



17a Reunión de la CHAtSO
agenda item 17-06G

Experiencias y propuestas de los Estados Miembros, Estados y Organizaciones Observadores e Invitados de la CHAtSO

Instituto Hidrográfico, Portugal

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14 Março 2023



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International
Hydrographic
Organization

AGENDA

- The IHPT
- Main programs
- Capacity Building
- Challenges
- Issues



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INSTITUTO HIDROGRÁFICO LEGAL FRAMEWORK

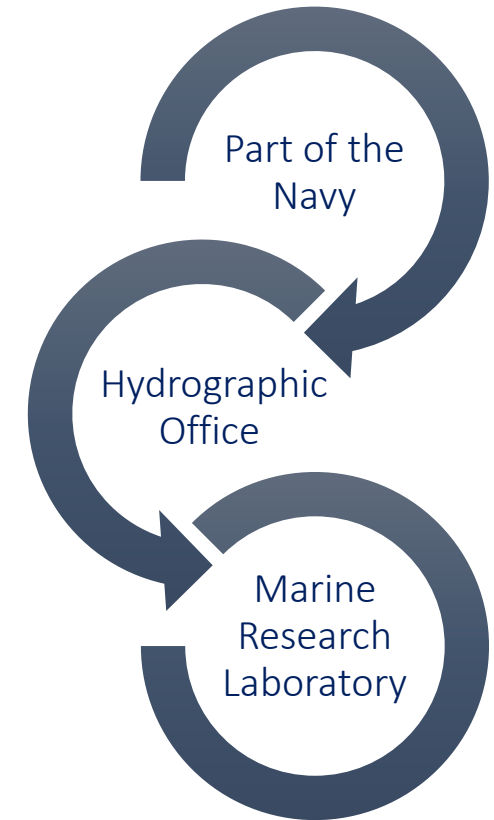
International
Hydrographic
Organization



Portuguese Navy organization with administrative and financial autonomy

- National Hydrographic Office
- National Research Lab (I&D)

- Minister of Defence
in articulation with the
- Minister of the Sea and Economics
- Minister of Science, Technology and Higher Education

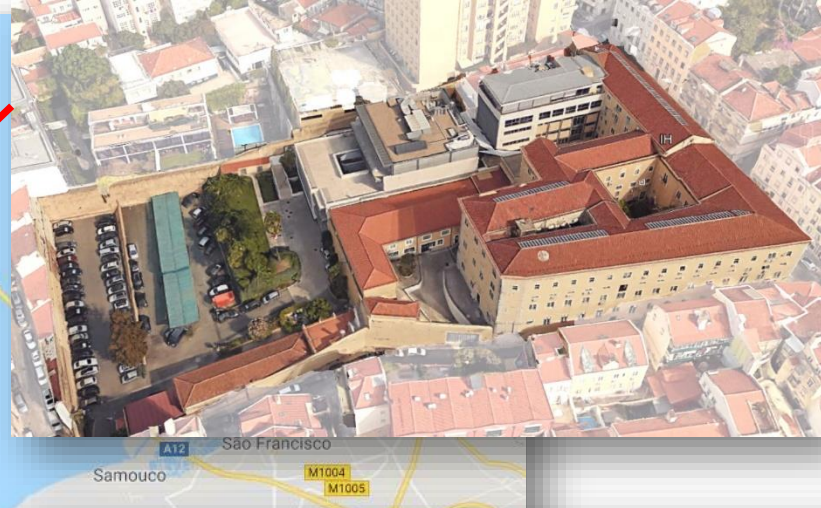
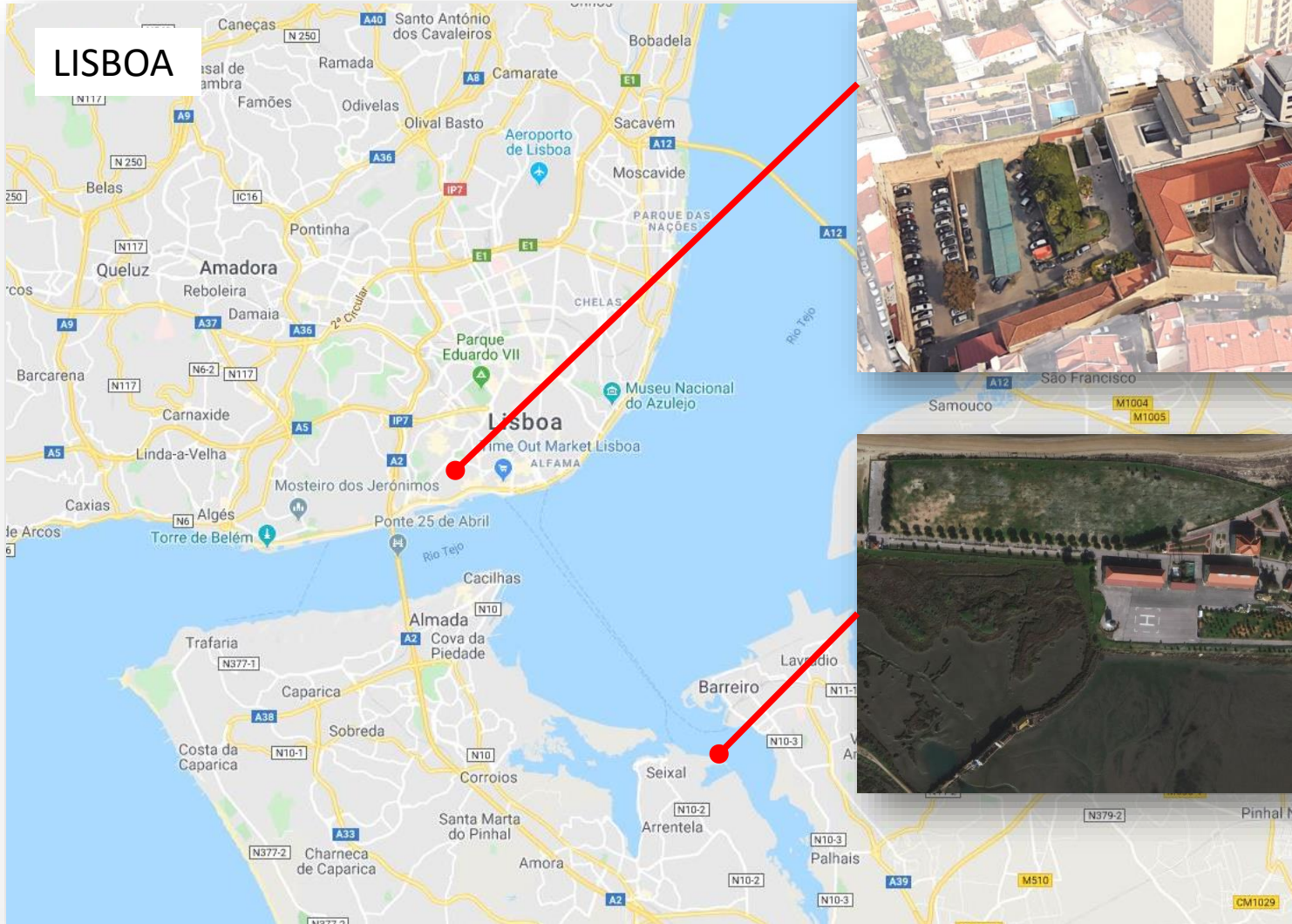




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INSTITUTO HIDROGRÁFICO FACILITIES

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Headquarters



Hydrographic Base



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IHPT MAIN ACTIVITIES

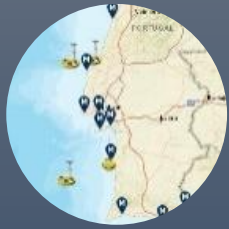
International Hydrographic Organization

Activities related to marine science:

- Hydrographic service;
- Research and Development;
- Protection of the marine environment;
- Environmental support to naval operations.



Safety of Navigation



Oceanography



Chemistry



Geology



Hidrography

Data Management

Ocean Mapping

Hydrographic Surveys

Hydrographic and Nautical Cartography

Seafloor characterization, Seismic surveys & ROV

Ocean Observation

Observation & Environmental Monitoring

Marine Chemistry and Pollution

Ocean Forecasting

GEOMETOC maritime operations support

Support to mariners

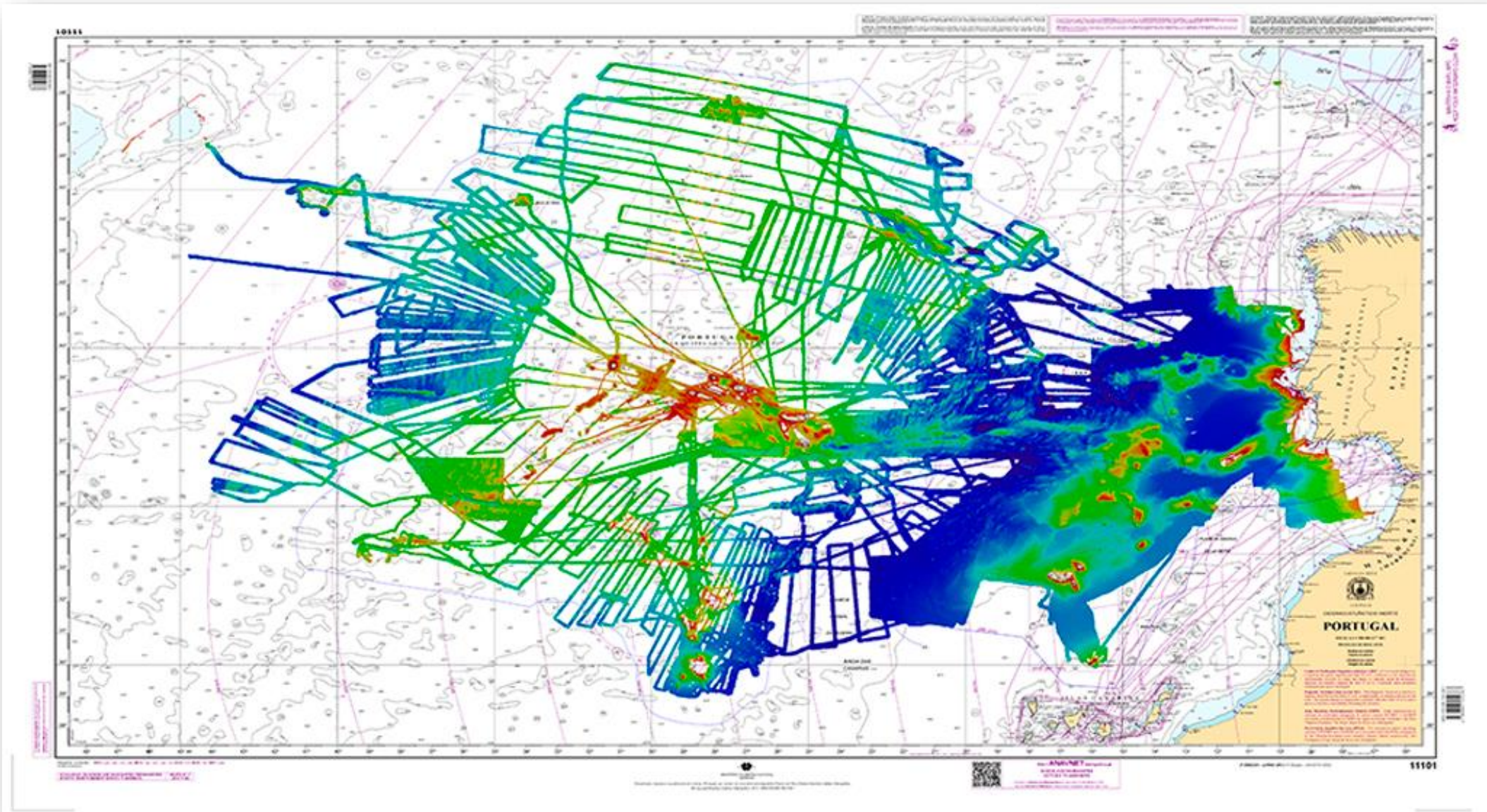


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SEAMAP 2030

High-resolution Mapping of the Portuguese Sea

International
Hydrographic
Organization





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SEAMAP 2030

High-resolution Mapping of the Portuguese Sea

International Hydrographic Organization

- SEAMAP 2030 in line with SEABED 2030:

<https://www.hidrografico.pt/iprojeto/16>

- Surveying current status and goals:

<https://storymaps.arcgis.com/stories/334290c8d2b345c78ac7c3f5e0fcb5e2>

Pedido / Request - Grid:

Grade / Grid: 36

Name / Name: Surname / Surname:

Email:

Country / Country: Portugal City / city: Use / Use: Governo

Aceitação da Política de Privacidade / Agree with Privacy Policy
 O utilizador aceita os Termos, condições e Política de privacidade / User accept the Terms, conditions and Privacy Policy

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

Download data: <https://gridmar.Hidrografico.pt>

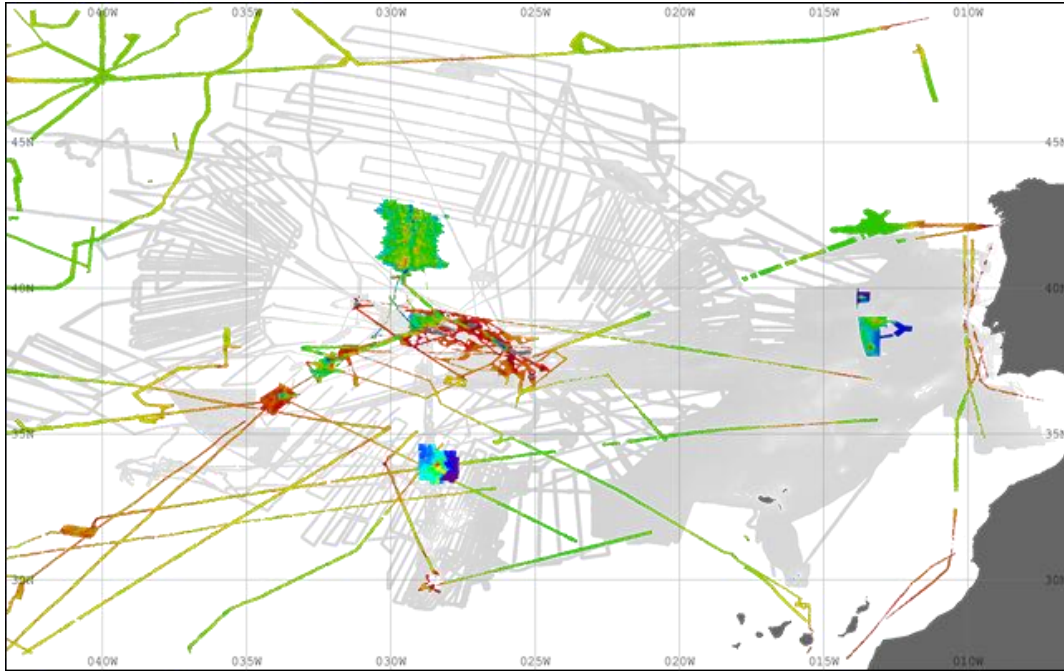


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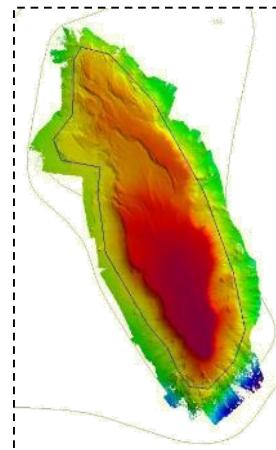
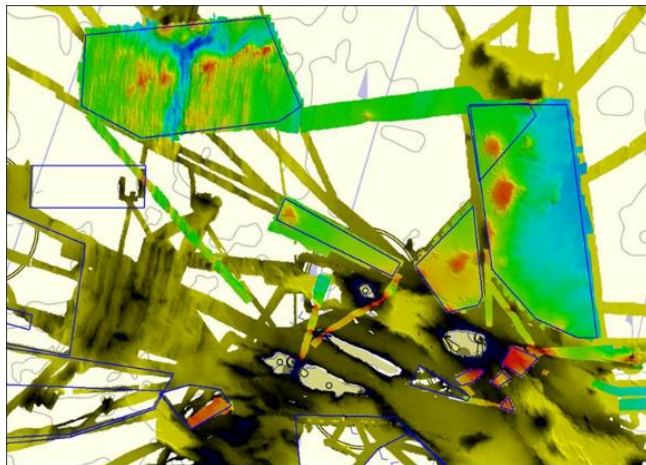
SURVEYS

Compilation of third parties' sources contributions of bathymetric information (scientific cruises multibeam coverage), namely by NOAA, BSH, NIOZ, SHOM and IFREMER

International Hydrographic Organization

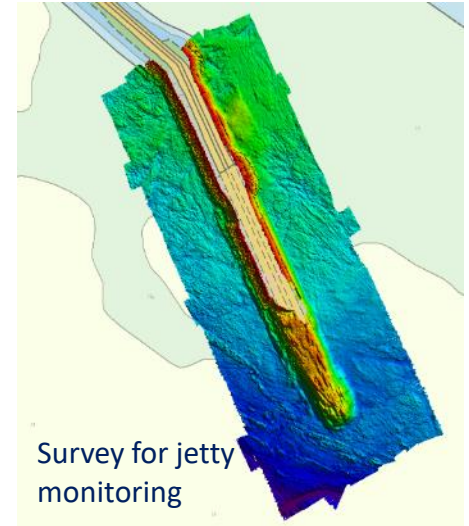
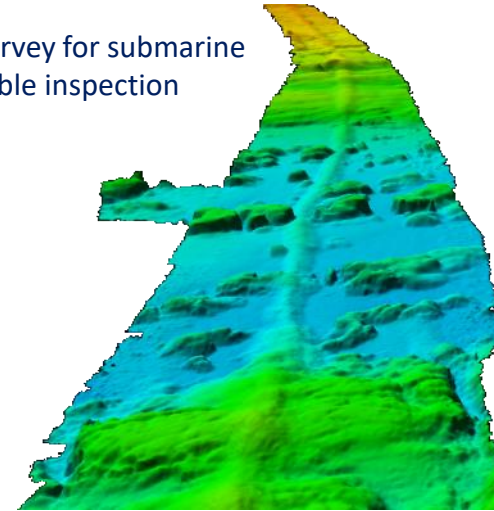


Azores Islands

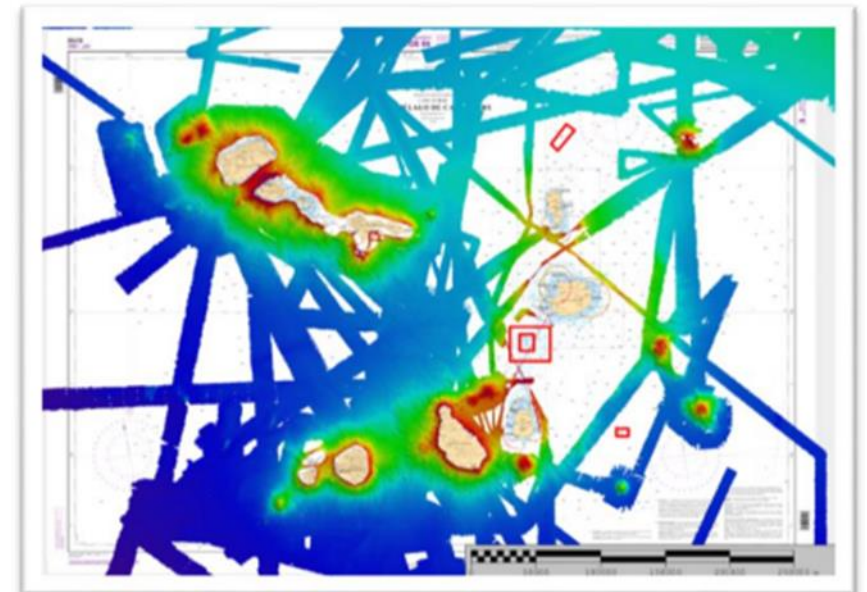


Josephine Seamount

Survey for submarine cable inspection



Survey for jetty monitoring

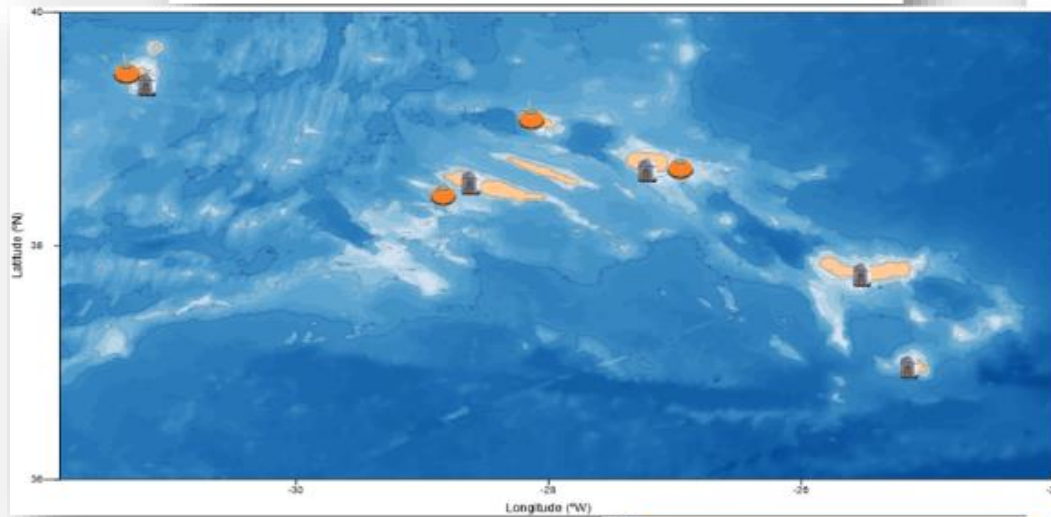







Portuguese African speaking countries (Cabo verde)

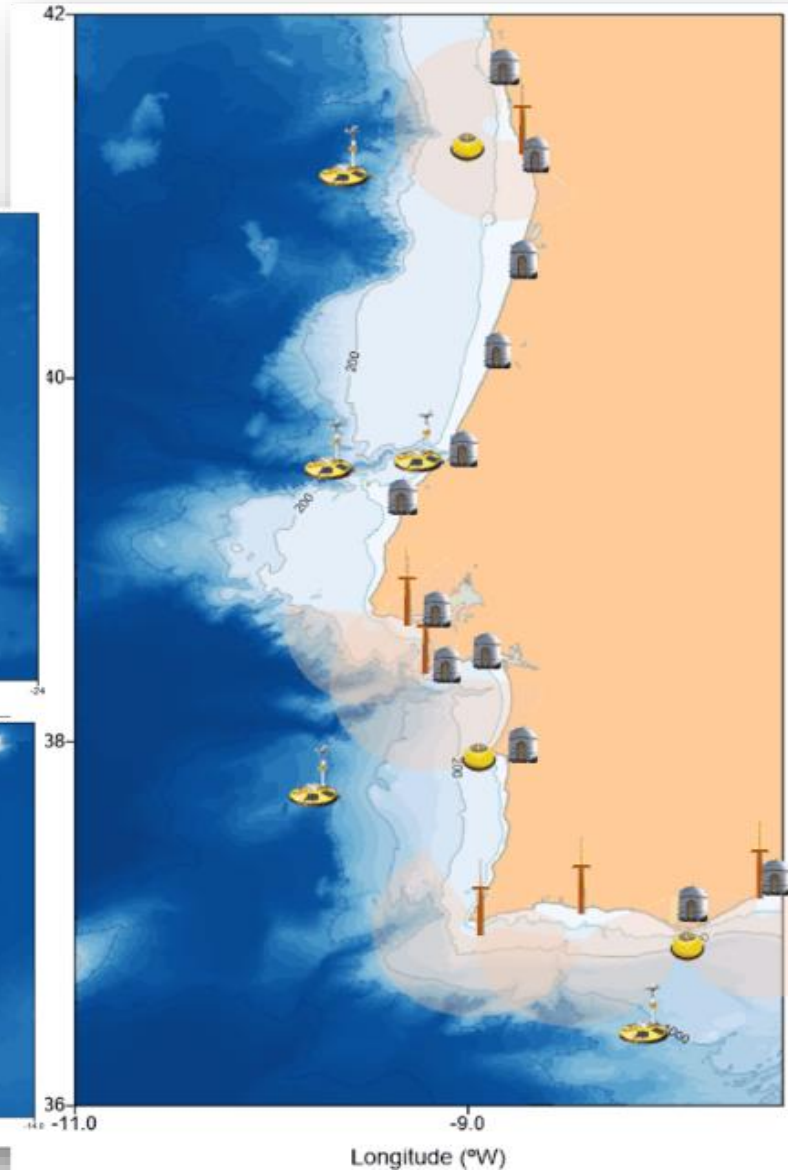
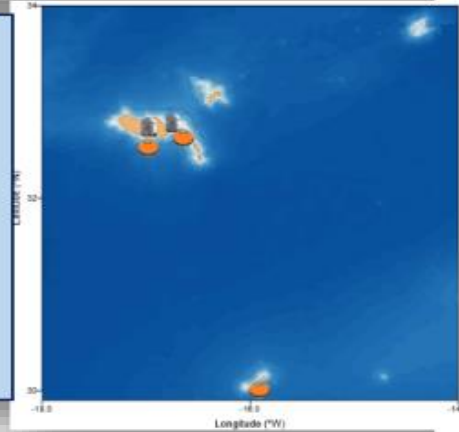


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OBSERVATION & ENVIRONMENTAL MONITORING



-  Tide Gauges
-  Wave buoys
-  Wave buoys managed by IH
-  Multiparametric buoys
-  HF radars (currents)





- Nautical paper Charts (NC) and Electronic Navigational Charts (ENC).
- NC production in the areas of Portuguese responsibility, both national and international.
- NC and ENC, including some charts of the International Portfolio (INT), for Portuguese speaking African countries' areas of interest.

Portuguese Folio Regions G and H

	Portugal	Cape Verde	Guiné-Bissau	São Tomé e Príncipe	Angola	Moçambique	
ENC	78	22 produced + 9 schemed					100
NC/INT	81/35	120/13 + 8 schemed					201/48



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- IHO released an **English/Portuguese version** of the 6th Edition of the **special publication S-44 'IHO Standards for Hydrographic Surveys'**:

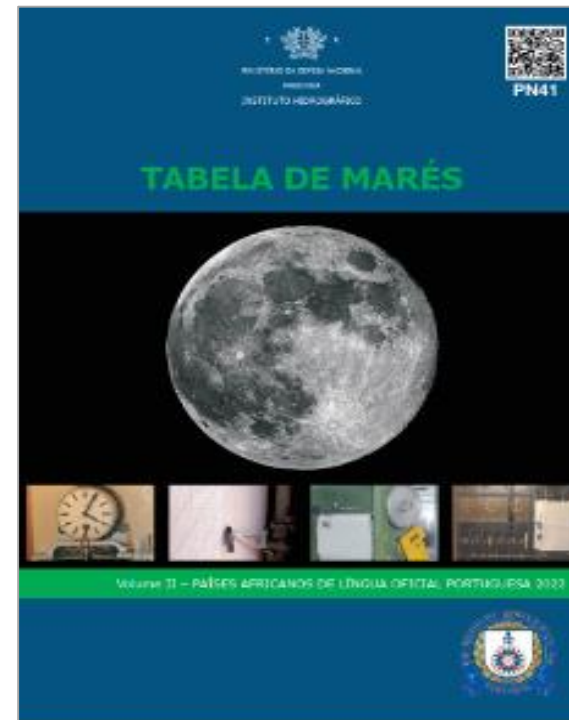
https://iho.int/uploads/user/pubs/standards/s-44/20211216_S-44_Ed6_2.0.1_Portugues_v2F.pdf.

- Charts and Nautical Publications Catalogue:

<https://loja.hidrografico.pt/?product=catalogo-de-cartas-e-publicacoes-nauticas-digital>

(free download)

- Pilots (Portuguese Coast)
- Tide Tables (Portugal and Africa)
- IHO C55 and P5 update



PUBLICATIONS



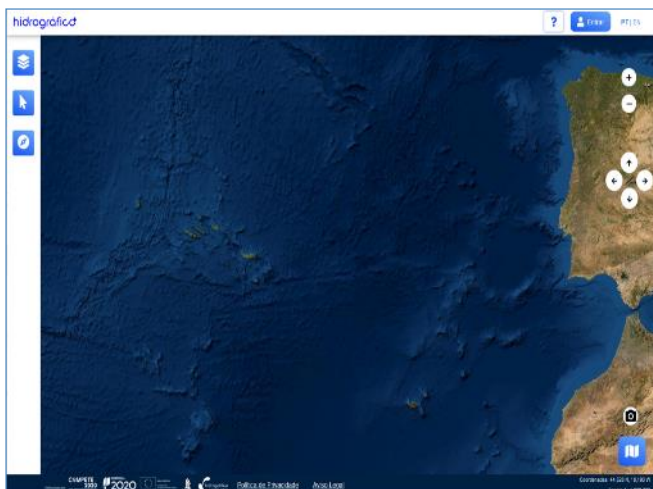


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(MARITIME SPECIAL DATA INFRASTRUCTURE) MSDI

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hidrográfico

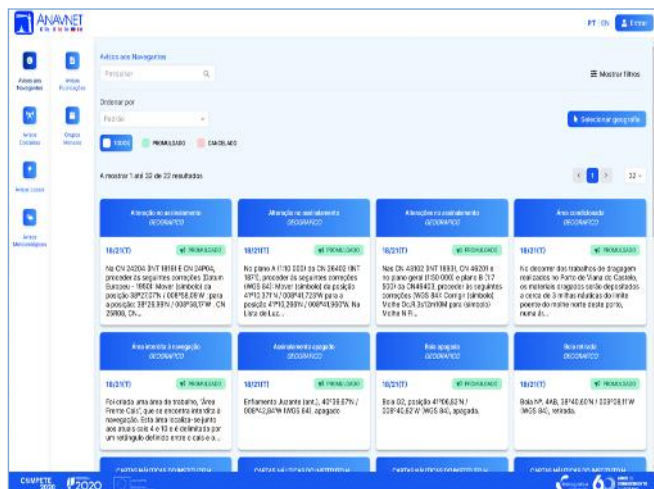


GeoPortal H+

Download
OGC Services
API



<https://geomar.hidrografico.pt>



AnavNet

Notices to Mariners
Navigational Warnings
Weather Warnings



<https://geoanavnet.hidrografico.pt>



App H+

Sea State / Wind / Tide
Seawater Temperature
AnavNet



Download on the
App Store

Available on the
Google Play



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- IHO Capacity Building working plan – Technical visits.
- Protocols established with Portuguese speaking African countries.
- Hydrographers from others countries onboard Portuguese vessels.
- Surveys and cartographic production.
- School of Hydrography and Oceanography <https://www.hidrografico.pt/op/23>



CAT B Hydrography Course

Started September 2022



CAT A Hydrography Course

Will start September 2023

INTERNATIONAL
FEDERATION OF
SURVEYORS



INTERNATIONAL
HYDROGRAPHIC
ORGANIZATION



INTERNATIONAL
CARTOGRAPHIC
ASSOCIATION



International recognition since 1983

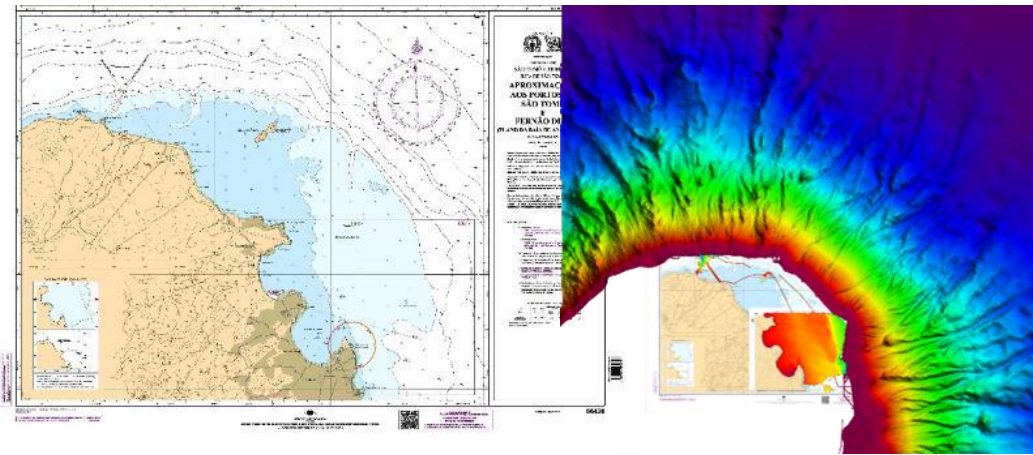


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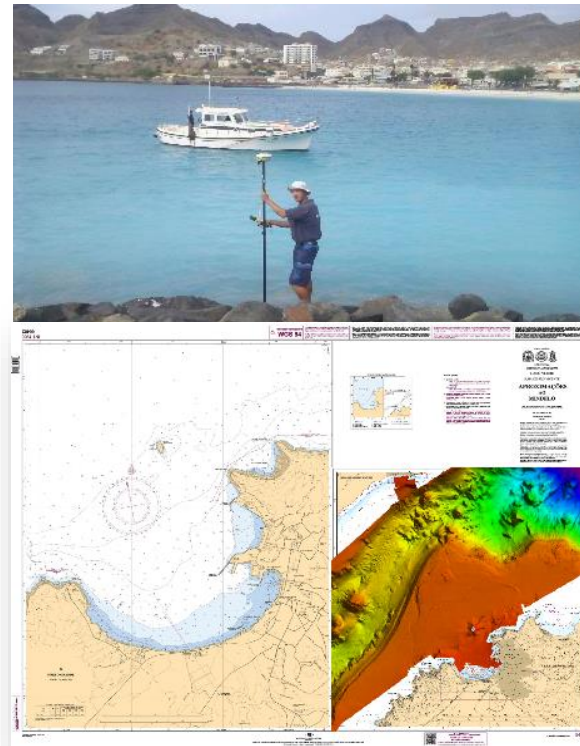
CAPACITY BUILDING INT Region G (EAtHC)

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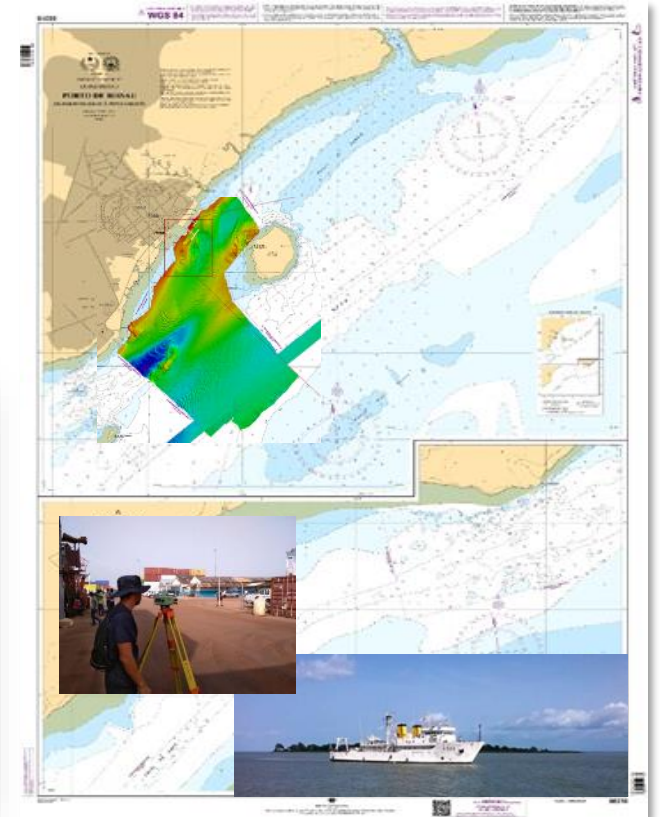
- Protocols established with Portuguese speaking African countries.
- Hydrographers from these countries onboard Portuguese vessels.
- Surveys and cartographic production.



São Tomé e Príncipe



Cabo Verde



Guiné-Bissau

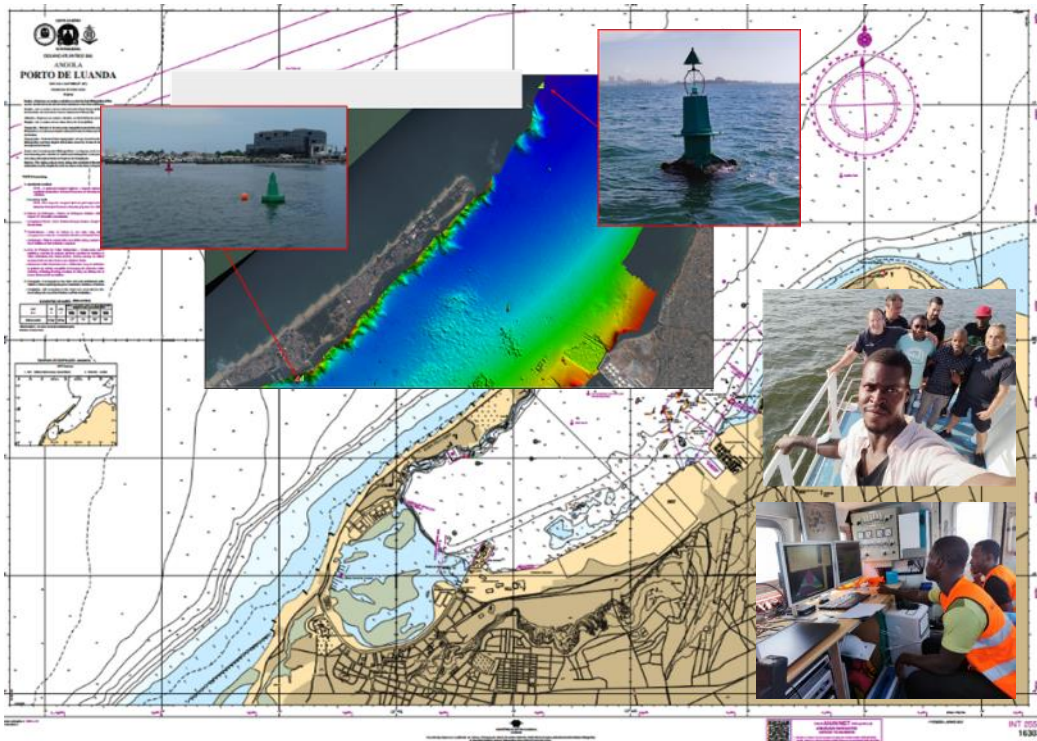


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CAPACITY BUILDING INT Region H (SAIHC)

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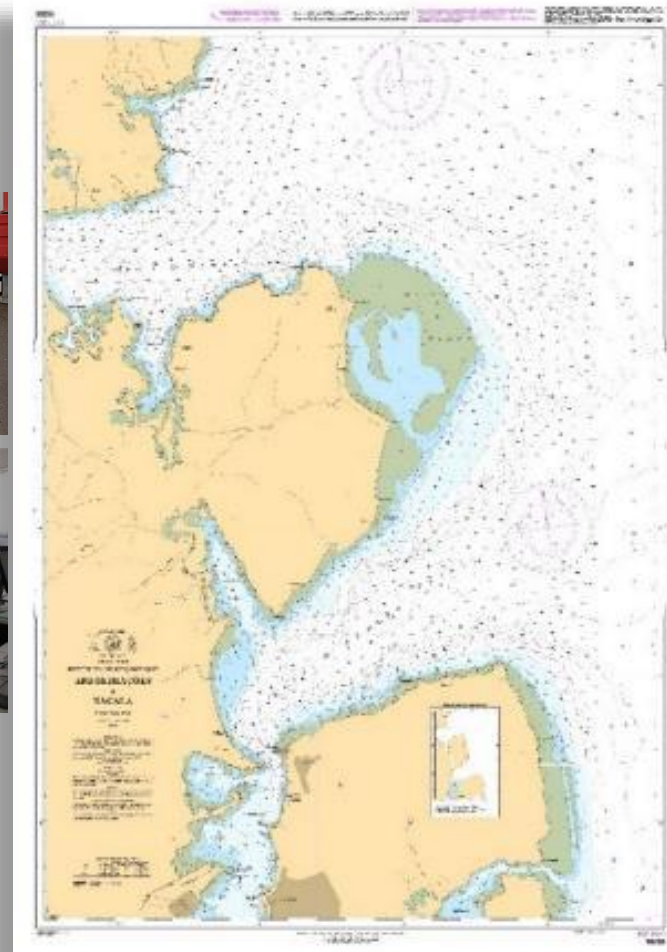
- **Protocols established with Portuguese speaking African countries**
- **Hydrographers from others countries onboard Portuguese vessels**
- **Surveys and cartographic production**



Angola



Moçambique





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RAPID REACTION HYDROGRAPHIC TEAM

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Shipwrecks and object detection



Madeira Island extreme floods & landslides (2010)



Collapsed bridge (2001)



Azores – Hurricane Lorenzo (2019)



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INICIATIVES

International Hydrographic Organization

- United Nation Conference, June 2022;
- 7th Hydrographic Engineering Conference (co-organization 7th IHPT / 2nd with Spain – IHM);
- 1st Hydrographic Conference of the the African Portuguese-Speaking Countries, July 2022;
- 80th Multibeam Sonar Training Course, November 2022.





OBSERVE

- MASSIFICATION OF OBSERVATIONS
- NEW SYSTEMS AND SENSORS
- BIG DATA – CLOUD

MODEL

- BIG DATA – CLOUD PROCESSING
- VIRTUAL AND AUGMENTED REALITY
- OCEAN DIGITAL TWIN

FORECASTING

- HIGH RESOLUTION
- READINESS AND HIGH FREQUENCY
- ACCESSIBILITY





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• **Programs/Projects for 2021-2030, aligned with:**

- IHO Strategic Plan for 2021-2026
- United Nations Decade of Ocean Science for Sustainable Development (2021-2030)
- SEABED 2030 programme (global knowledge of ocean morphology):



- **Mapping** of the Portuguese sea (full coverage) - **SEAMAP 2030**.
- Implementation of the S-100 standards - internal plans for the transition process and production of S-101 ENC's as a first step.
- Support for **capacity building** in marine sciences and techniques and updating nautical cartography in Portuguese Speaking African Countries

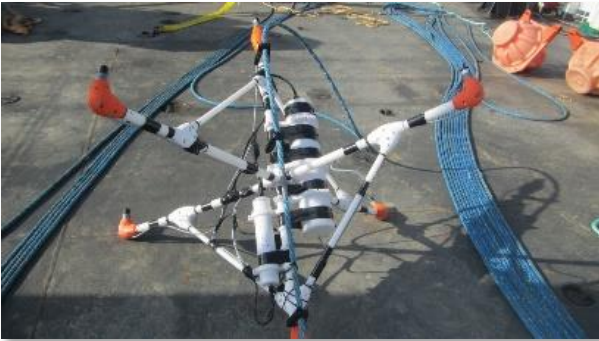


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CHALLENGES

Autonomous Vehicles And New Sensors

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- **Data sharing among several data holders!**
 - Access and sharing data of the scientific cruises made in areas of some local countries it is difficult due to National Authorities authorizations lack of response.
- **Planning surveys in Portuguese-speaking African countries:**
 - Lack of financing, required to support its realization.
 - Logistics and transportation are still the primary concern for any partnership or support actions.
- **S-100 implementation namely for non ENC products and services;**
 - Timetable, data and need specialized human resources.
- **Full Operational Capability of New Technologies:**
 - Take full advantage of new technologies.
 - Need of specialized human resources.

**GRACIAS
OBRIGADO**



Marinha

