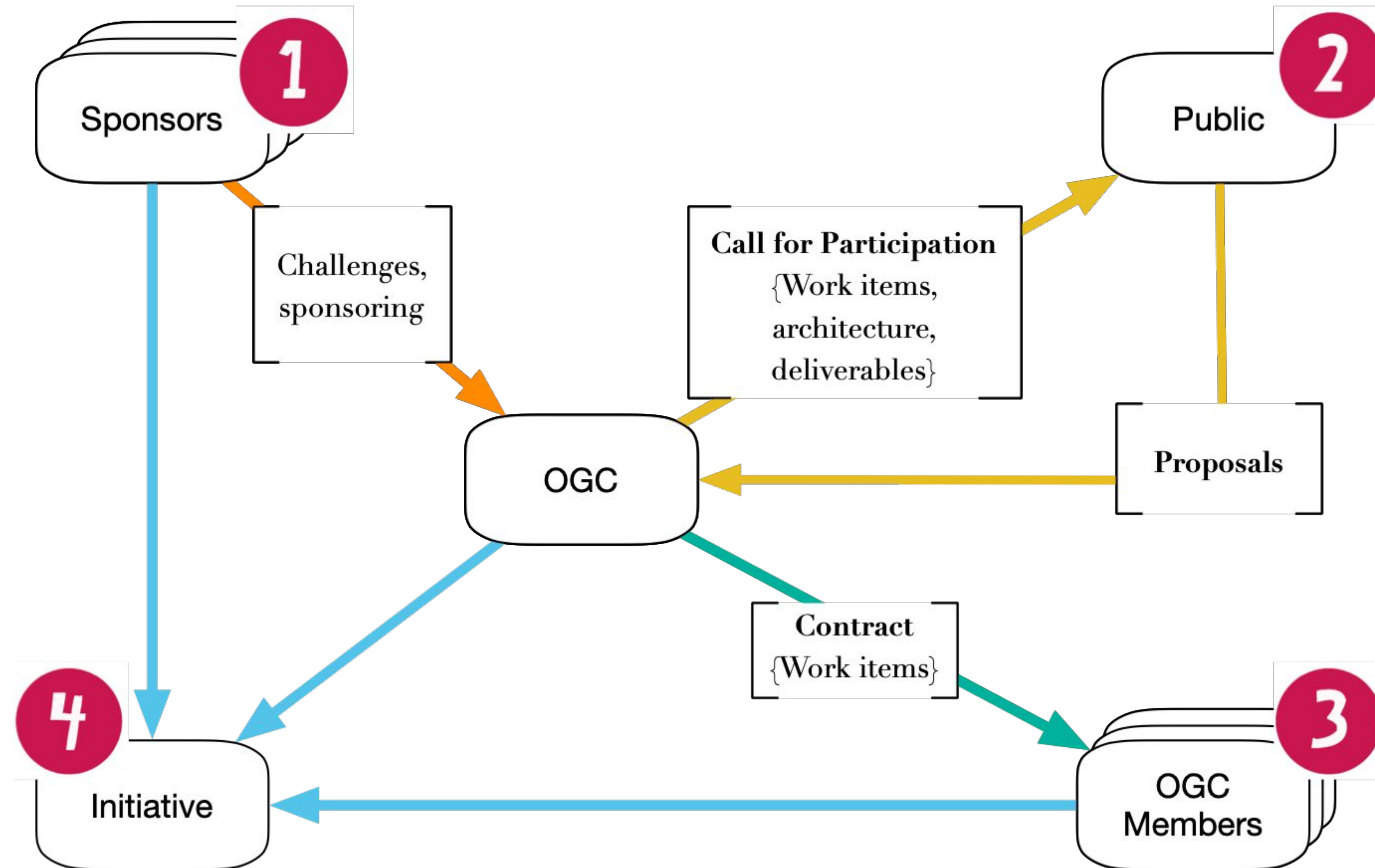


What Goes into an OGC pilot?

- Geospatial data sharing challenge (discovery, access, integration, exploitation)
- Sharing scenario(s)
- People! (Sponsors, supporters, participants, stakeholders, coordinators)
- Distributed systems agile prototyping
- Interchange of components and datasets -> measure of interoperability
- Simulation of scenario workflows
- Evaluation of results
- Feedback into standards development and adoption
- Considerations for further maturation and operational deployment
- Communication!
- (New) Persistence!



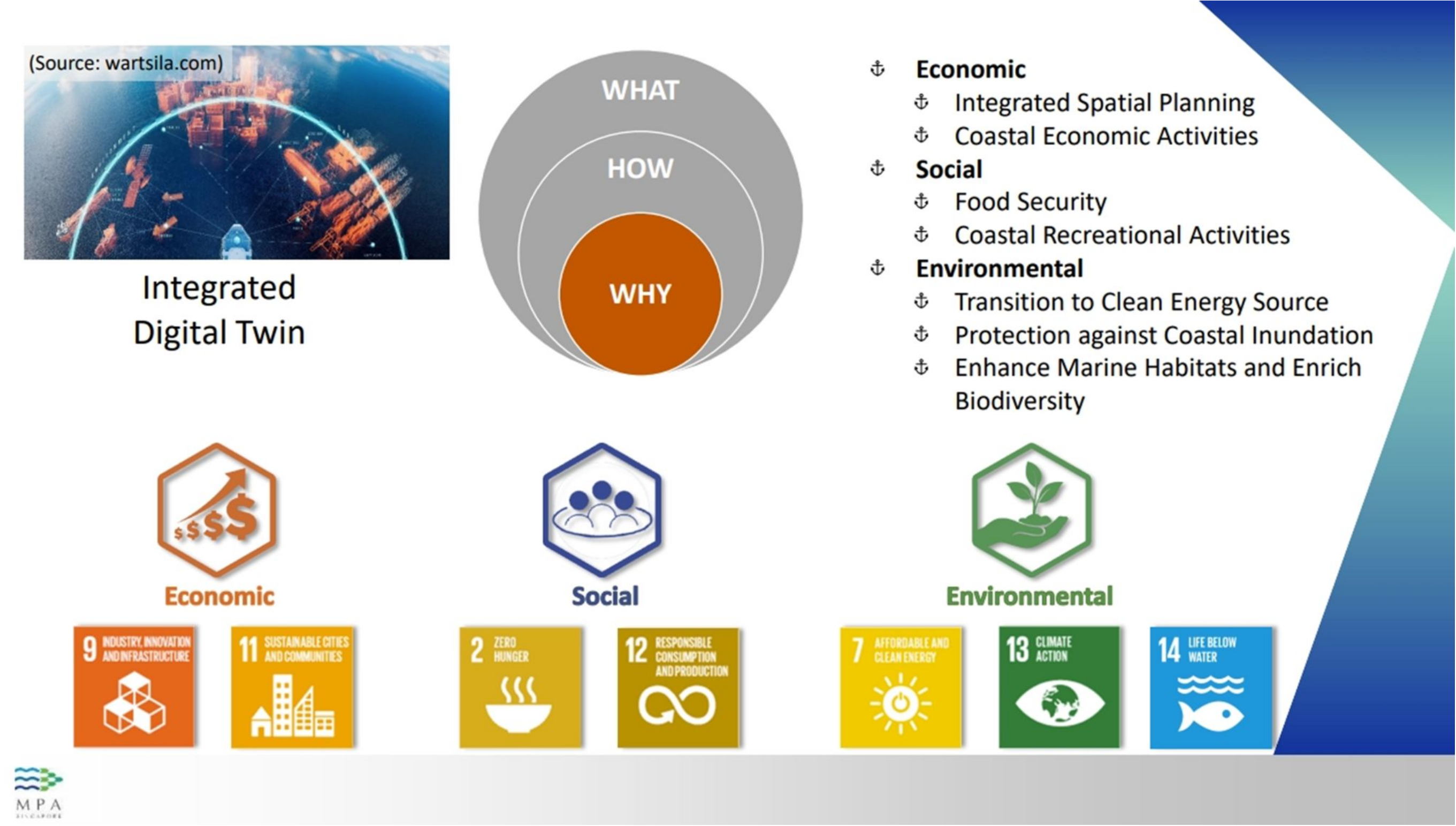
Innovation Initiative Process



FMSDI Pilot Projects

01	Why?	<ul style="list-style-type: none">• Climate Change impacts• Disasters impacts: storm surge, change in biodiversity, agrounded ships• New use cases for example for navigation datasets
02	What?	<ul style="list-style-type: none">• Federated effort• Interoperability between land and sea especially coastal areas• FAIR principals, efficient data usage and analysis
03	When?	<ul style="list-style-type: none">• Started at August 2021• went through 3 phases• April to October 2023, Current phase of the project
04	Where?	<ul style="list-style-type: none">• North Sea and Baltic Sea• Arctic• Singapore, Canadian Arctic, Caribbean
05	Who?	<ul style="list-style-type: none">• Hydrographic offices, Transportation, Marine Biologists, coastal gaurds, academics, businesses.• Governments, Local Governments, Private organizations, etc.• All of us!

Digital Twin Challenge: Integration of Land and Marine data for Coastal Protection Planning, Critical Infrastructure Protection, and Resilience.

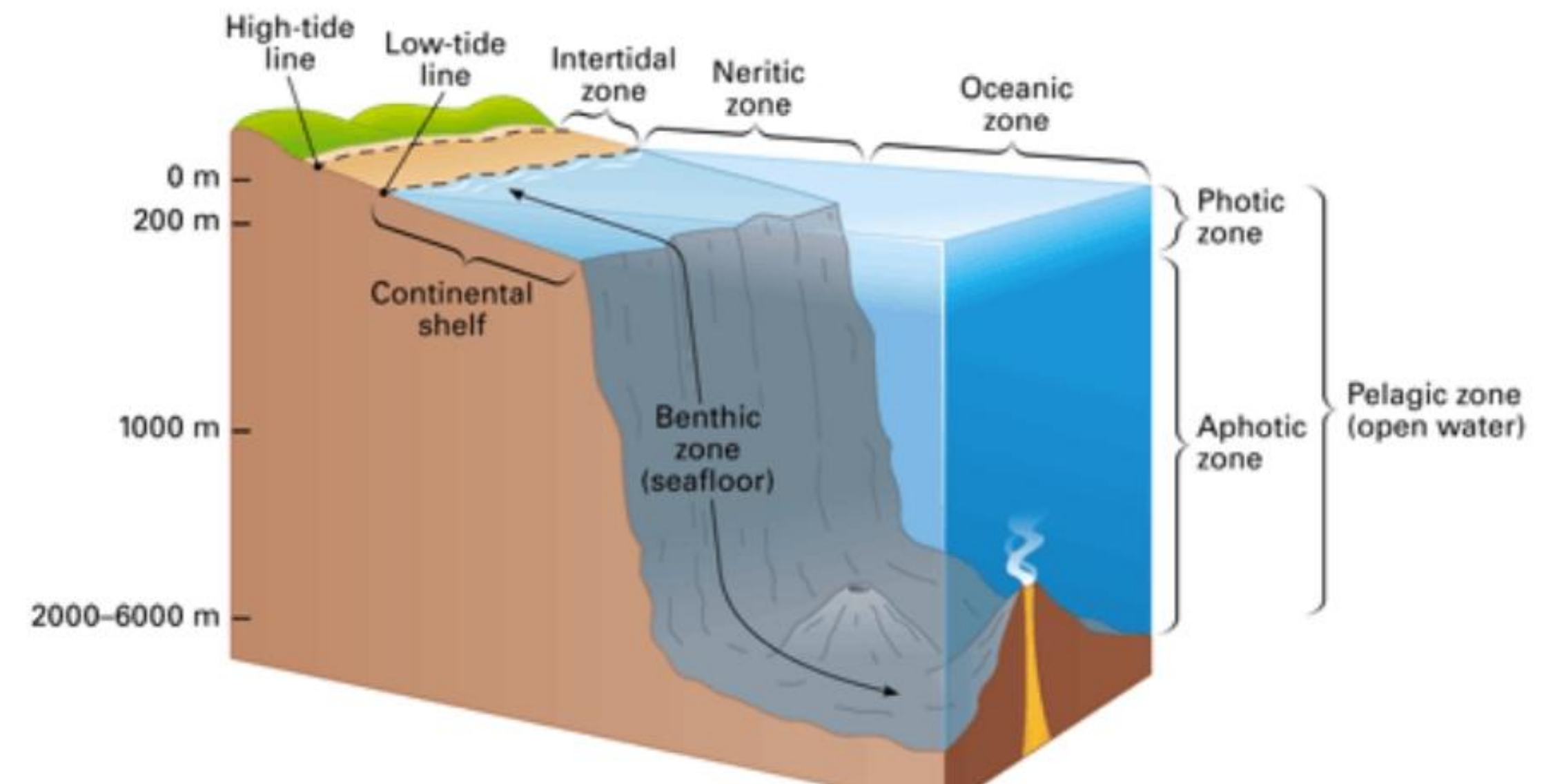


Sources: Eric Foo, MPA - https://ggim.un.org/meetings/2022/4th-EG-LAM/documents/2.3_Eric_Foo.pdf , collected Sept 14, 2022
3D graphic courtesy of SLA : <https://www.sla.gov.sg/articles/press-releases/2020/launch-of-onemap3d-beta-at-singapore-geospatial-week-2020>

Background:

Coastal erosion at the land – sea interface: Where the land meets the sea

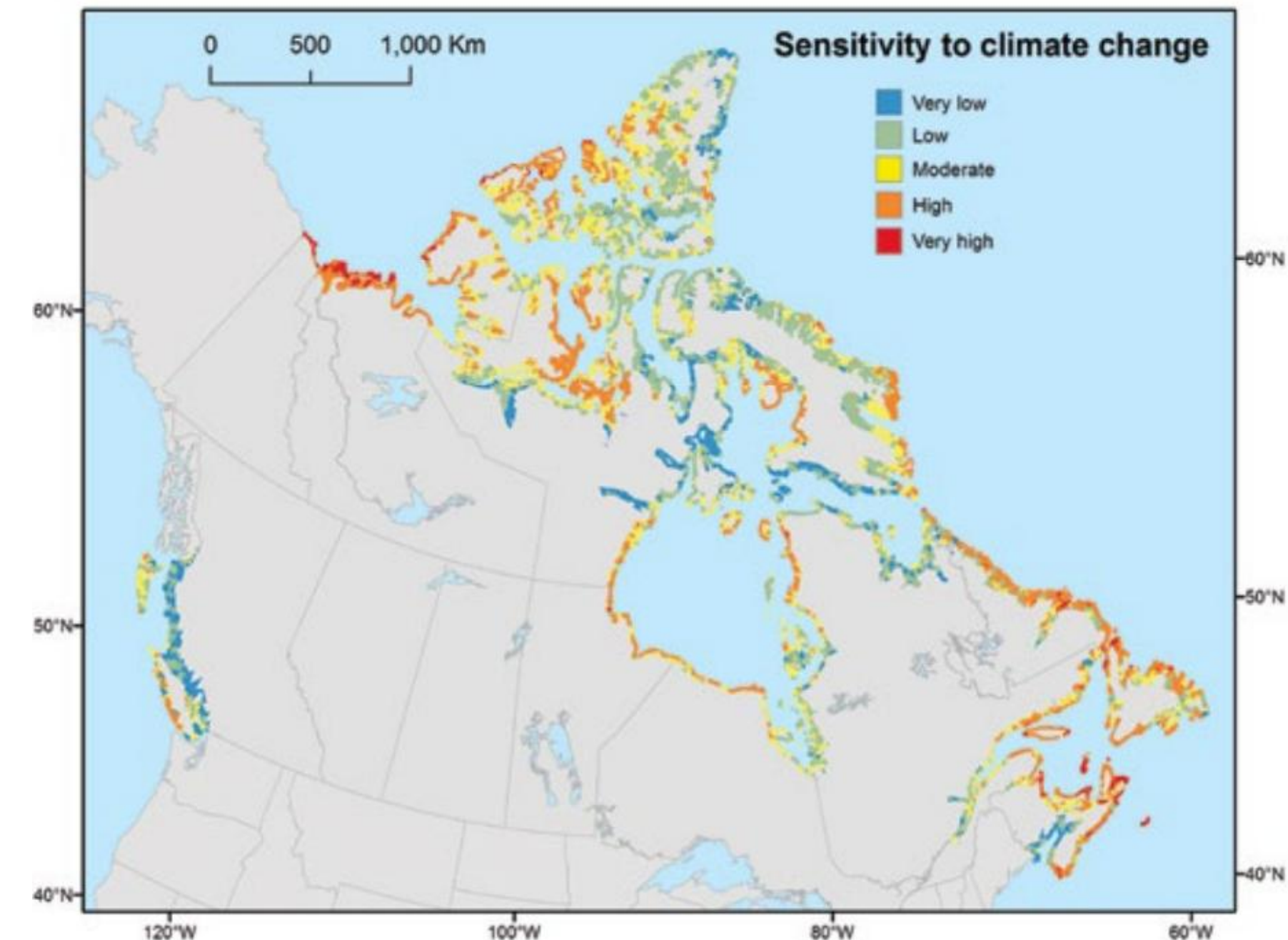
- Demonstrating interoperability between land and marine data to understand coastal erosion (e.g. ocean currents, geology, permafrost characteristics, etc.) in the Arctic
 - Defining coastline (highest line) and transition zone.
 - Need to connect with national organisations working on the coastal transition zone.



(from
<https://bodell.mtchs.org/OnlineBio/BIOCD/text/chapter34/concept34.4.html>)

Demonstrate the role of OGC Standards to:

- Support measurement of impacts of coastal erosion in the context of a changing Arctic. (e.g. infrastructure, food safety, traditional activities, wildlife migration, sea level rise, inundation etc.)
- Impact on wildlife migration corridors: land-sea ice-island (caribou) and sea (marine mammals)
- Mapping coastal sensitivity to climate change and the impacts on local communities
- Integrating Sensor Feed (e.g weather buoys), tabular and spatial data, improved data discovery, catalogues, web service to API transition, emerging Arctic requirements (e.g. vector tiles and style sheets across land - water interface (roads, coastline).



From [Canada's Marine Coasts in a Changing Climate²](#)

Use Case: Marine Data Interoperability in the Caribbean

Digital Twins – Connecting Land and Seas - small Island state



UK Hydrographic
Office



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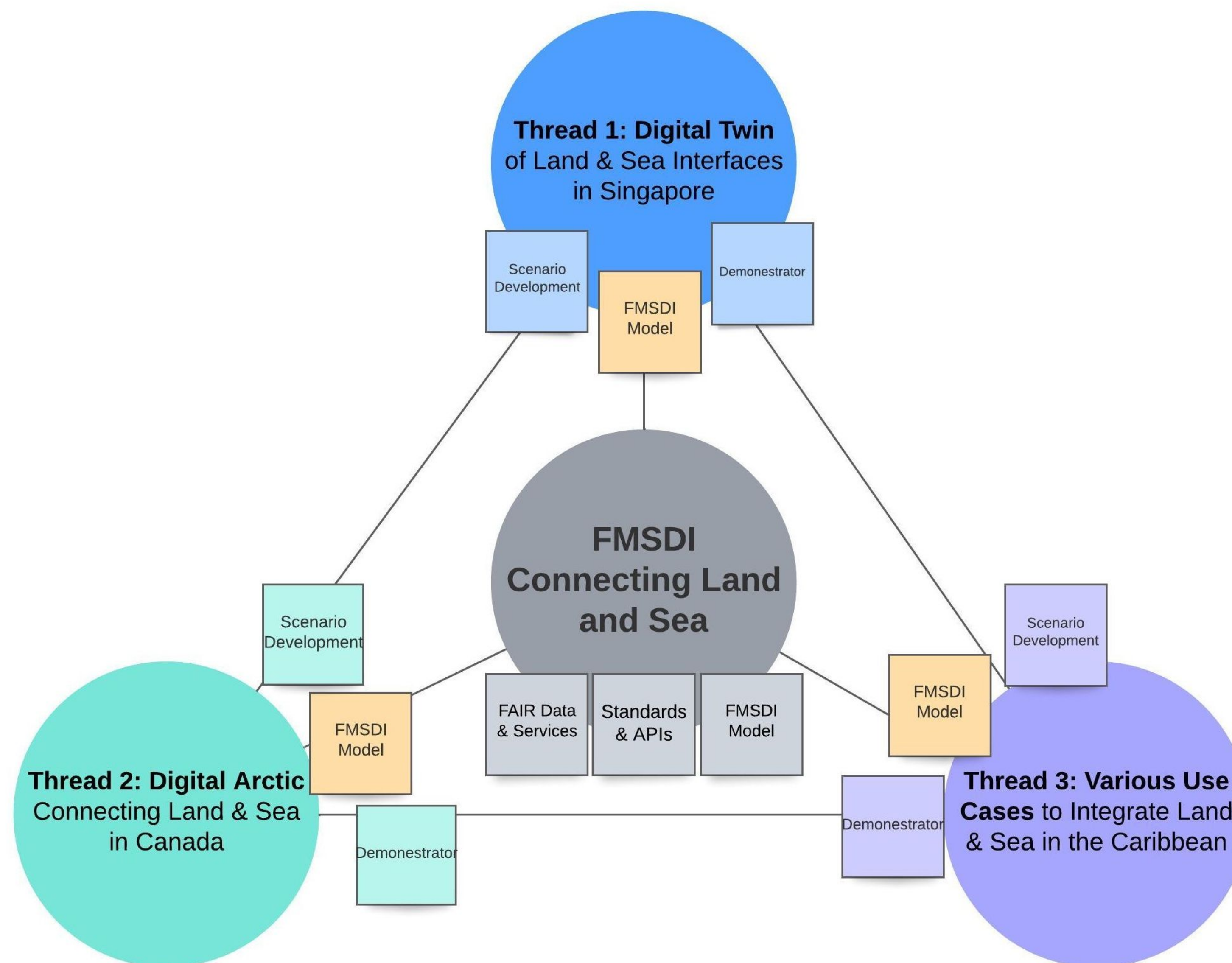
DIGITAL TWINS
OF THE OCEAN



CARIGEO
Caribbean Geospatial
Development Initiative
GEO-EMPOWERING THE CARIBBEAN

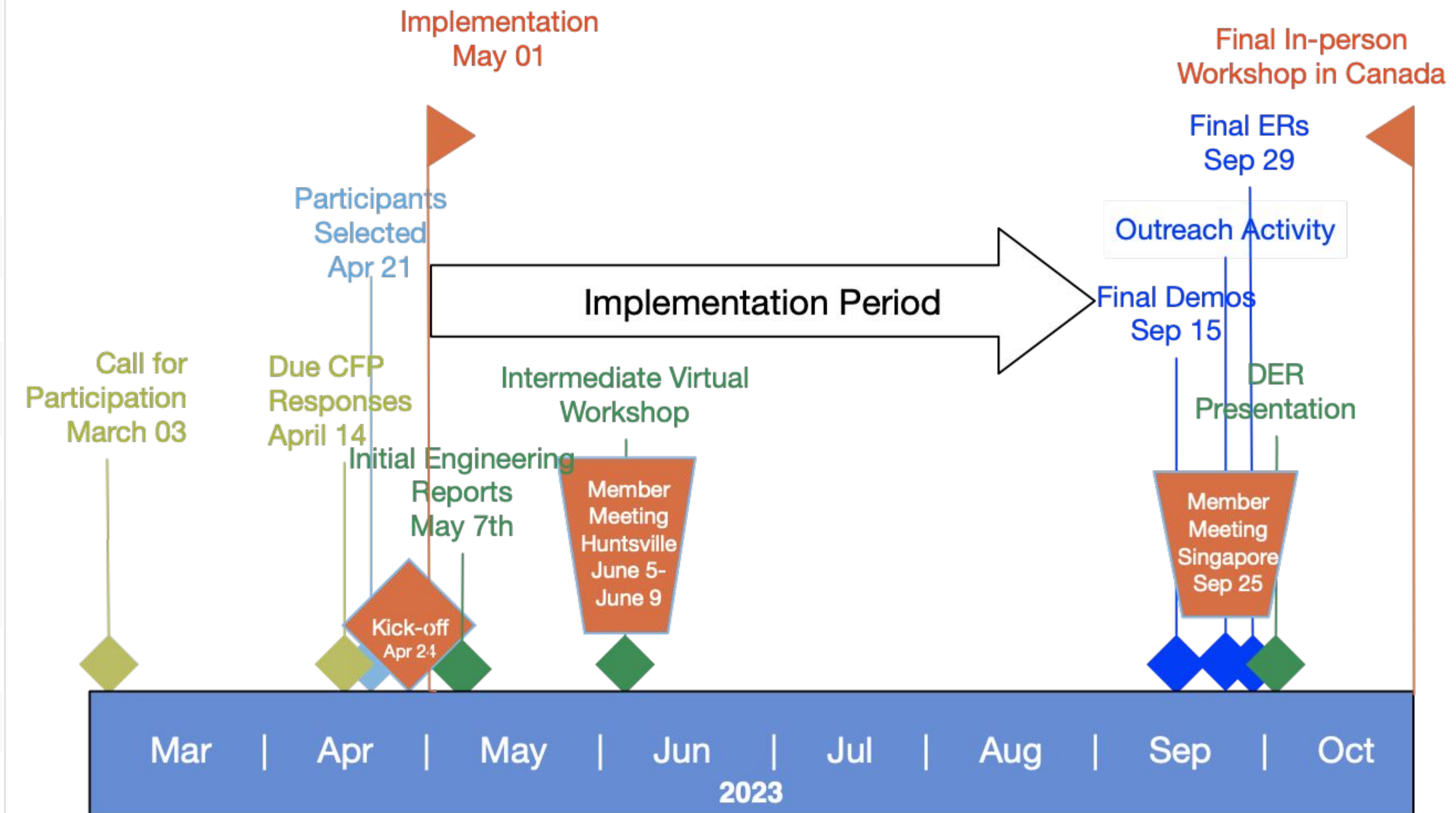


FMSDI Pilot 2023 Three Threads



FMSDI Pilot 2023 Schedule

Milestone	Date	Event
M01	Mar 3, 2023	Release of Call for Participation
M02	March 23 at 00:00 UTC and again on March 24 at 14:00 UTC	Bidders Q&A Webinar to be held 10:00-11:00 EST (Registration Link)
M03	April 14, 2023	Close of Call for Participation and Responses Due (Proposal Submission Website)
M04	April 21, 2023	Proposal Evaluation and all Participation Agreements Signed.
M05	Apr 24, 2023	Kick-off Workshop (virtual)
M06	May 1- Aug 30 , 2023	Implementation Period: Technology Integration Experiment (TIE) Testing, Draft ER and Initial Demonstration
M07	May 7, 2023	Initial ER Due
M08	May 30 - June 2, 2023	Intermediate Virtual Workshop (Initial ER and Demonstration) to develop a shared implementation plan (Outreach activity: Presenting Draft ER in the OGC Member Meeting June 5-9, Huntsville, AL)
M09	Sep 15, 2023	Final Demo Videos Due
M10	Sep 29, 2023	Final Engineering Report Due
M11	Sep 25-29, 2023	Outreach activity: Presenting Final ER and Demos in the OGC Member Meeting (Singapore Sep 25)
M12	Oct 2023	Final In-person Workshop in Canada (Demonstration of ER and Demo Videos) to ensure sustainability of project results.



Participant Contributions

ID	Document / Component
<u>D001</u>	Pilot Summary ER/s (Singapore, Digital Arctic, Caribbean)
<u>D100</u>	Persistent Demonstration - Singapore
<u>D101</u>	Methodology for discovery and integration of land and marine geospatial information for Arctic
<u>D102</u>	Persistent Demonstration on Digital Arctic
<u>D103</u>	Persistent Demonstration - Caribbean



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

