

# S-100 from MSDI Perspective

## **SWPHC S100 WORKSHOP**

VTC, 12 October 2022

Pearlyn Pang



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# Content

1. Value of Open Marine Geospatial and Hydrographic Data
2. Value of Standardised Marine Geospatial and Hydrographic Data: S-100 from MSDI Perspective



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# Our desired future



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# The International Hydrographic Organization (IHO)

- Vision: Advance Maritime safety and efficiency, support the protection and sustainable use of the marine environment
- Mission: Adequate, standardised and timely hydrographic data, products and services and ensure their widest possible use
- Goal 2: Increasing the use of hydrographic data for the benefit of society

## National Agendas

- Changing ocean and local seascape – Planning, management, modelling, mitigation and adaptation
- Commitment to regional and/or global agendas

**Precondition:** There is hydrographic data and MSDI(s) managed and ready to be used more widely for the benefit of society



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# Data – Oil in a Digital Hydrospace



Velocity

Volume

Value

Variety

Veracity



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# Principles of Open Marine Geospatial Data and Information

- FAIR – Findable, Accessible, Interoperable and Reusable

**Example:** FAIR principles

## How to make data FAIR?

### Findable

Assigning a globally unique and eternally persistent identifier (like a DOI or Handle), describing the data with rich metadata, and making sure it is findable through disciplinary discovery portals.

### Accessible

Data and metadata should be retrievable in a variety of formats that are sensible to humans and machines using persistent identifiers.

### Interoperable

The description of metadata elements should follow community guidelines that use an open, well defined vocabulary.

### Reusable

The data should maintain its initial richness. The description of essential, recommended, and optional metadata elements should be machine processable and verifiable, use should be easy and data should be citable to sustain data sharing and recognize the value of data.

Source: IHO MSDIWG113-19



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# UN Shared Guiding Principles

Principles and common values to guide the behaviour of, and serve all national and global geospatial entities engaged in, the collection, production, management and dissemination of geospatial information



# Role of Marine Geospatial Data and Information

## **White Paper on Readily Available and Accessible (Open) Marine Geospatial Information**

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A reference on the benefits and challenges of managing and providing accessible marine geospatial information



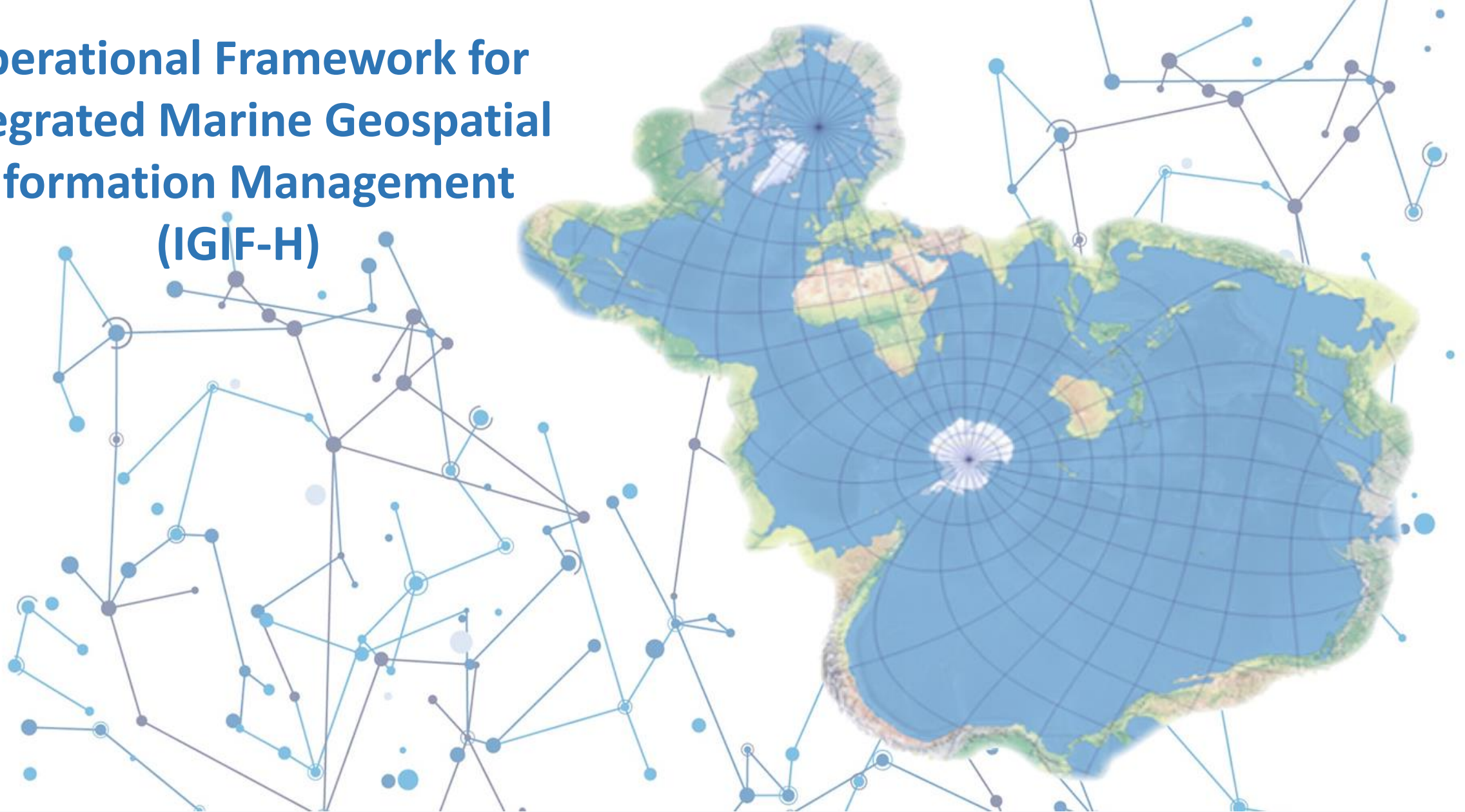
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# Operational Framework for Integrated Marine Geospatial Information Management (IGIF-H)



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# Vision

Integrating water into the global geospatial information  
infrastructure ecosystem



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# Integrated Geospatial Information Framework-Hydro (IGIF-H) High Level

## Two part document

Part One – background, challenges and introduction to value propositions

Part Two – broken down by IGIF Strategic pathways for the water domain

Scope – Oceans, Seas, rivers, waterways/watercourses, lakes, inland waters, wetlands, glaciers...

### Part 1

- Overview
- Introduction and Background
- The Main Challenges

### Part 2

- |   |                                |
|---|--------------------------------|
| • A Value Proposition for the Marine Domain | • Standards                    |
| • Introduction                              |                                |
| • Governance and Institution                | • Partnerships                 |
| • Legal and Policy                          | • Capacity and Education       |
| • Data                                      | • Communication and Engagement |



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# IGIF-H Part One

 UN-GGIM

Sessions > Twelfth Session



Twelfth Session of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM)

3 - 5 August 2022

### Overview

The twelfth session of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) will be held from **3 - 5 August 2022** at the United Nations Headquarters in New York. UN-GGIM, comprising experts designated by the Governments

### Documentation

- 12th session documents
- Webcast:
  - 1st Meeting, 3 August 2022
  - 2nd Meeting, 3 August 2022

- The Twelfth UN-GGIM Committee of Experts:
  - Supported the development roadmap in two parts
  - Supported [IGIF-H Part One](#)
- High-level summary, catalyst for change, our desired future, vision, mission, goals and background for the IGIF-H.

#### Agenda item #13. Marine geospatial information

- E/C.20/2022/15 Summary [Arabic](#) [Chinese](#) [English](#) [French](#) [Russian](#) [Spanish](#)
- E/C.20/2022/15/Add.1 [Report](#)
- Introductory Statement
- Background documents
  - Singapore Statement on effective and integrated marine geospatial information management
  - Operational Framework for Integrated Marine Geospatial Information Management



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# IGIF-H Part Two



all IGIF nine pathways  
on the table



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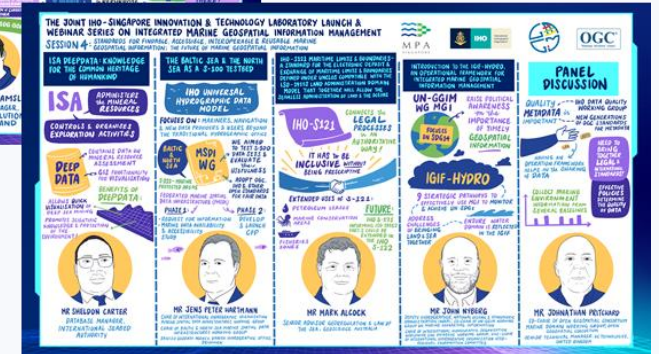
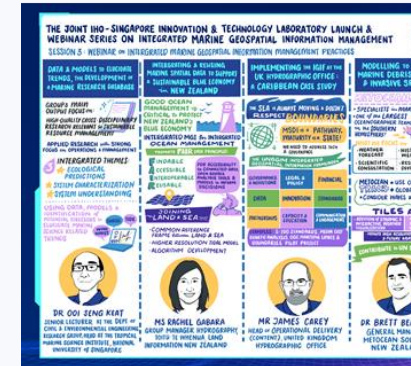
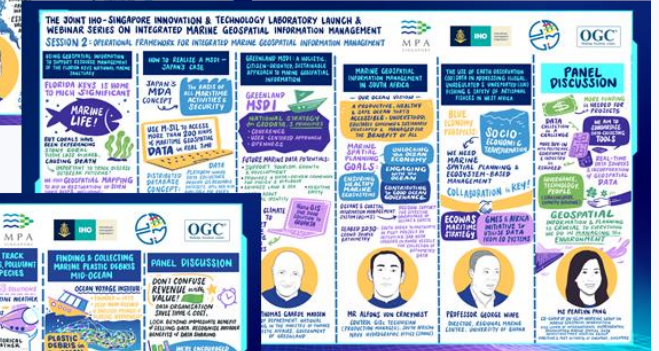
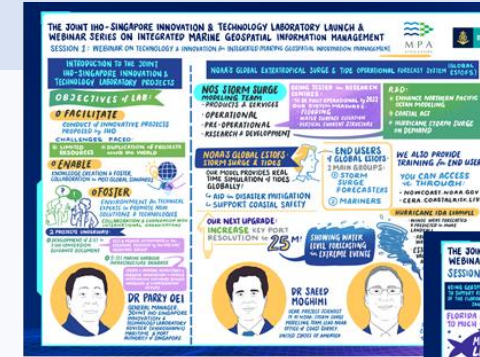
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# Value Propositions

- Nautical Charting and Transportation
- Supporting Resource Management and Planning
- Established Maritime Boundaries
- Subsistence
- Emergency Response and Disaster Management Response
- Integrated Marine Cadastral Systems
- Energy - Oil, Gas, and Marine Resources
- Environmental Protection
- Climate Change
- Scientific Research
- Marine Debris and Ocean Plastics
- Coral Reef Conservation
- Fishery Management



[https://ggim.un.org/meetings/2021/WG-MGI\\_webinar/](https://ggim.un.org/meetings/2021/WG-MGI_webinar/)



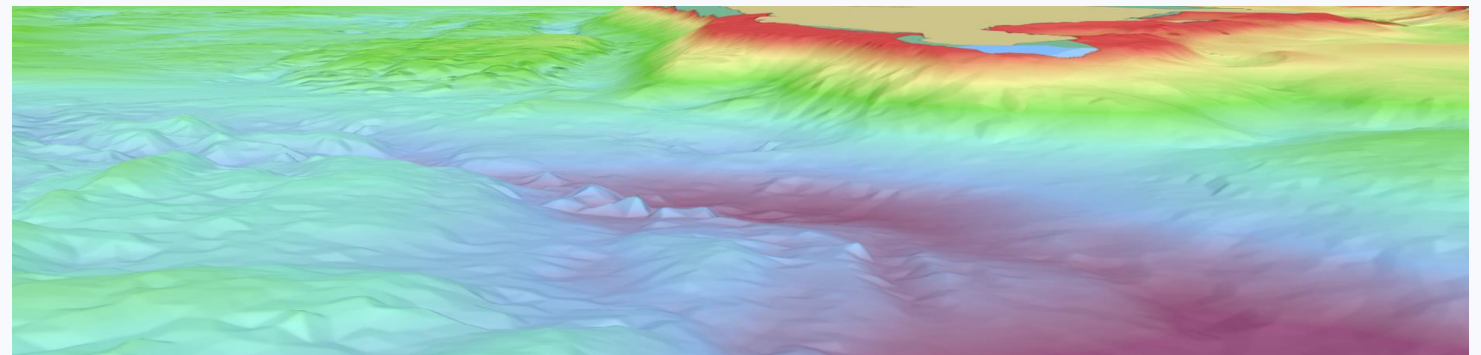
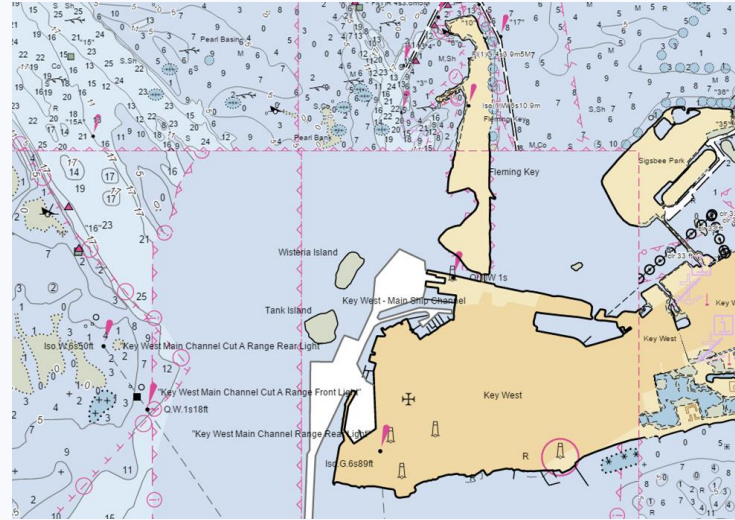
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# Marine Transportation – Nautical Charting and Beyond

- Foundational component of transportation infrastructure
- Improves safety and efficiency for maritime commerce
- Protects the environment



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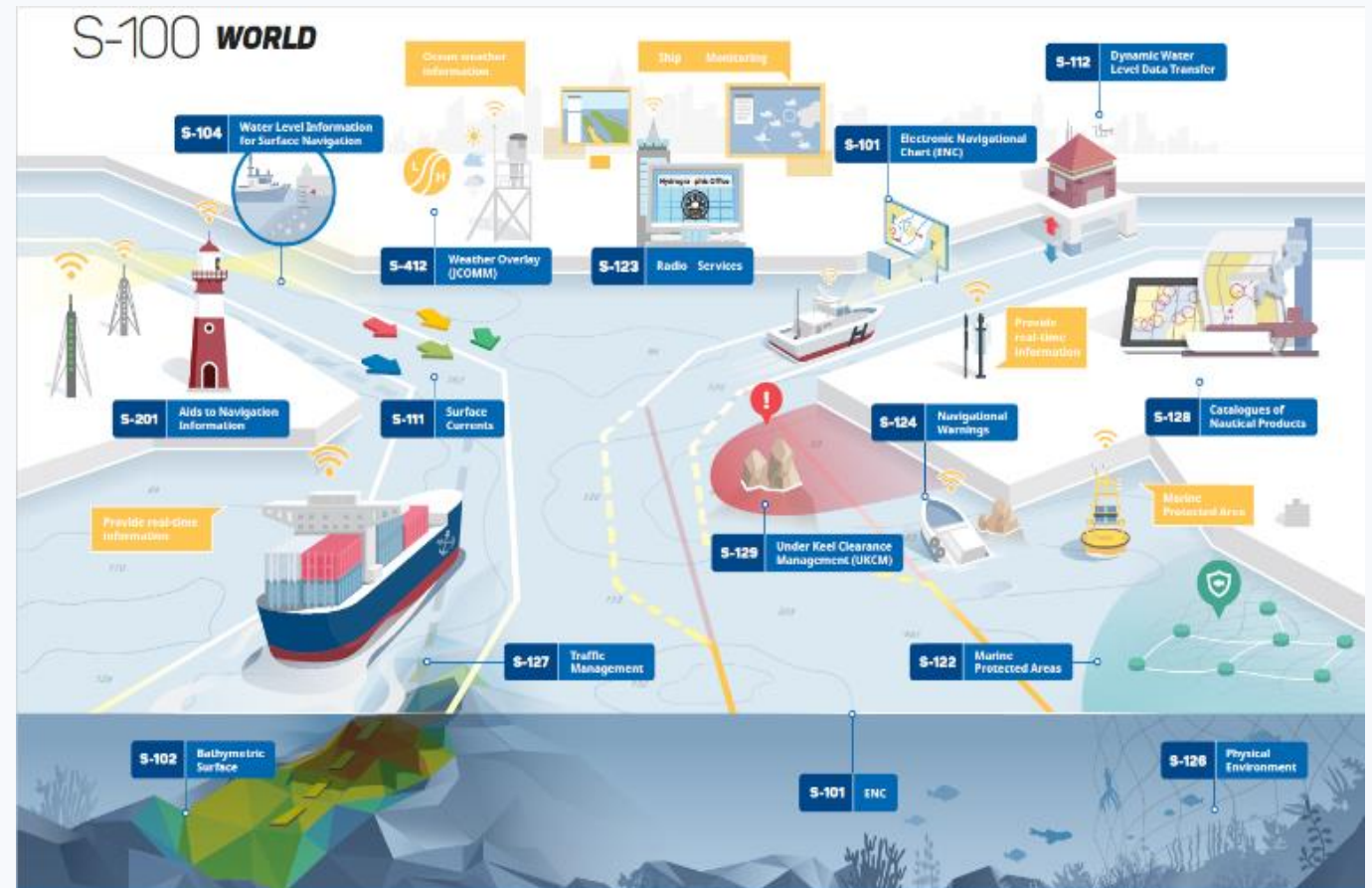
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# S-100 - the IHO Building blocks



- Provides the **data framework** for the development of the next generation Electronic Navigational Charting products, as well as other digital products required by the hydrographic, maritime and GIS communities
- Leads to a **global consistency** of products
- Internationally recognized framework for the structure and delivery of products for the hydrographic and maritime community



Source: <https://iho.int/en/s100-project>



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# S-100 from MSDI Perspective



## MSDI

- Key to unlock the value of spatial data
- Receiver and/or Provider of open (FAIR) and standardised marine spatial data

**Effective application  
and use** of the data

**Achieve** National,  
Regional, Global  
Agendas

- IHO Strategic Goal 2:  
Increasing the use of  
hydrographic data for  
the benefit of society

S-100 universal hydrographic data model from MSDI perspective to increase the use of hydrographic data within marine-related domain and with the wider geospatial ecosystem



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# Looking Ahead

## Why?

- Great value for the provision of readily accessible and available open and standardised marine spatial data

## What/How?

- Consider MSDIs as key to unlocking this value and S-100 universal hydrographic data model an enabler
- Consider and discuss S-1xx products required for wider use
- Consider and test S-1xx products integration cross-domains



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# Thank you



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