

MSDIWG15

15th Meeting of the International Hydrographic Organization Marine Spatial Data Infrastructures Working Group

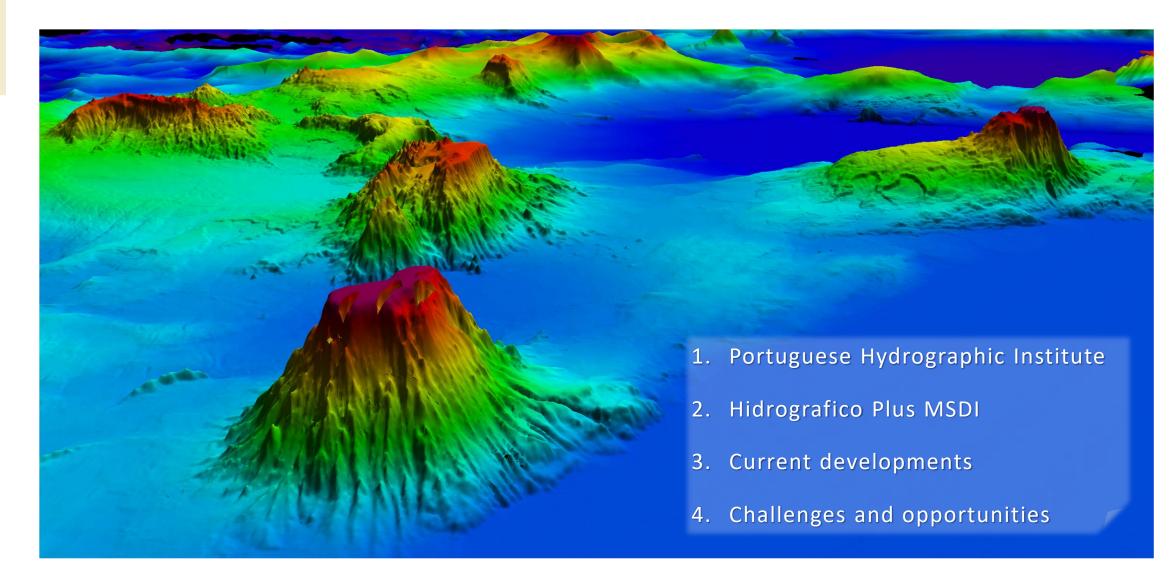
Portugal – Hydrographic Institute

CDR Telmo Dias

Bali, Indonesia, March 4th to March 8th, 2024



International Hydrographic Organization





1. Portuguese Hydrographic Institute 1.1. Data domains

International Hydrographic Organization

- ➡ Navy Body
- → Hydrographic Office
- ➡ State Laboratory





Headquarters, Lisbon

Hydrographic Base, Seixal





2. Hidrografico Plus MSDI

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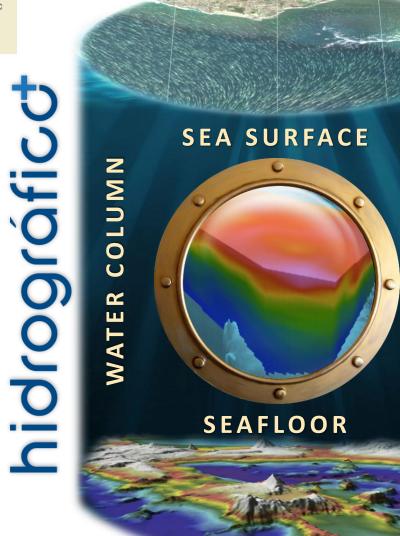
CEAN

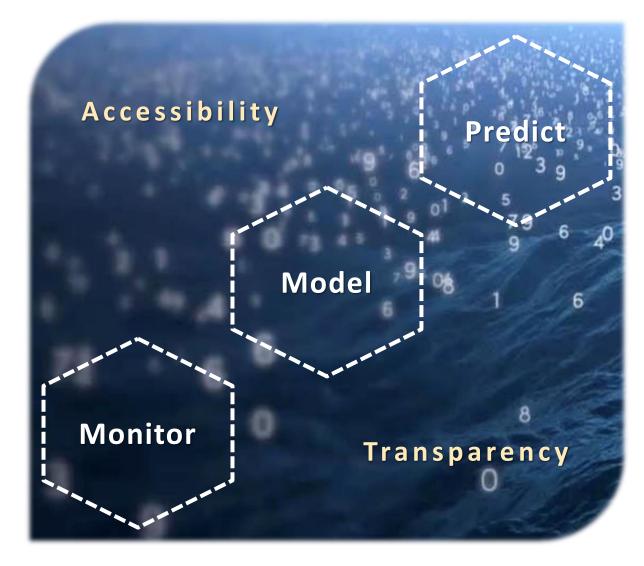
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2.1. Vision

Build an accessible and relevant digital twin of the ocean

International Hydrographic Organization



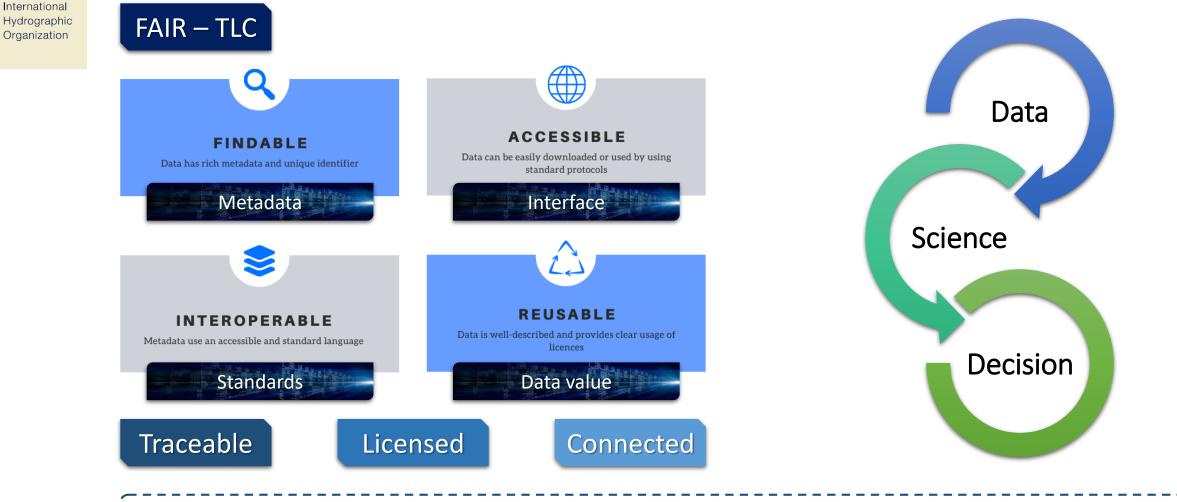




2. Hidrografico Plus MSDI

2.2. Mission

Promote ocean science, contributing to the sustainable and safe use of the sea

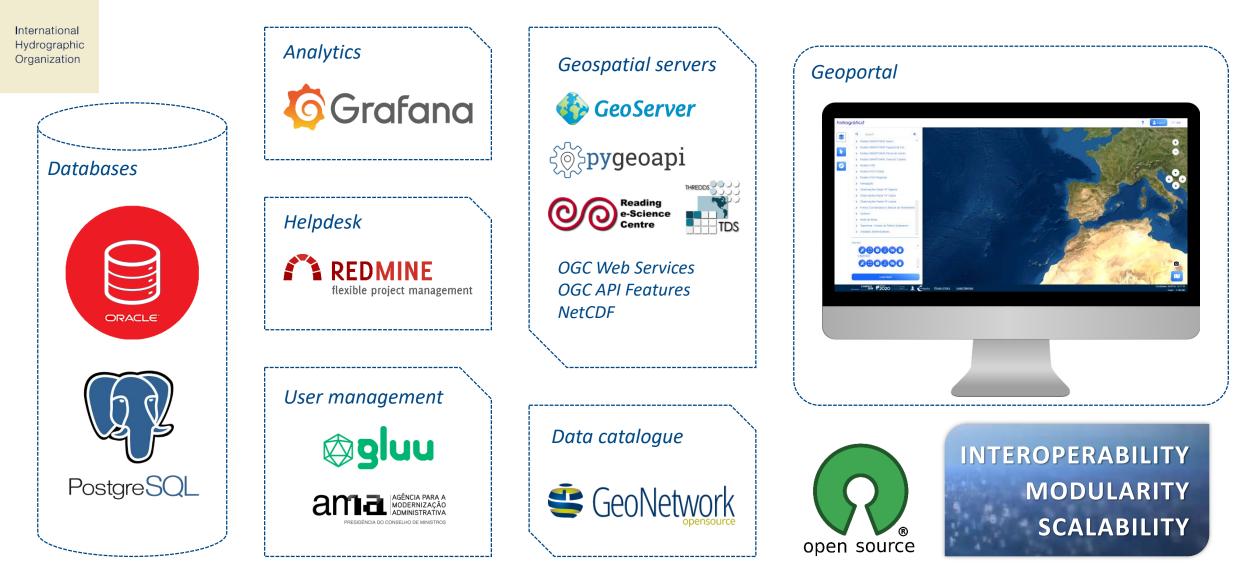


Involve and enable citizens, industries, and governments to make better-informed decisions (Blue Economy).



2. Hidrografico Plus MSDI

2.3. Architecture





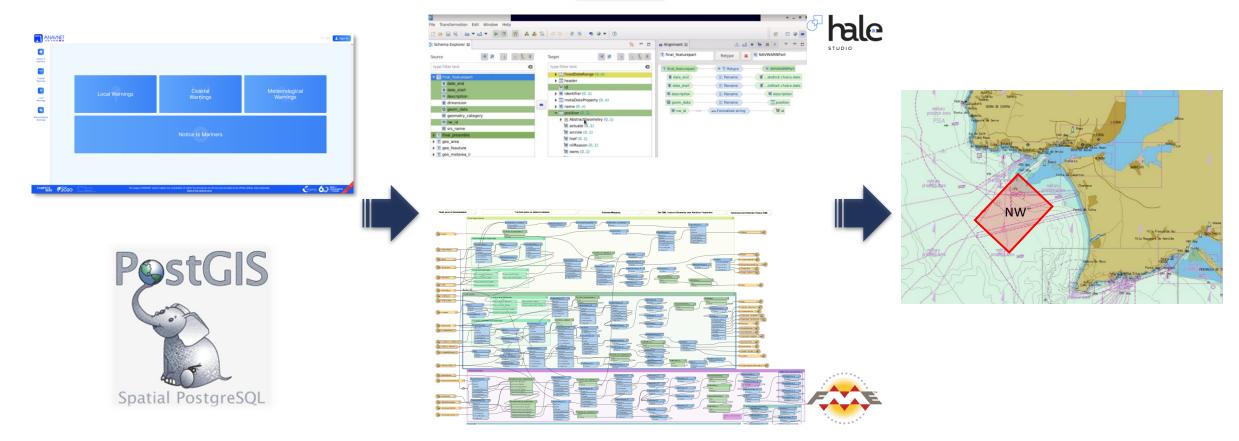
3.1. IHO Strategic Plan – Goal 1

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

International Hydrographic Organization

➡ ANAVNET -> S-124





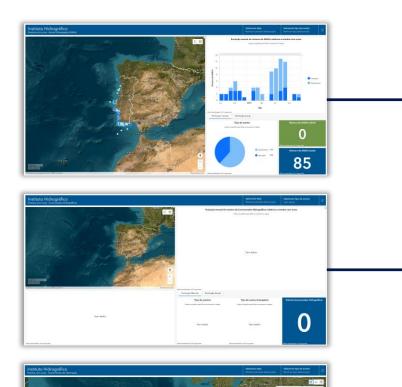


3.1. IHO Strategic Plan – Goal 1

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

International Hydrographic Organization

Orca events on the Portuguese coast







https://arcg.is/0uCePv0





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3.1. IHO Strategic Plan – Goal 1

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

International Hydrographic Organization

Sailing Directions (Pilots) -> WebGIS publication -> Mobile app





Porto de Lisboa CNO 26303 26304 26305 26306 26307 - CENO PT 526303 526304 526305 52630

1. LOCALIZAÇÃO AT"IT N E'AT W	das empresas nacionals e estrangeltas, al se situando normalmenta, altim da Presidência a
INDICATIVO DE CHAMADA	Assembela da Republica, os diversos manaantos e secretarías de estado do governo.
-LISBOA PORT CONTROL-	 Delimitado a 5 e E pelo Rio Tejo e a W pelo Ocuano Atlantico, o Deanto de Indoa apresanea
S. FREQUENCIAS VHF Canol 16 kthematik	uma dinámica multo própria no penorama nacional, fruito das características multifaceadas em termos
Canal 12 Itrabatics	naturals e humanos, Com efetto, estite uma bipola-
A. LOCALIZAÇÃO	 ridade entre al componentes nurali e urbanal que o constituem e lhe conferem urba grande diversi- dade socio-económica. Totendo-se do diterto com
littora, cidade capital de Portugal, localiza-se na marcom diteita do Mo Tello a sua foz, sendo	a mator ocupação demográfica do território rado- nar aproxenta um vesto contanto de actividades
simultanoamente capital de distrito e sede de um concelho com uma átea de 86 km²	
A cittado tem uma população residente de cerca	turbaca nos concarhos imitrofes da grande metro-
de 556 797 habitantes 00011, estando integrada numa zona denominada Grando Lisboa, que ocupa	pole, nesta se assistivido entilo a uma concentração de senitos, numa vertente marcadamente urbana
uma ana superior a 7750 km/, com uma população residente de cerca de 2.1 milhões de persoas, que	 e costropolita. A citade: computibilità aos Mouros em 1167 pelo
na sua grande maioría se desilocare diartamente para	Kol D. Afonso Henriques, que the concedeu foral em-
a capital para os respoctivos empregos. A gona da grande Litiboa, com esta onorme	1179 e sondo capital do nimo desde 1256 tom con- tudo antocodenios bastante mais remotos.
população fiuliuanse, constituá se assim no principal	
	flora e a sua deposição geo-montológica com
náceo do país em materia de trabalho qualificado.	
sentizos superiores o metrado financeiro, emer- gindo como polo da equipamentos o sentiços dile- renciados. E desa roma o local phileigiado de im-	suaves vales e colinas desenvolvondo se sobre um valeo estualito ribeititino, turilo sido factor dechivo na sua ocupação por povos primitivos. Desenvol-



Bali, Indonesia, March 4th to March 8th, 2024

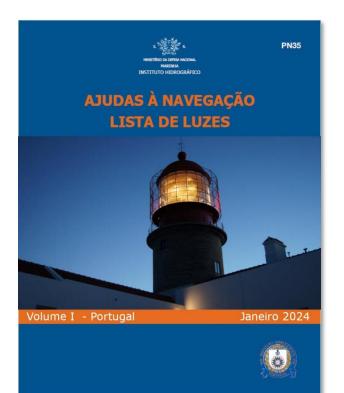


3.1. IHO Strategic Plan – Goal 1

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International Hydrographic Organization

Aids to Navigation -> Digital publication -> Web Feature Service -> OGC API Features



OGC API FEATURES



Aids to Navigation - List of Lights, Buoys and Fog Signals Powered by pygeoapi

The Aids to Navigation feature collection contains updated information regarding maritime visual and sound signalling existing on the coast and in the interior of ports in Portugal.



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https://api-features.hidrografico.pt

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Home		json jsonld
Marine Geospatial Data API to marine geospatial data (ed) data geospatial marine, revegation		Provider Instituto Hidrográfico https://www.hidrografico.pt
Extra Exception motion exception Terms of service https://creativecommons.org/licenses/by/4.0 CC-BY 4.0 license Collections View the collections in this service API Definition Documentation: Swager: UI Baboc OpenAPI Document		Contact point Address Rua das Trina 49 Lisboa, Lisboa 1249-093
		Portugal Email centrodados@hidrografico.et Telephone -351210943.000 Contact URL
Conformance	of this service	https://geomar.hidrografico.pt

hidrográficơ								Co	ntact
Home / Collections / Aids to Navigation / Items								json	jsonld
Aids to Navigation									
+	6	id	int_nr	pos_WGS84	nac_nr	alt_m	desc	rmks	name
-	Ma) wat de Ance-	1	D- 2006.1	41°48.83'N / 8°52.14'W	18.1	8	Coluna com faixas brancas e verdes	Lt 0,5s; Ec 1s/Lt 0,5s; Ec 3s	Molhe
000	RU	2	D- 2008	41°45.06'N / 8°52.41'W	20	100	Cúpula vermelha sobre torre	Lt 0,2s; Ec 1,7s/Lt 0,2s; Ec 7,4s	Monte
\$\$\$	Viano Castelo Darque Via Nova de Anha	3	None	41°41.85'N / 9°5.26'W	21.1	None	Amarela	Lt 2s; Ec 4s/Assinalamento área	Windt A
Warning: Higher limits not recommended! Limit: 10 (default) \$	Leaflet © OpenStreetMap contributors	4	None	41°41.86'N / 9°3.62'W	21.2	None	Amarela	Lt 2s; Ec 4s/Assinalamento área	Windt AB



International

Hydrographic Organization

3. Current developments

3.2. IHO Strategic Plan – Goal 2

Increasing the use of hydrographic data for the benefit of society

High-value datasets

• Alignment with:

EU Directive 2019/1024 – Open data and the re-use of public sector information (20JUN2019)

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L1024

EU Implementing Regulation 2023/138 – laying down a list of specific high-value datasets and the arrangements for their publication and re-use (21DEC2022)

https://eur-lex.europa.eu/eli/reg_impl/2023/138

- The datasets shall be made available for re-use:
 - ✓ Under the conditions of the Creative Commons BY 4.0 licence or any equivalent or less restrictive open licence;
 - In a publicly documented, Union or internationally recognised open, machine-readable format;
 - Through application programming interfaces (API) and bulk download;
 - ✓ In their most **up-to-date** version.

Geospatial

Earth observation and environment

Mobility



3.2. IHO Strategic Plan – Goal 2

Increasing the use of hydrographic data for the benefit of society

International Hydrographic Organization

Web Map Service (WMS) Electronic Navigational Chart (ENC) Server

- SevenCs WMS ChartServer
- Provide users a ENC basemap
- Support marine and blue economy activities



• ENC Inland

Douro river

https://www.hidrografico.pt/vn.douro

Guadiana river

https://www.hidrografico.pt/cart.guadiana

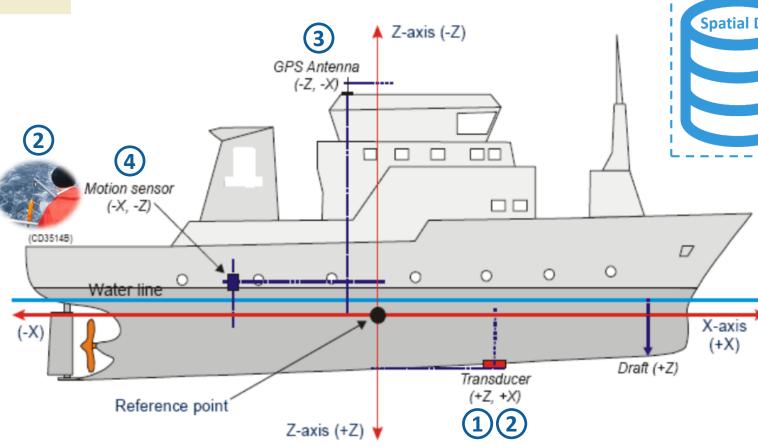


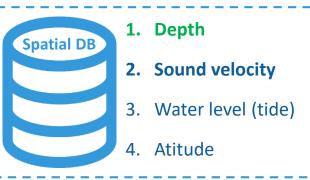
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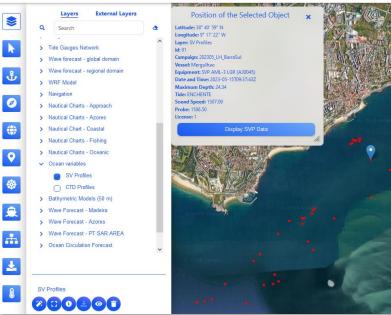
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Data re-usability





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3.3. IHO Strategic Plan – Goal 3

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

International Hydrographic Organization

International initiatives

THE NIPPON FOUNDATION-GEBCO



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Blue-Cloud2026

A federated European FAIR and Open Research Ecosystem for oceans, seas, coastal and inland waters

DITTO Digital Twins of the OceanDecade Programme



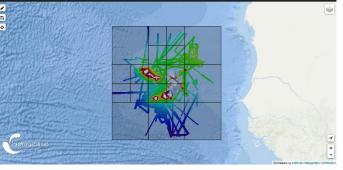
100 % of the national maritime spaces mapped by 2030

https://gridmar.hidrografico.pt



RESOLUTION(S)

Depth 50m-250m – Res. 32m Depth 250m-1000m – Res. 64m Depth 1000m-2000m – Res. 128m Depth 2000m-4000m – Res. 256m Depth +4000m – Res. 512m



Brieve Subr

https://gridmarcv.hidrografico.pt

of Ocean Science



3.3. IHO Strategic Plan – Goal 3

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

International Hydrographic Organization

National Oceanographic Data Centre











unesco

IODE Quality Management Framework for National Oceanographic Data Centres and

Associate Data Units

IOC Manuals and Guides 67

UNESCO



4. Challenges and opportunities

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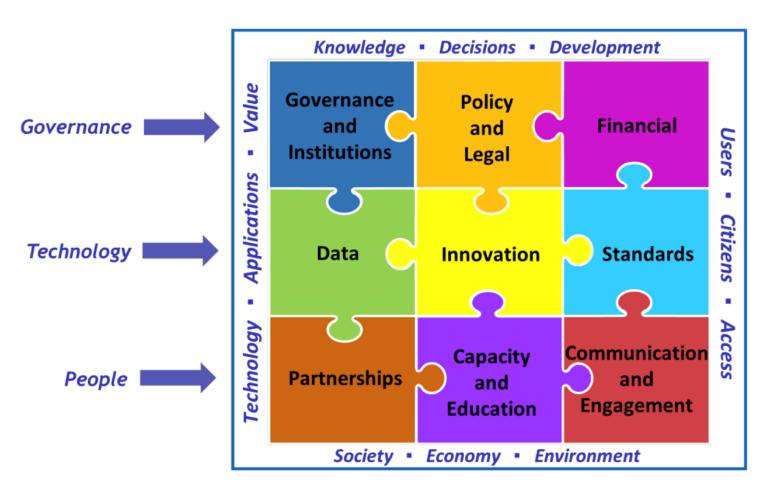
- Governance:
 - Data strategy;
 - Data policy.

➡ Technology:

- Data integrity;
- Data structure.

➡ People:

- Resources (IT and DB);
- Awareness (metadata, policy)





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