



16th Conference of the EAthC / *16^{ème} Conférence de la CHAtO*

Marine Spatial Data Infrastructure ***Infrastructure de Données Spatiales Maritimes***

Portuguese Hydrographic Office

Agenda Item 02.1E – 03.1F



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AGENDA

International
Hydrographic
Organization

1

Marine Spatial Data Infrastructure

2

Example of a MSDI

3

Request for Information

4

Recommendations

5

Actions Requested from EAtHC16





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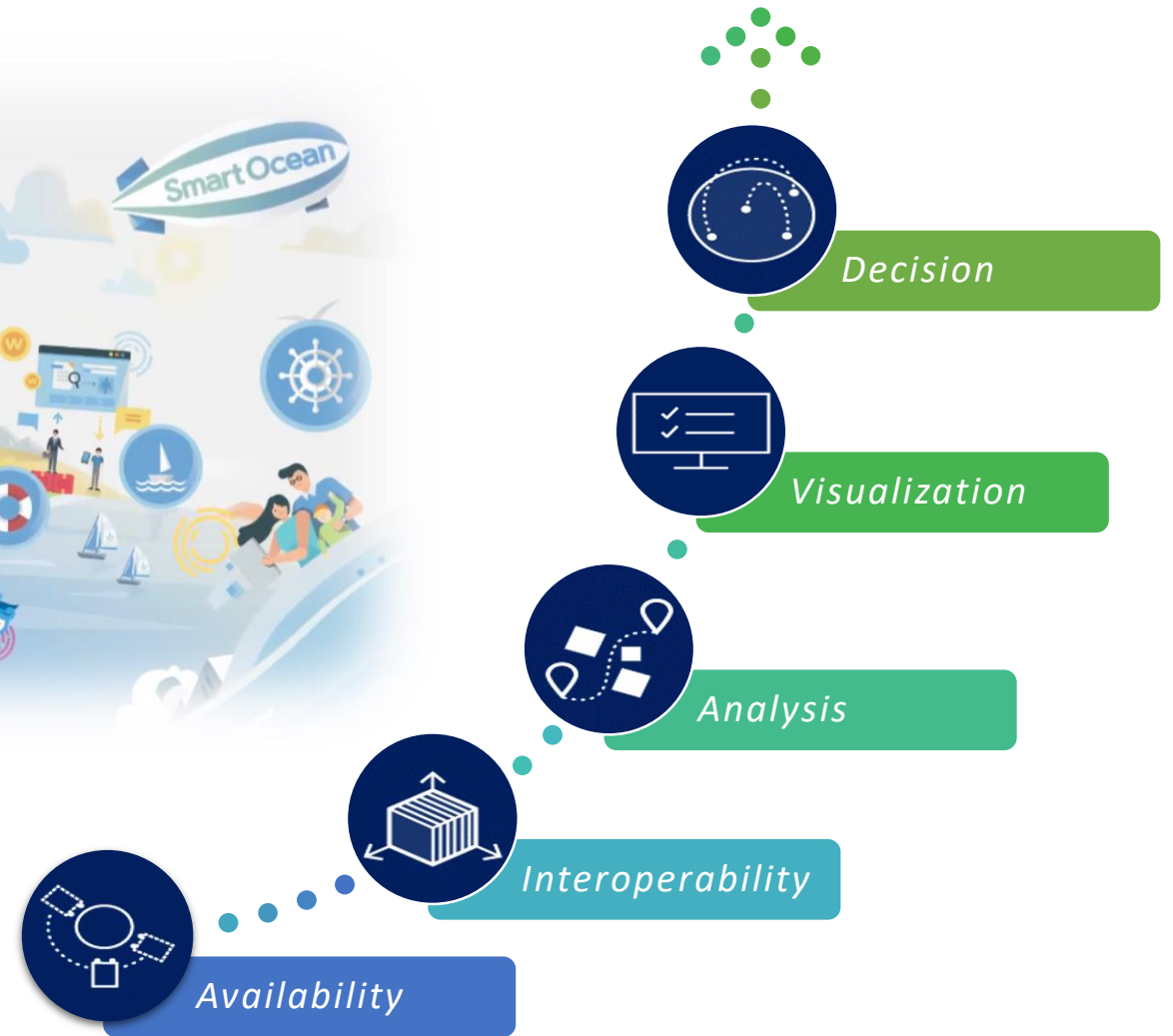
1. MARINE SPATIAL DATA INFRASTRUCTURE

1.1. THE RISE OF MARINE SPATIAL DATA

International
Hydrographic
Organization



Conserve and sustainably use the oceans, seas and marine resources for sustainable development



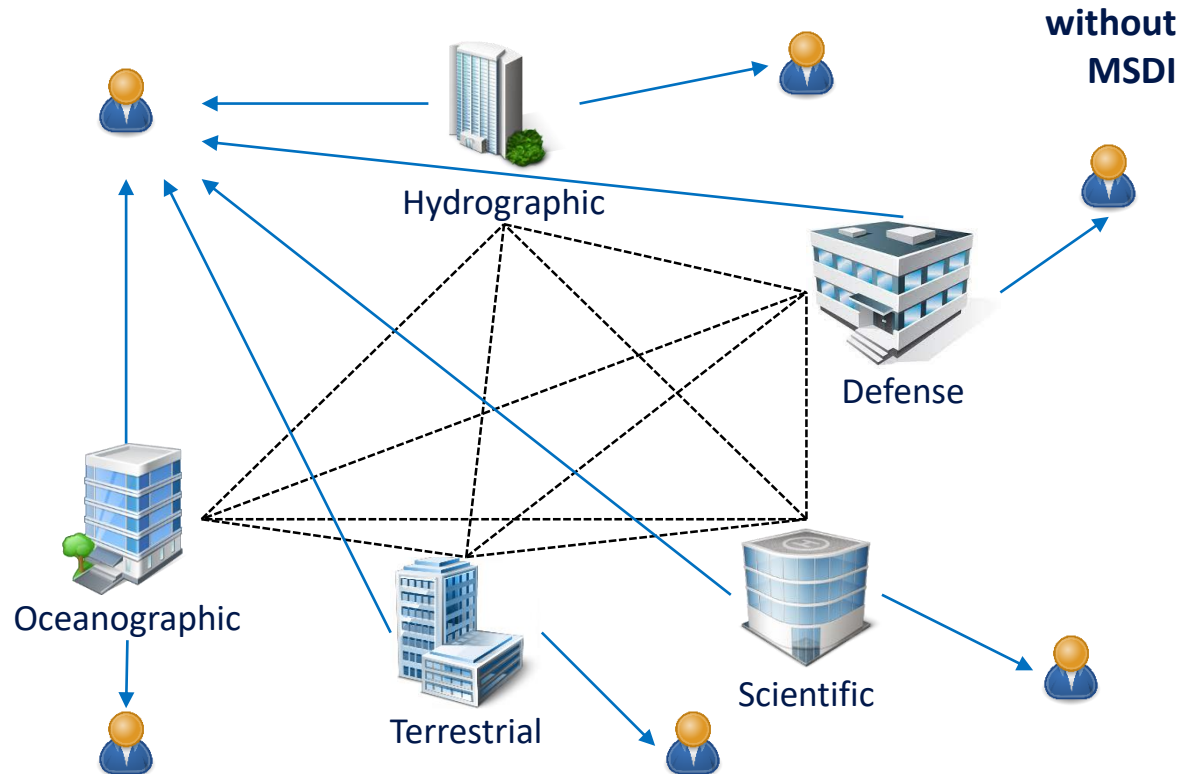
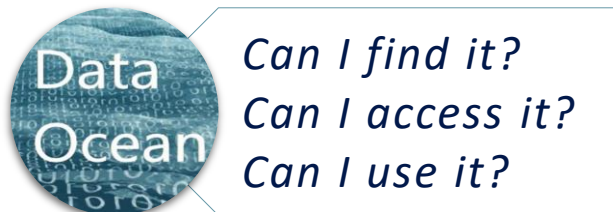


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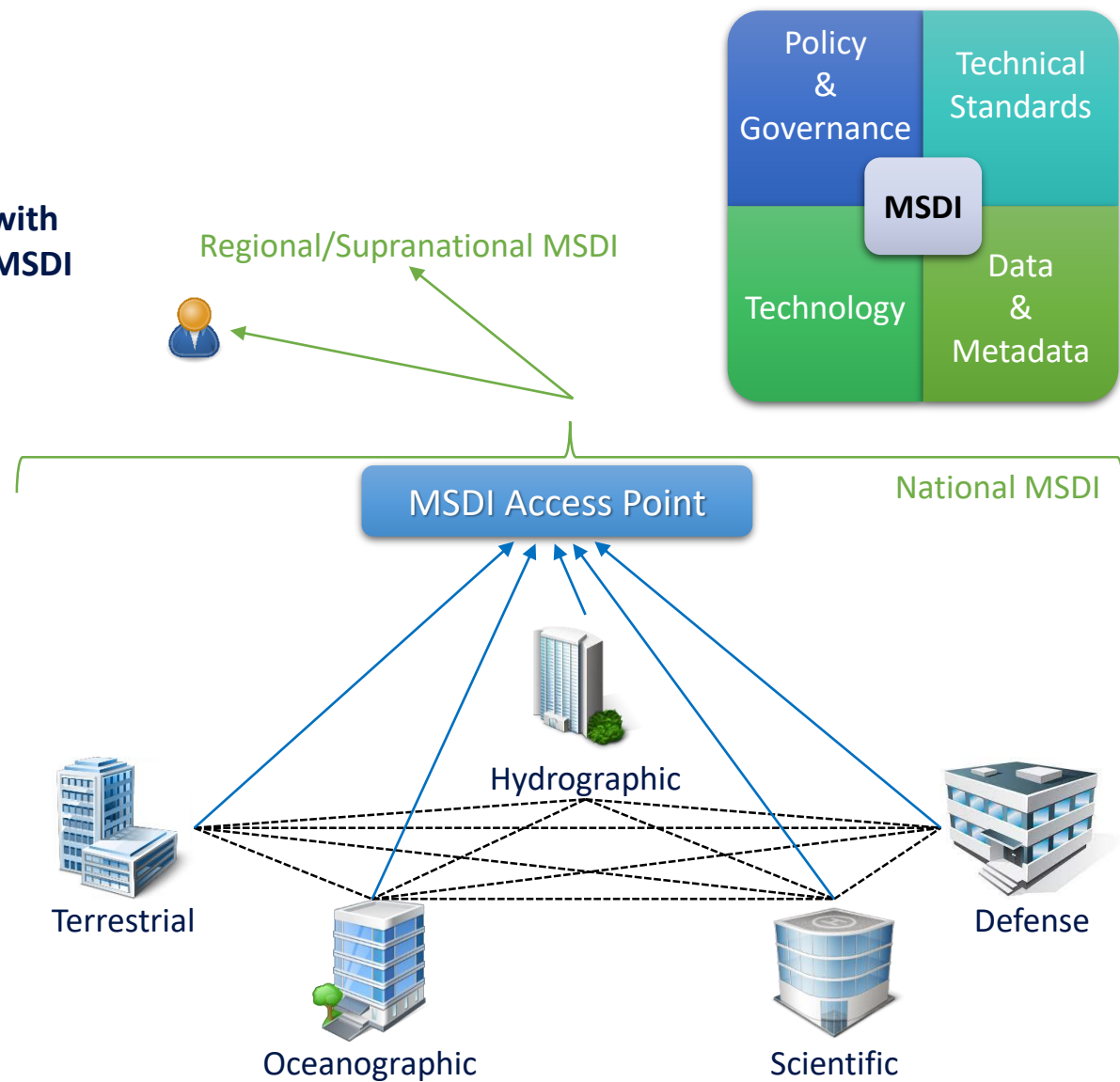
1. MARINE SPATIAL DATA INFRASTRUCTURE

1.2. WHAT IS A MSDI

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with MSDI





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1. MARINE SPATIAL DATA INFRASTRUCTURE

1.3. BENEFITS OF A MSDI



Navigation



Trade



Environment



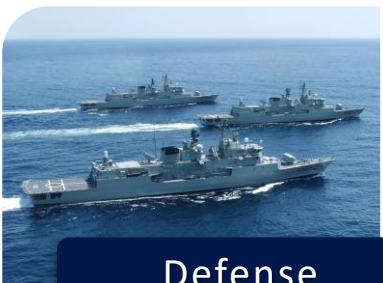
Fisheries



Resources



Infrastructures



Defense



Search & Rescue



Research





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1. MARINE SPATIAL DATA INFRASTRUCTURE

1.4. HYDROGRAPHIC OFFICES AND MSDI

International
Hydrographic
Organization

Acquisition



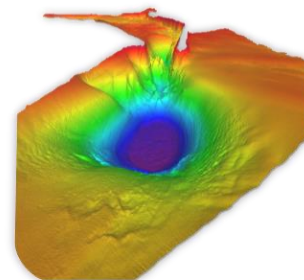
Data



Extended use



Intermediate
Product



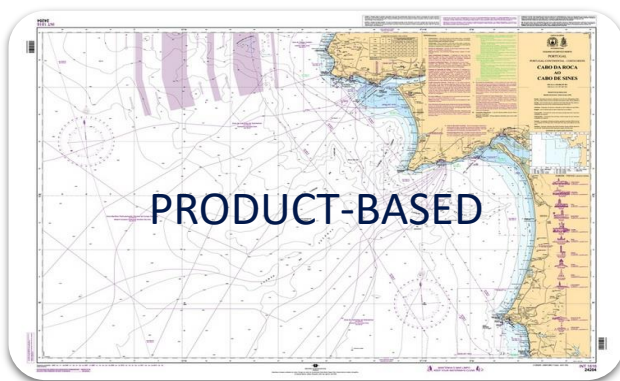
Extended use



Purpose Built
Product



Extended use



DATA-CENTRICITY



Re-use of data
Broader use of data

DATA VALUE





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1. MARINE SPATIAL DATA INFRASTRUCTURE

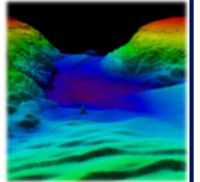
1.5. IHO STRATEGIC PLAN

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Goal 1

Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation.



Goal 2

Increasing the use of hydrographic data for the benefit of society.

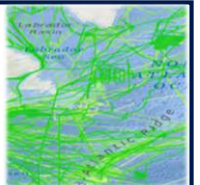
Target 2.1 – Build a portal to **support and promote** regional and international **cooperation in MSDI**.

Target 2.3 – Apply UN shared **guiding principles** for **geospatial information management** in order to ensure **interoperability and extended use of hydrographic data** in combination with other marine-related data.



Goal 3

Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean.





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1. MARINE SPATIAL DATA INFRASTRUCTURE

1.6. MARINE SPATIAL DATA INFRASTRUCTURE WORKING GROUP

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➔ Background:

- Subsidiary body of the IRCC;
- Established in May 2007.

➔ Composition:

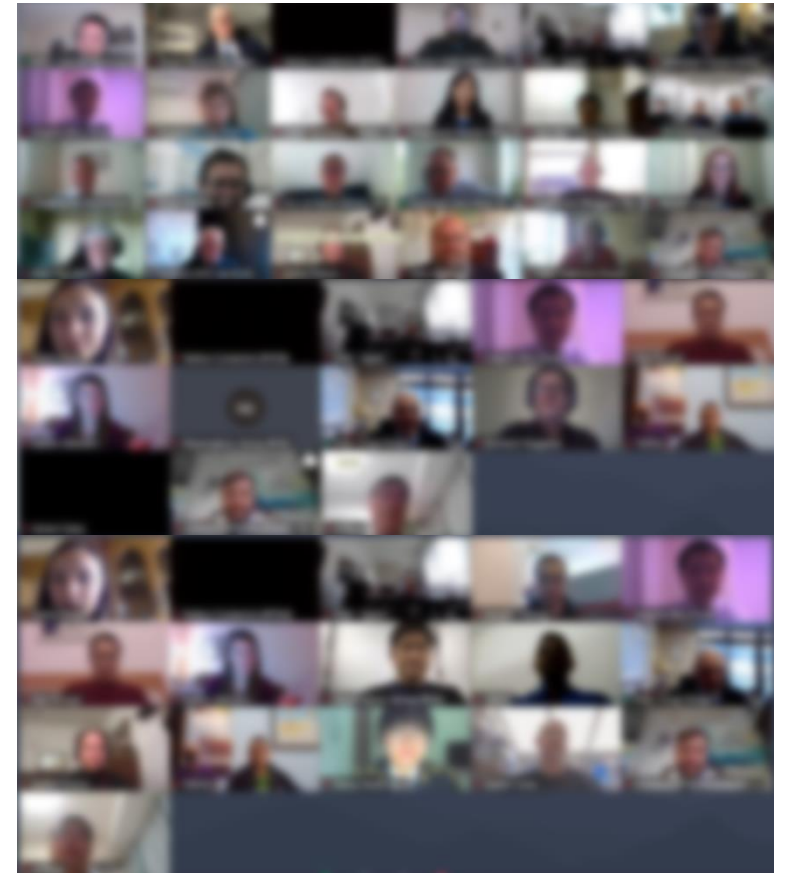
- Representatives of member states: 37;
(EAtHC: France, Nigeria, Portugal, Spain)
- Expert contributors: 23.

➔ Objective:

- Support the activities of the IHO related to SDI, MSDI and MSP, as far as marine data is involved.

➔ Last meeting:

- 17 and 18 March 2021 (VTC).





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1. MARINE SPATIAL DATA INFRASTRUCTURE

1.6. MARINE SPATIAL DATA INFRASTRUCTURE WORKING GROUP

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➔ Publication C-17:

- Procedural guidelines and implementation plan for MSDI.

➔ Body of Knowledge (BoK):

- Learning materials;
- Reports;
- White papers;
- Related standards;
- Best practices;
- Templates;
- Frequently Asked Questions.

Body of Knowledge

MSDI Training material (in-kind contribution from Denmark) >>>> NEW <<<<

- [Download from the IHO website](#)
- [Download via Dropbox](#)
- [Use the interactive material in Youtube](#)

Marine SDI Documents:

- [IHO-OGC Marine SDI Concept Development Study \(CDS\)](#) >>>> NEW <<<<
- [White Paper - Realizing the benefits of Spatial Data Infrastructures in the Hydrographic Community](#)
- [SDI/MSDI Related Standards](#)
- [Frequently Asked Questions on SDI](#)
- [SDI Stakeholders](#)
- [Hydrographic Data Policy for SDI](#) (Best practices for Hydrographic Offices)
- [White Paper - The Hydrographic and Oceanographic Dimension to Marine Spatial Data Infrastructure Development](#)
- [Developing the capability](#) (A contribution from the MSDIWG Experts Contributors)

Miscellaneous:

- [Arctic SDI prepared by the Norwegian Hydrographic Service](#) >>>> NEW <<<<
- [IHO MSDIWG Case Study Template](#)
- [Template for a license agreement embracing rights for the derivation of data](#)
- [Draft of MSDI Use Case Template](#)
- [New Zealand Bathymetry Investigation Report](#) (2015)
- [MSP Governance Framework Report](#) (2014)
- Links to the SDI/MSDI portals worldwide ([access in the MSDIWG Basic Documents](#))
- [UN-GGIM: A Guide to the Role of Standards in Geospatial Information Management \(2015\)](#)
- [UN-GGIM: A Guide to the Role of Standards in Geospatial Information Management - Companion document](#)
- [UN-GGIM: Future trends in geospatial information management: the five to ten year vision \(July 2013\)](#)
- [BLAST](#) [Bringing Land and Sea Together] Project
- [Arctic RHC](#): IHO MSDIWG CaseStudy Arctic MSDI Use Case
- [USA GDA](#): U.S. Geospatial Data Act (GDA) of 2018 Fact Sheet
- [USA GDA](#): U.S. Geospatial Data Act of 2018
- [USA GDA](#): U.S. Geospatial Data Act of 2018 Summary



SPATIAL DATA INFRASTRUCTURES "THE MARINE DIMENSION"

Guidance for Hydrographic Offices

Publication C-17
Second Edition
Version 2.0.0 - January 2017



This page contains links to MSDI training materials created for the MSDIWG by ITC Technologies together with input from DGA and IHO in 2019. Links to PDF copies of training booklets and slides are below as well as an eLearning course for self-study. The materials are designed to be used either individually or in a group or workshop context.

MSDI Orientation. This is a basic short course designed for stakeholders with little or no experience of MSDI. It concentrates on the basic concepts and definitions required along with examples and simple illustrations of MSDI. The links below contain PDF copies of training material slides and a booklet with explanatory notes and background information on the training materials.

[MSDI Orientation - Presentation Slides](#)

[MSDI Orientation - Training Booklet](#)

Fundamentals of MSDI. These training materials are aimed at professionals with a marine geospatial background but with little direct experience of MSDI implementation. They contain more detailed descriptions and examples drawn from a hydrographic context. Links are given to the training material guides and slides.

[MSDI Fundamentals - Presentation Slides](#)

[MSDI Fundamentals - Training Booklet](#)

An interactive eLearning course has also been produced. The course takes around 3 hours and is a combination of material from the Orientation and Fundamentals training materials.

[MSDI Fundamentals - interactive eLearning Course](#)



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1. MARINE SPATIAL DATA INFRASTRUCTURE

1.6. MARINE SPATIAL DATA INFRASTRUCTURE WORKING GROUP

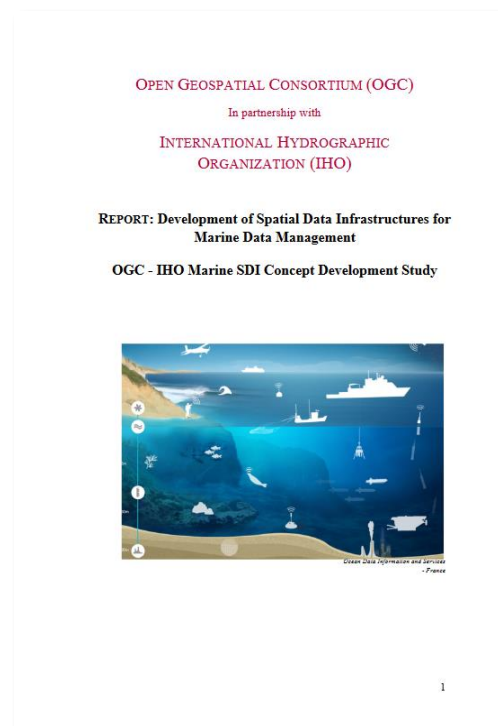
International
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➔ Current developments/actions:

- Promote MSDI in the RHC: through MSDI Ambassadors and MSDI Working Groups;
- Update publication C-17;
- Improve learning materials;
- S-100 from a MSDI perspective;
- Identify core data for input to MSDI;
- Cooperate with the OGC Federated MSDI;
- Alignment with UN-GGIM IGIF and IGIF Water;

➔ Next meeting:

- October 2021 (Singapore / VTC).





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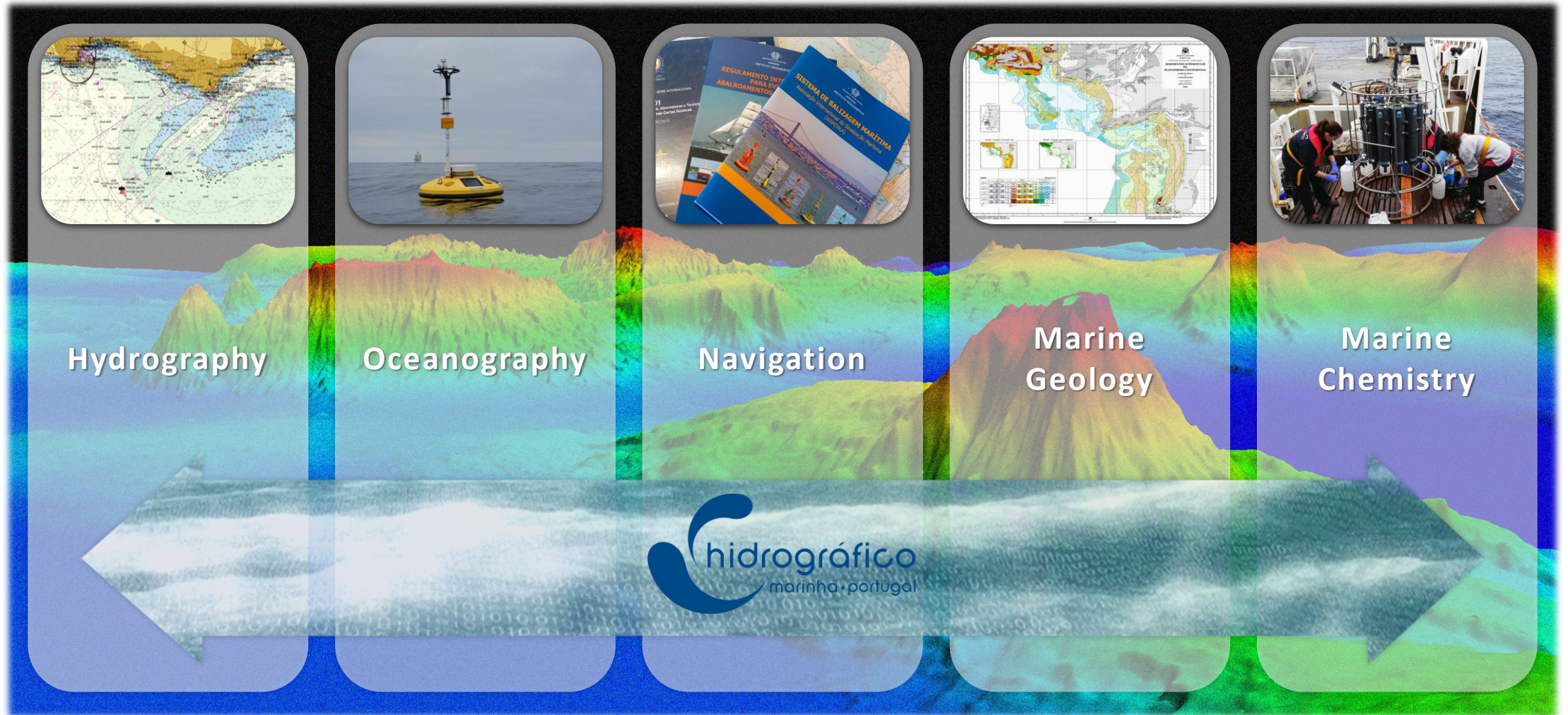


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2. EXAMPLE – HIDROGRAFICO PLUS

2.1. DATA SOURCES

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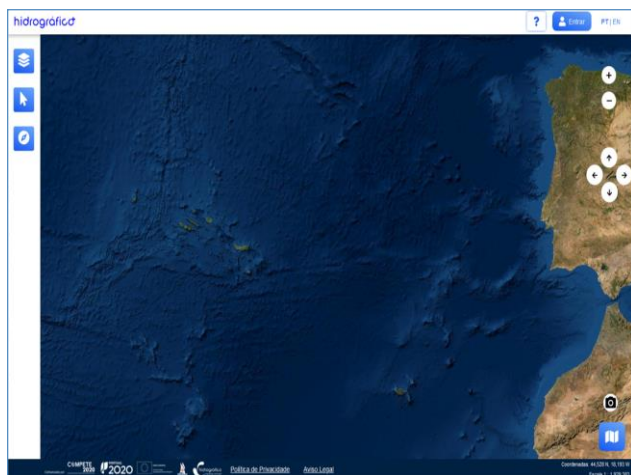
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2. EXAMPLE – HIDROGRAFICO PLUS

2.2. PROJECT STRUCTURE

hidrográfico

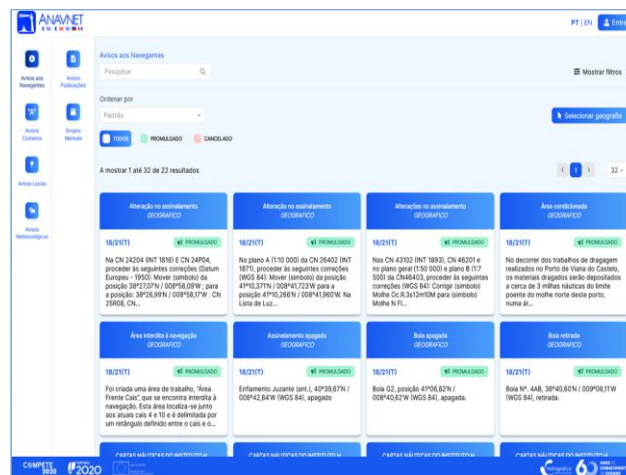
INTEROPERABILITY
MODULARITY
SCALABILITY



GeoPortal H+

Download
OGC Services
API

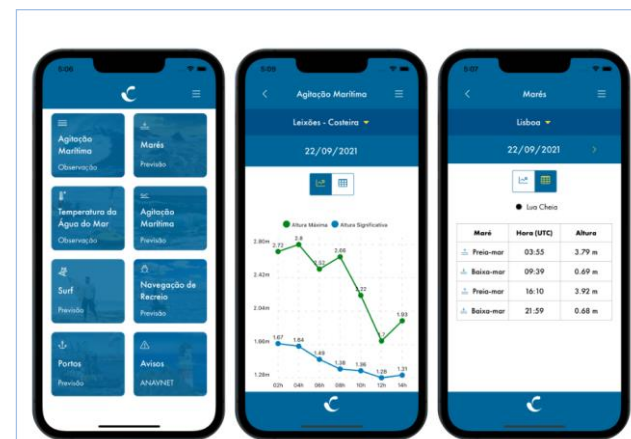
<https://geomar.hidrografico.pt>



AnavNet

Notices to Mariners
Navigational Warnings
Weather Warnings

November 2021



App H+

Sea State / Wind / Tide
Seawater Temperature
AnavNet

Download on the
App Store

Available on the
Google Play



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2. EXAMPLE – HIDROGRAFICO PLUS

2.3. GEOPORTAL

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Data catalogue
(hydrography,
geology,
oceanography,
chemistry,
cartography...)



Data operations
(distances, identify,
geometry creation...)



Services
(sea travel planning)



Scientific campaigns



Map interaction
(layers projection,
coordinate system...)



User management
(authentication,
authorization)



Ease of use
(tutorial,
multi
language)



User support
(contacts,
support requests,
feedback)



Infrastructure
management and
operations



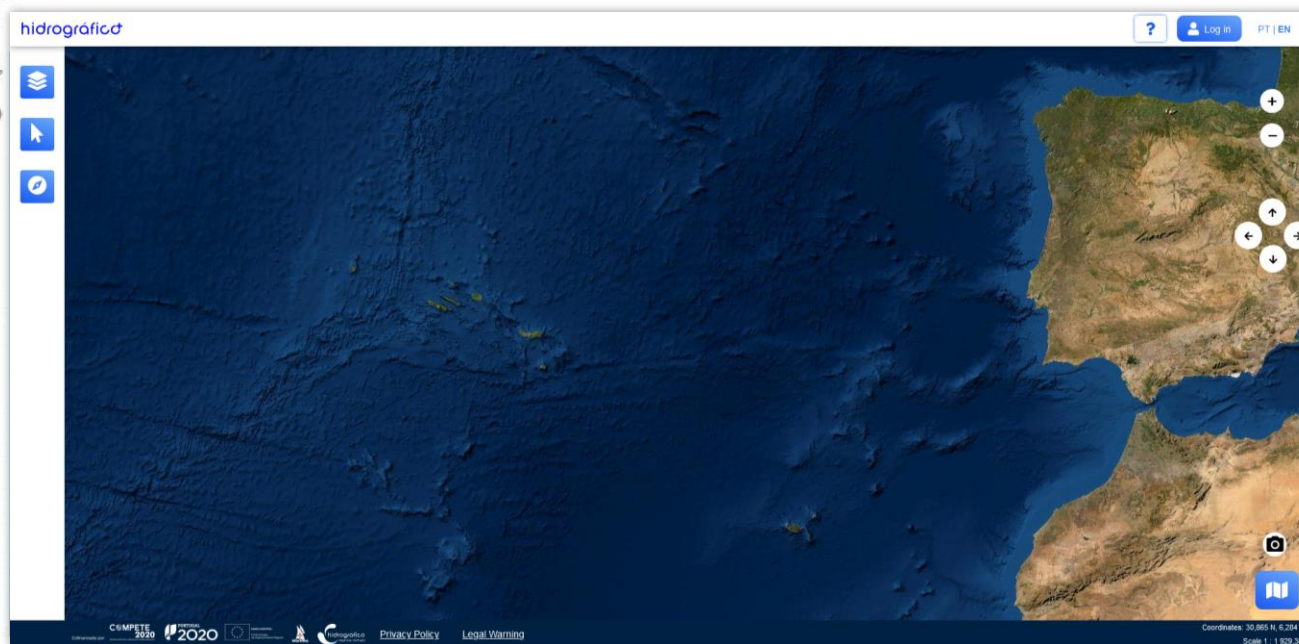
Data analytics
(timeseries)



Integration with
user data



Data acquisition





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3. REQUEST FOR INFORMATION

3.1. ONLINE SURVEY

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➔ Objective:

- ✓ Assess MSDI awareness between EAtHC members;
- ✓ Assess the need to establish a EAtHC MSDI WG.

➔ Participation rate:

- ✓ Member states: 4 of 8 (**50 %**);
(France, Morocco, Portugal, Spain)
- ✓ All: 5 of 26 (**19 %**).
(United Kingdom)

➔ Full results:

- ✓ Appended to this presentation.



EAtHC/CHATO MSDI Questionnaire



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3. REQUEST FOR INFORMATION

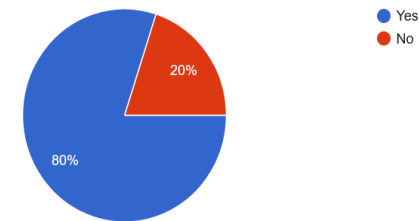
3.1. ONLINE SURVEY

➔ Main conclusions:

- ✓ Majority of respondees has MSDI in their organizations (**80 %**);
- ✓ Major challenges to MSDI development:
 - Lack of finance support (**100 %**);
 - Lack of organizational support (**60 %**);
 - Lack of human resources skills (**60 %**);
- ✓ Majority of respondees agrees with the creation of a EAtHC MSDI WG (**60 %**) and would enroll as member (**80 %**);
- ✓ Main activities to be conducted by a EAtHC MSDI WG:
 - Capacity building;
 - Knowledge base and best procedures development;
 - Help EAtHC members to build their MSDI.

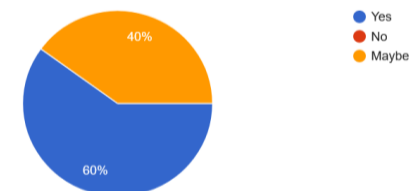
3. Do you have any MSDI in your organization?

5 respostas



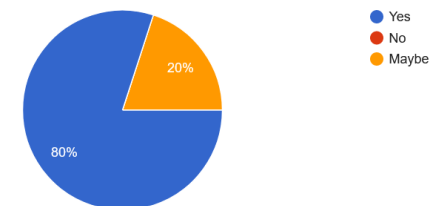
18. Will be important to develop an effort to organize a MSDI WG under EAtHC/CHATO umbrella?

5 respostas



20. If a EAtHC/CHATO MSDI WG exists will your organization enroll as member?

5 respostas





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4. RECOMMENDATIONS

4.1. ACTIONS LIST – EAtHC MSDI WG ESTABLISHMENT

Action Item	Description	Date to report	Responsible
	Decide on the establishment of EAtHC MSDI WG. Elect Chair and Vice-Chair. Enroll members.		EAtHC16
EAtHC16 MSDI 01	Propose the terms of reference (ToR) and rules of procedure (RoP) of the EAtHC MSDI WG.	December 2021	Chair All
EAtHC16 MSDI 02	Create a webpage with supporting documents and information.	March 2022	Chair
EAtHC16 MSDI 03	Build an inventory (with links) of existing MSDI in the EAtHC region.	April 2022	Chair All
EAtHC16 MSDI 04	Create a list of common/base layers to the MSDI projects (bathymetry, shoreline, maritime boundaries, etc.).	May 2022	Chair All

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4. RECOMMENDATIONS

4.2. ACTIONS LIST – EAtHC15

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Action Item	Description	Date to report	Responsible
EAtHC 15-11	Review the procedures for the transmission of survey data, in order to make sure that all relevant national organizations can access the survey data covering their national waters.	Permanent	All Coastal States
EAtHC 15-30	To upgrade national sea level stations identified by NEAMTWS Implementation Plan to real time data delivery and participate in data exchange. To exchange coastal bathymetry data in accordance with relevant resolution of IOC and IHO Circular letter 36/2006 regarding tsunami and coastal inundation modeling.	Permanent	All Coastal States
EAtHC 15-31	EAtHC members are invited to identify further potential sources of bathymetric measurements and survey data providers to facilitate the further completion of the Data Center for Digital Bathymetry (DCDB) data holdings.	Permanent	All Coastal States
EAtHC 15-32	Member States to provide the following information in their national report: <ul style="list-style-type: none">- Development status of maritime spatial data infrastructures (MSDI);- Involvement plans in MSDI;- Challenges faced by the Coastal State regarding MSDI.	Permanent	All Coastal States
EAtHC 15-37	EAtHC members are invited to consider the future invitation of Seabed 2030 project representatives to EAtHC meetings to discuss options for deepened cooperation and support.	Permanent	All Coastal States

To be developed as a concrete action by MSDI WG.

To be developed as a concrete action by MSDI WG.

To be developed as a concrete action by MSDI WG.

To be closed (already referred in National Reports structure).

To be developed as a concrete action by MSDI WG.



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4. RECOMMENDATIONS

4.3. ACTIONS LIST – IRCC13

Action Item	Description
IRCC Recommendation 03	RHC and MS to advise the IHO Secretariat of any update/change to their position in relation with the CSB questionnaire (IHO CL 21/2020).
IRCC Recommendation 04	RHC to identify regional coordinators to act as a point of contact for CSB/Seabed 2030 and to raise the profile of data gather and provision within their respective Region.
IRCC Recommendation 14	RHCs to encourage all Member States to actively contribute with new data to GEBCO and to discuss how MS can share existing data
IRCC Recommendation 15	Encourage RHCs and relevant Bodies to contribute to the recommendations provided by Shell to increase the cooperation between HO's and Natural source Regulators and reduce permitting requirements for transits through countries EEZ's

To be developed as a concrete action by MSDI WG.

To be developed as a concrete action by MSDI WG.

To be developed as a concrete action by MSDI WG.

To be developed as a concrete action by MSDI WG.

EAtHC MSDI WG to be responsible for *Seabed 2030*, *Crowdsourced Bathymetry* and other programs/projects related with **managing and sharing marine spatial data.**



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5. ACTIONS REQUESTED FROM EAtHC16

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➔ **EAtHC is invited to:**

1. Take note of the presentation.
2. Decide on the establishment of a EAtHC MSDI WG, elect Chair and Vice-Chair and enroll members.
3. Discuss any item with relevance to MSDI and take appropriate actions.

Thank you for your attention



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REFERENCES

International
Hydrographic
Organization

➔ [IHO Strategic Plan for 2021-2026](#)

➔ [Publication C-17](#)

➔ [IRCC MSDI WG](#)

➔ [IRCC MSDI WG Last Meeting](#)

➔ [MSDI Body Of Knowledge](#)

➔ [MSDI Training Materials](#)