



# Eastern Atlantic Hydrographic Commission VTC

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

**Portuguese Hydrographic Office**

**Agenda Item 03.4A**



**IHO**

## Agenda

International  
Hydrographic  
Organization

**1**

**MSDI WG**

**2**

**EAtHC MSDI WG**

**3**

**CSB WG**

**4**

**Actions requested from EAtHC**





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# 1. Marine Spatial Data Infrastructure Working Group

## 1.1. MSDI WG

International  
Hydrographic  
Organization

### ➔ Background:

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

### ➔ Composition:

- Representatives of member states: 33;  
(EAtHC: France, Nigeria, Portugal, Spain, UK, USA)
- Expert contributors: 16.

### ➔ Objective:

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

## MSDIWG

### MARINE SPATIAL DATA INFRASTRUCTURES WORKING GROUP (MSDIWG)

<b>Chair:</b>	Mr Jens Peter HARTMANN (Denmark)
<b>Vice-Chair:</b>	Ms Pearlyn PANG (Singapore)
<b>Secretary:</b>	Mr Leonel MANTEIGAS (IHO Secretariat)

### Objectives

Assess the status of Spatial Data Infrastructures (SDI), Marine Spatial Data Infrastructures (MSDI) and Marine Spatial Planning (MSP) worldwide. Support and promote the activities of the IHO in these fields. The WG develops and maintains the IHO Publication C-17 Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices. Members are representatives of Member States, Expert Contributors and Accredited NGIO Observers.

### Meeting Documents

Only documents for upcoming, current and previous years meetings are listed left. All earlier meeting documents are available from the [IHO Document Archive](https://iho.int/en/msdiwg).

<https://iho.int/en/msdiwg>



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# 1. Marine Spatial Data Infrastructure Working Group

## 1.1. MSDI WG

International  
Hydrographic  
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### ➔ Last meeting (MSDIWG14):

- 30JAN-03FEB 2023 – Genoa – Italy.

### ➔ Topics:

- Presentations from MS and expert contributors;
- Updates to C-17;
- S-100 products;
- Maritime Digital Twins.

### ➔ Next meeting (MSDIWG15):

- 04-08MAR2024 – Indonesia.



<https://iho.int/en/msdiwg14-2023>



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# 1. Marine Spatial Data Infrastructure Working Group

## 1.2. IHO e-Learning Center

International  
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Organization

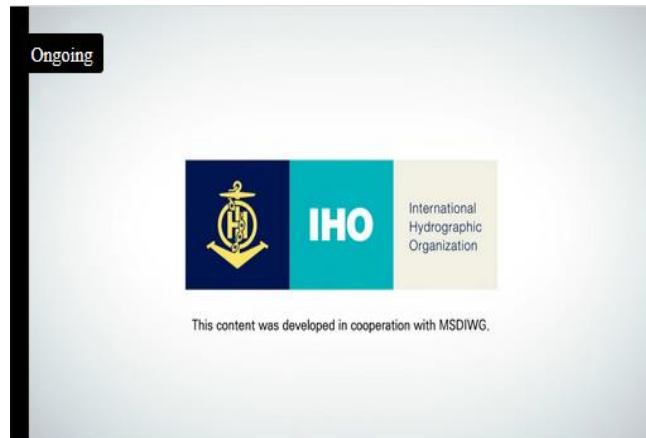
### ➔ MSDI Courses:

- MSDI fundamentals (older)
- Fundamentals of MSDI

### ➔ Wiki (?)

- Collaborative
- Specific focus

<https://elearning.iho.int>



MSDI Self-paced

### MSDI fundamentals

📅 Enrollment Period	08-25-2022 ~ 12-31-2022
📅 Learning period	08-25-2022 ~ 12-31-2022(18 weeks)
🕒 Lecture_time	2h 28m
🏠 Provider	MSDIWG

- 🕒 Take the course at your own pace
- 📄 Downloadable Certificate  
Earn a certificate upon the course completion
- 💰 100% Free



MSDI Self-paced

### Fundamentals of MSDI (Marine Spatial Data Infrastructure)

📅 Enrollment Period	11-01-2021 ~ 12-31-2022
📅 Learning period	11-01-2021 ~ 12-31-2022(61 weeks)
🕒 Lecture_time	2h38m
🏠 Provider	

- 🕒 Take the course at your own pace
- 📄 Downloadable Certificate  
Earn a certificate upon the course completion
- 💰 100% Free



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# 1. Marine Spatial Data Infrastructure Working Group

## 1.3. Publication C-17

International  
Hydrographic  
Organization

### → New structure:

- Chapter 1 – Introduction and background
- Chapter 2 – Role of HO and MSDI
- Chapter 3 – MSDI maturity
- Chapter 4 – IGIF 9 pathways from the HO perspective
- Chapter 5 – Emerging trends in MSDI
- Chapter 6 - Conclusion
- Glossary

<https://iho.int/en/capacity-building-publications>

C-17

### Spatial Data Infrastructures

### “The Marine Dimension”

Guidance for Hydrographic Offices

Edition 3.0.0 – October 2023

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International  
Hydrographic  
Organization

Published by the  
International Hydrographic Organization  
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# 1. Marine Spatial Data Infrastructure Working Group

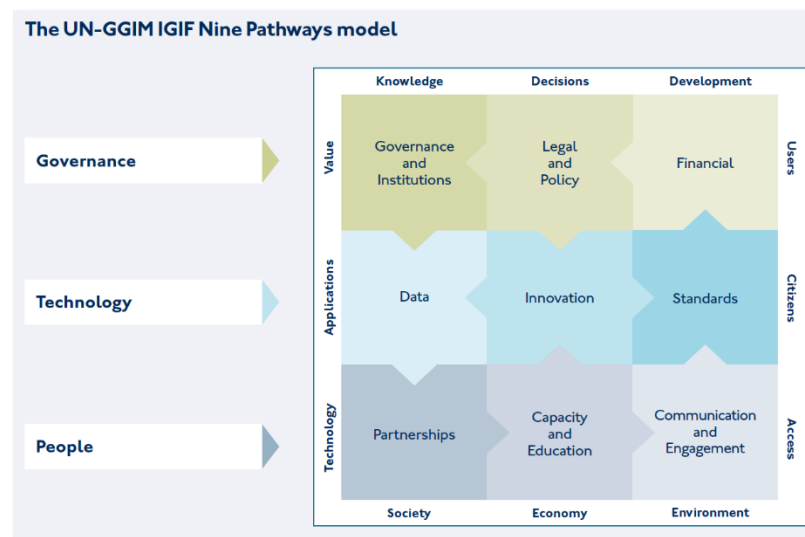
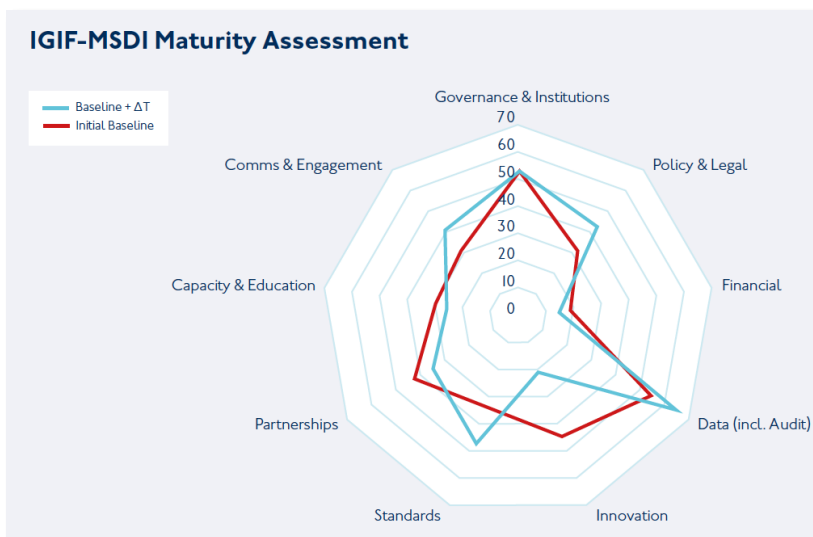
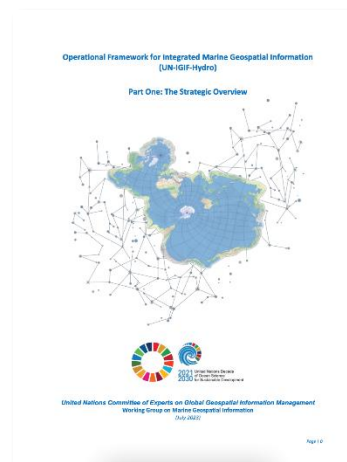
## 1.4. UN-GGIM – Working Group on Marine Geospatial Information

International Hydrographic Organization

### ➔ Integrated Geospatial Information Framework:

- IGIF – Part 1 – Overarching Strategy
- IGIF – Part 2 – Implementation Guide
- IGIF – Part 3 – Country-level Action Plan
- UN-IGIF-Hydro - Part 1 - Strategic Overview
- UN-IGIF-Hydro - Part 2 - The Strategic Pathways
- IGIF-(M)SDI Maturity Roadmap

<https://ggim.un.org/UNGGIM-wg8>





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# 1. Marine Spatial Data Infrastructure Working Group

## 1.5. OGC – Open Geospatial Consortium

International Hydrographic Organization

### ➔ OGC APIs (Application Programming Interface):

- Replace web services (WMS, WFS, etc.)
- Backwards compatible

<https://ogcapi.org>

pygeoapi Contact

Home / Collections / Windmills within The... / Items json jsonld

### Windmills within The Netherlands

Items in this collection.



Warning: Higher limits not recommended!

Limit: 10 (default)

[Next](#)

id	gid	NAAM	PLAATS	CATEGORIE
<a href="#">Molens.1</a>	1	De Trouwe Waghter of Trouwe Wachter	Tienhoven	windmolen
<a href="#">Molens.2</a>	2	Molen Gabriël of Voorste Molen	Kortenhoef	windmolen
<a href="#">Molens.3</a>	3	Loenderveense Molen	Loenen aan de Vecht	windmolen
<a href="#">Molens.4</a>	4	De Slokop	Spaarndam	windmolen
<a href="#">Molens.5</a>	5	Westveense Molen	Woerdense Verlaat	windmolen
<a href="#">Molens.6</a>	6	Kockengense Molen	Kockengen	windmolen
<a href="#">Molens.7</a>	7	Spengense Molen	Kockengen	windmolen
<a href="#">Molens.8</a>	8	Kortrijkse Molen	Breukelen	windmolen
<a href="#">Molens.9</a>	9	De Woudaap	Krommeniedijk	windmolen
<a href="#">Molens.10</a>	10	De Tweede Broekermolen	Uitgeest	windmolen

### APIs for the Web

**Features**  
Approved Standard

OGC API - Features - Part 1: Core and Part 2: Coordinate Reference Systems by Reference are both publicly available.

[More Info](#) [GitHub repo](#)

**Common**  
Approved Standard

OGC API - Common specifies those building blocks that are shared by most or all OGC API Standards to ensure consistency across the family.

[More Info](#) [GitHub repo](#)

**EDR**  
Approved Standard

Environmental Data Retrieval (EDR) API provides a family of lightweight interfaces to access Environmental Data resources. Each resource addressed by an EDR API maps to a defined query pattern.

[More Info](#) [GitHub repo](#)

**Tiles**  
Approved Standard

OGC API - Tiles provides extended functionality to other OGC API Standards to deliver vector tiles, map tiles, and other tiled data.

[More Info](#) [GitHub repo](#)

**Processes**  
Approved Standard

OGC API - Processes allows for processing tools to be called and combined from many sources and applied to data in other OGC API resources through a simple API.

[More Info](#) [GitHub repo](#)

**Coverages**  
OGC API - Coverages allows discovery, visualization and query of complex raster stacks and data cubes.

[More Info](#) [GitHub repo](#)





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International  
Hydrographic  
Organization

1

MSDI WG

2

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3

CSB WG

4

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## 2. Eastern Atlantic Hydrographic Commission MSDI WG

### 2.1. EAtHC MSDI WG

International  
Hydrographic  
Organization

#### ➔ Background:

- Established in EAtHC16.

#### ➔ Composition:

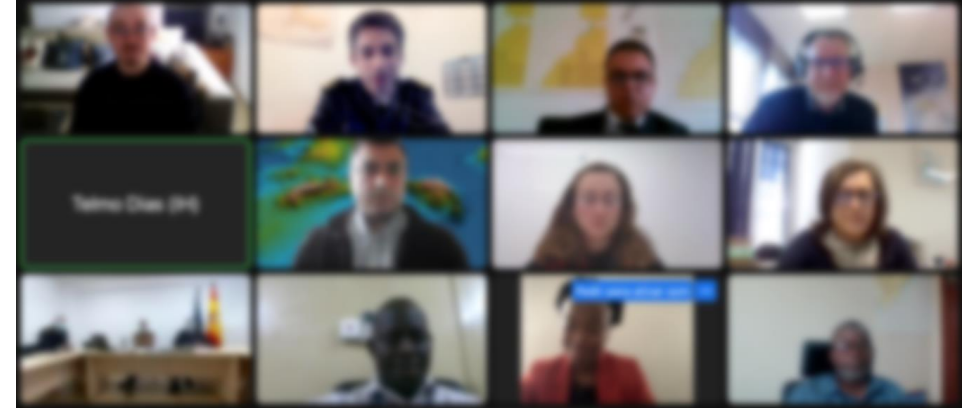
- 8 members;
- MS: France, Ghana, Morocco, Nigeria, Portugal, Spain;
- AM: UK;
- OBS: Gambia.

#### ➔ Objective:

- Support the activities of the EAtHC related to MSDI, focusing on managing and sharing marine spatial data and extending its use.

#### ➔ Last meeting:

- 03 May 2023 (VTC) – Only attended by Spain and UK.



<https://iho.int/en/eathc-msdiwg>

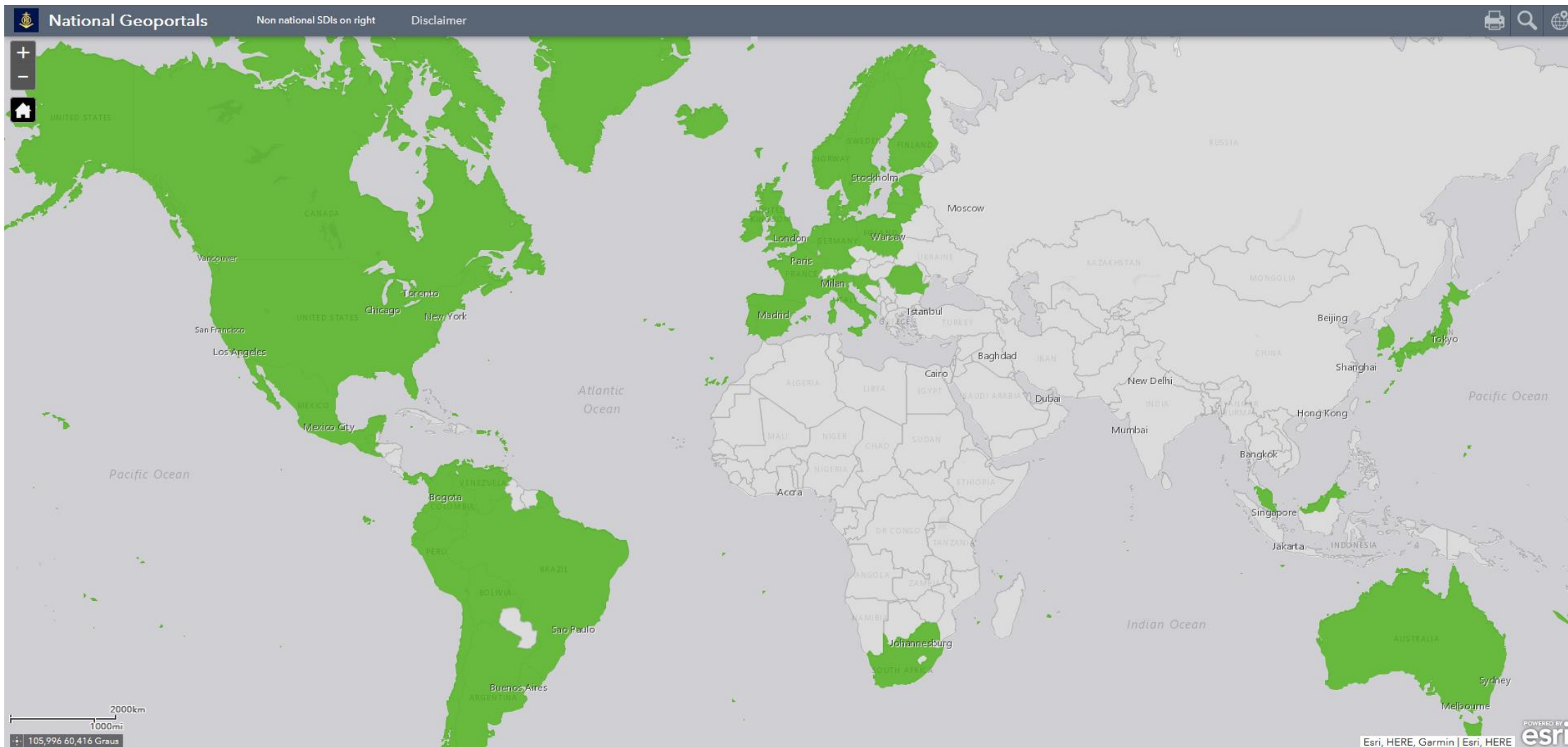


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## 2. Eastern Atlantic Hydrographic Commission MSDI WG

### 2.2. EAtHC SDI/MSDI Implementation – IHO Web App

International Hydrographic Organization





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## 2. Eastern Atlantic Hydrographic Commission MSDI WG

### 2.2. EAtHC SDI/MSDI Implementation – IHO Web App

International  
Hydrographic  
Organization

The screenshot shows the 'National Geoportals' web application interface. At the top, there is a navigation bar with the IHO logo, the text 'National Geoportals', and links for 'Non national SDIs on right' and 'Disclaimer'. The main area is a world map where several countries are highlighted in green: the United States, Canada, Mexico, France, Portugal, Spain, the United Kingdom, and Australia. A pop-up window titled 'Portugal' is open over the country, displaying the text 'Link to the SDI/MSDI web portal:' followed by two blue hyperlinks: 'Hidrografico Plus' and 'SNIG', and a link 'Aplicar zoom a'. The map includes various city labels such as Vancouver, Los Angeles, San Francisco, Chicago, New York, Toronto, London, Stockholm, Moscow, Warsaw, Beijing, Shanghai, Tokyo, New Delhi, Mumbai, Dubai, Bangkok, Singapore, Jakarta, and Sydney. The map also shows the Atlantic Ocean, Indian Ocean, and Pacific Ocean. In the bottom left corner, there is a scale bar for 2000km and 1000mi, and coordinates -7,383 42,685 Graus. In the bottom right corner, it says 'POWERED BY esri' and 'Esri, HERE, Garmin | Esri, HERE'.

➔ [https://iho.int/en/iho-online-catalogues:](https://iho.int/en/iho-online-catalogues)

- France
- Portugal
- Spain
- UK
- USA





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## 2. Eastern Atlantic Hydrographic Commission MSDI WG

### 2.3. MSDI Implementation – EAtHC Web App

International  
Hydrographic  
Organization

Eastern Atlantic Hydrographic Commission Marine Spatial Data Infrastructure Working Group

IHO EAtHC EAtHC MSDI WG

Find address or place

United Kingdom  
France  
Spain  
Portugal  
Morocco  
Chana  
Nigeria

<https://hidrografico.maps.arcgis.com/apps/webappviewer/index.html?id=0ed6d8d8a8fe4ae58be604f1dd1b9f26>

800mi  
-64.227 35.099 Degrees

Earthstar Geographics POWERED BY esri

All rights reserved





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## 2. Eastern Atlantic Hydrographic Commission MSDI WG

### 2.3. MSDI Implementation

International  
Hydrographic  
Organization

#### ➔ How to improve MSDI engagement in EAtHC?

- Enrollment in IRCC MSDI WG.
- Learning materials (specific contents).
- Workshops/webinars:
  - Importance of MSDI;
  - Technical tools;
  - Practical use cases.





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## 2. Eastern Atlantic Hydrographic Commission MSDI WG

### 2.4. Actions List

International  
Hydrographic  
Organization

Action Item	Description			
(MSDI) 16-01	Review the procedures for the transmission of survey data, in order to make sure that all relevant national organisations can access the survey data covering their national waters.	All coastal States	Permanent	In progress
(MSDI) 16-02	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 and General Bathymetric Chart of the Oceans (GEBCO).	EAtHC Members	Permanet	In progress
(MSDI) 16-05	Propose the terms of reference (ToR) and rules of procedure (RoP) of the EAtHC MSDI WG.	MSDIWG Chair	EAtHC18	Completed
(MSDI) 16-07	Build an inventory (with links) of existing MSDI in the EAtHC region.	MSDIWG Chair & Coastal States	EAtHC18	That info is published in IHO website
(MSDI) 16-08	Create a list of common/base layers to the MSDI projects (bathymetry, shoreline, maritime boundaries, etc.)	MSDIWG Chair & Coastal States	EAtHC18	Fusion with 17-02 (web app)



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## 2. Eastern Atlantic Hydrographic Commission MSDI WG

### 2.4. Actions List

International Hydrographic Organization

Action Item	Description			
(MSDI) 17-01	Support the Crowdsourced Bathymetry (CSB) initiative with positive actions, such as requiring all research vessels, when on passage or when it does not interfere with other research activities, to collect bathymetric data for later uploading.	All coastal States	Permanent	In progress
(MSDI) 17-02	Maintain a web map application to use as testbed by EAtHC MSDI WG members and to publish and share hydrographic data.	EAtHC MSDI WG	EAtHC19	In progress
(MSDI) 17-03	Encourage all coastal states to respond to CSB questionnaire (IHO CL 21/2020, IRCC CL 1/2020) and, if possible, offer a positive response, even if qualified, to enable provision of CSB data into the public domain collected from ships within waters subject to their national jurisdiction.	IHO Member States	Permanent	In progress
(MSDI) 17-04	Plan a workshop on how to build a MSDI (geospatial data, spatial databases, web services, etc.)	MSDIWG Chair	EAtHC18	In progress Mid 2024
(MSDI) 17-05	Propose a measuring process for SPI 1.2.2 and SPI 2.2.1	EAtHC MSDI WG	EAtHC18	Dormant
(MSDI) 17-06	MSDIWG shall plan a table top exercise and submit it to the Chair.	EAtHC MSDI WG	EAtHC18	In progress



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International  
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1

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2

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## 3. CSB WG

### 3.1. CSB Working Group

#### ➔ Last meeting (CSBWG14):

- 16 – 18 Aug 2023 (Hybrid);
- Stavanger, Norway.

#### ➔ Composition:

- Representatives of member states: 15;  
(EAtHC: France, Portugal, UK, USA)
- Expert contributors: 22.

#### ➔ Next meeting:

- 13 Dec 2023 (VTC).







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### 3. CSB WG

#### 3.2. Workplan

<b>A</b>	Maintain and update IHO CSB Guidance Document (B-12)
<b>B</b>	Submit IHO CSB initiative as a UN Decade Action
<b>C</b>	Gather, prioritize and respond to HO-specific issues/opportunities regarding national policy/ regulations related to CSB
<b>D</b>	Gather and prioritize HO-specific issues relating to CSB data, including but not limited to Nautical Cartography
<b>E</b>	Support CSB/SB2030 Coordinators in their RHC engagement
<b>F</b>	Discuss and propose potential software tool support for HOs
<b>G</b>	Clarify support identified by current Trusted Nodes needed for current and future Trusted Nodes.
<b>H</b>	Clarify all aspects of the CSB data cycle and capture known issues, requirements and suggested enhancements.
<b>I</b>	Develop a communication plan in coordination and collaboration with related efforts (SB2030, GEBCO, etc)
<b>J</b>	Develop a recognition & incentive strategy plan



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### 3. CSB WG

#### 3.3. IHO CL 21/2020 & IRCC CL 01/2020

International  
Hydrographic  
Organization

- ➔ All coastal states are requested to indicate their position on the provision of CSB data from ships within waters subject to their jurisdiction into the public domain as well as
- ➔ To date, 34 coastal States have replied positively.
- ➔ **EAtHC:** Cameroon, France, Portugal, USA.
  
- ➔ **IHO CL 21/2020:**
  - Member states are requested to indicate their position on the provision of CSB data.
  - Review the CL and answer the questionnaire.
  - [https://iho.int/uploads/user/circular\\_letters/eng\\_2020/CL21\\_2020\\_EN\\_v1.pdf](https://iho.int/uploads/user/circular_letters/eng_2020/CL21_2020_EN_v1.pdf)
  
- ➔ **IRCC CL 01/2020:**
  - Member states are requested to indicate their position on the provision of CSB data.
  - Review the CL and answer the questionnaire.
  - [https://iho.int/uploads/user/Inter-Regional%20Coordination/IRCC/IRCC Letters/IRCC Letter 2020 01 CSB Activities.pdf](https://iho.int/uploads/user/Inter-Regional%20Coordination/IRCC/IRCC_Letters/IRCC_Letter_2020_01_CSB_Activities.pdf)



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1

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2

EAtHC MSDI WG

3

CSB WG

4

**Actions requested from EAtHC**





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## 4. Actions requested from EAtHC

International  
Hydrographic  
Organization

### → EAtHC is invited to:

1. Take note of the presentation.
2. Discuss any item with relevance to MSDI and take appropriate actions.

Thank you for your attention