



# 24<sup>th</sup> Meeting of the Meso American & Caribbean Sea Hydrographic Commission

## National Report by France (Shom)



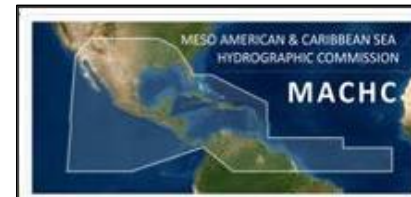
[MACHC Member State]

MACHC24, 12 – 15 December 2023



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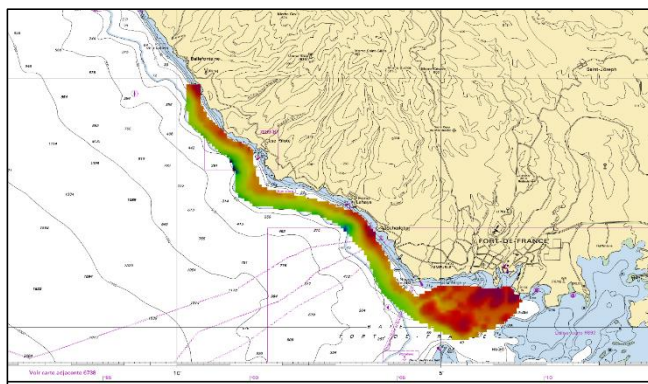
# TOP ACHIEVEMENT DURING THE YEAR



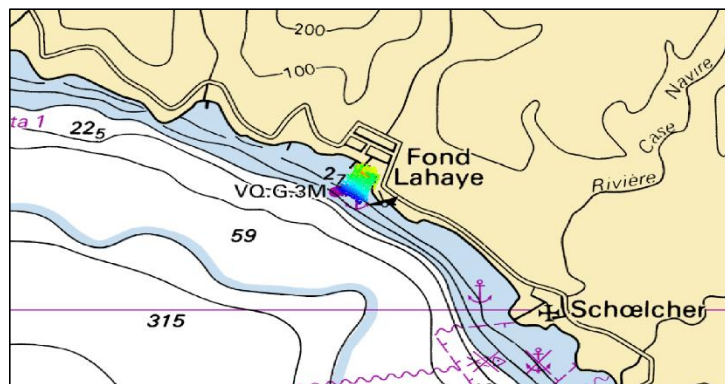
International Hydrographic Organization

## Hydro-oceanographic surveys

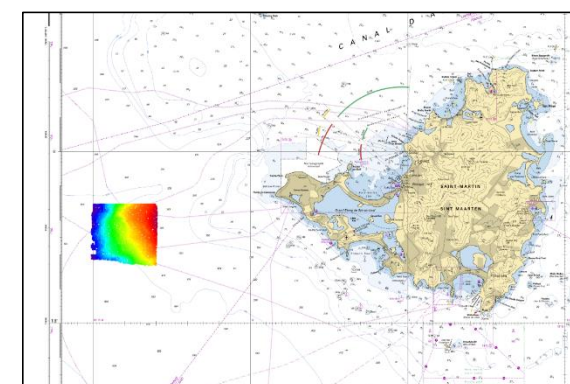
- Shom received five third parties surveys covering Martinique, Saint-Martin harbours and French Guyana rivers.



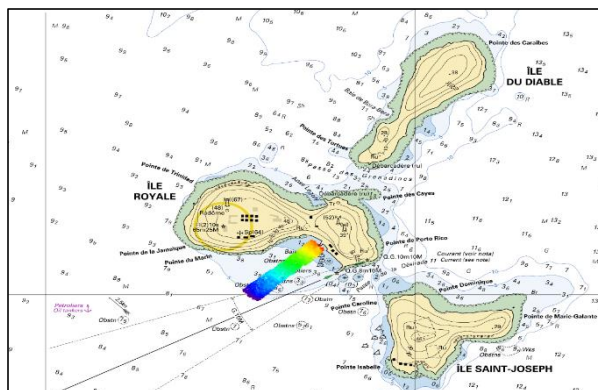
Survey coverage in Martinique (2014. RTE)



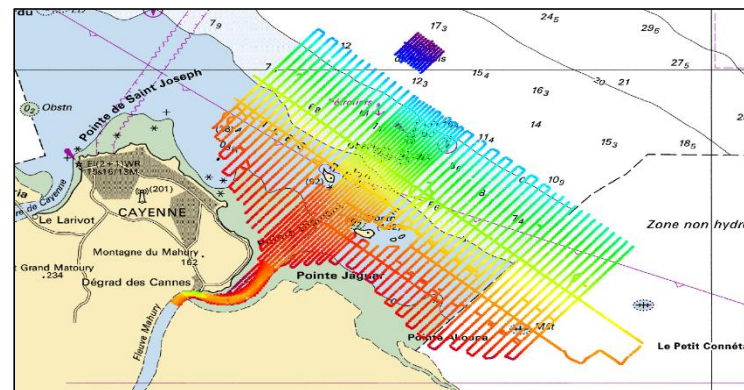
Survey coverage in Martinique (2020)



Survey coverage in Saint Martin (2022)



Survey coverage in French Guyana (2022)

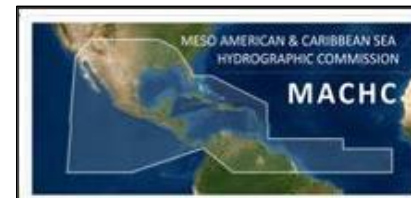


Survey coverage in French Guyana (2022)



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# TOP ACHIEVEMENT DURING THE YEAR



International  
Hydrographic  
Organization

## Charting

- ENC
  - 3 new cells produced ( 2 in French Antilles -> Guadeloupe and 1 in French Guyana)
  - 55 FR ENCs available in Region B (schema is now completed)
- INT Charts
  - No new edition
  - FR INT schema is complete for Region B
- Nat CHARTS
  - 4 new editions (*FR6892, FR7041, FR7337 & FR7381*)
  - 3 charts are planned to be issued in 2023/2024 (*FR6738, FR7482 & FR7485*)

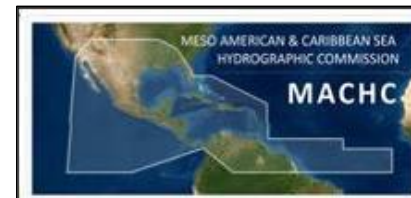
## MSI

- No change (no NAVTEX station in French overseas territories, MSI warnings are broadcast through SafetyNet network)



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## MSDI

- [data.shom.fr](https://data.shom.fr)

### Latest evolutions:

- New layer
  - Sovereignty or jurisdiction maritime spaces (surfaces)
- Updated layers
  - Wrecks and obstructions
  - Aids to Navigation (AtoN)
  - Bathymetric measurements
  - Coastal altimetry (Litto3D)
  - Maritime altimetric references
  - Maritime areas
  - Vertical references converter
  - Tidal table calculations
  - On demand tidal table calculation





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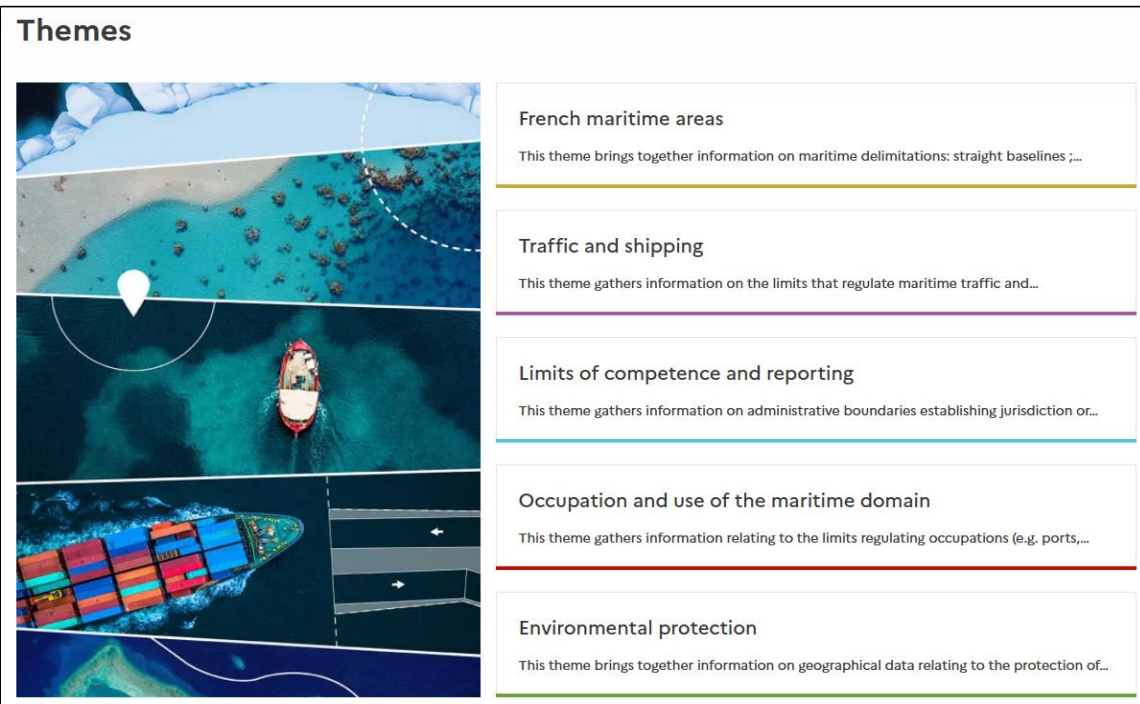
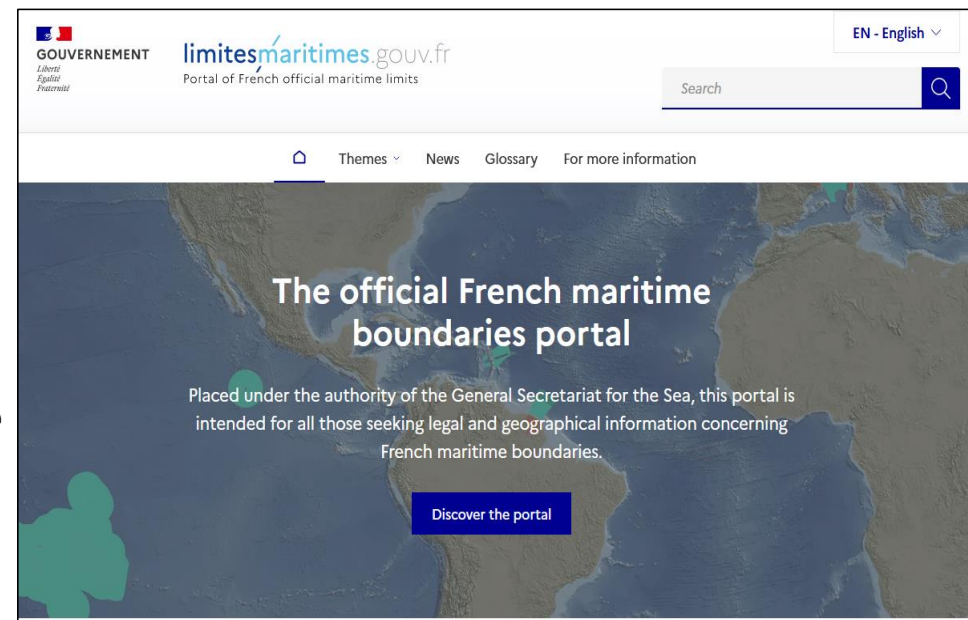
# TOP ACHIEVEMENT DURING THE YEAR

International Hydrographic Organization

## MSDI

- French national portal for maritime limits ([maritimelimits.gouv.fr](https://maritimelimits.gouv.fr))

*consultation and dissemination of the official elements used to delimit maritime areas under the sovereignty or jurisdiction of the French Republic, in particular legal references and digital data*



A new version of this portal was released in February 2023. This new version includes new ergonomics and information is now organized into 4 themes:

- French maritime areas;
- Traffic and shipping;
- Limits of competence and reporting;
- Occupation and use of the maritime domain.



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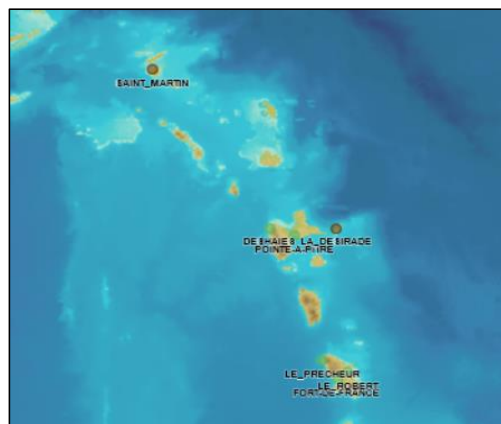
# TOP ACHIEVEMENT DURING THE YEAR



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## Evolution of tidal services

There are 14 French permanent tide gauges located in the region : Guadeloupe (3), Martinique (3), Saint-Martin (1), French Guyana (7)



4 new tide gauges in French Guyana : Pointe des roches, Pariacabo, Ile Royale anse Legoff, Saint-Laurent du Maroni.

From 2021 to 2023, the RONIM tide gauge network has been **renovated**: data loggers, transmission equipment and supervision software have been renewed.

The expected results are: better reliability, improved transmission rates and reduced maintenance needs.

The tide gauges in the MACHC region have all been updated.



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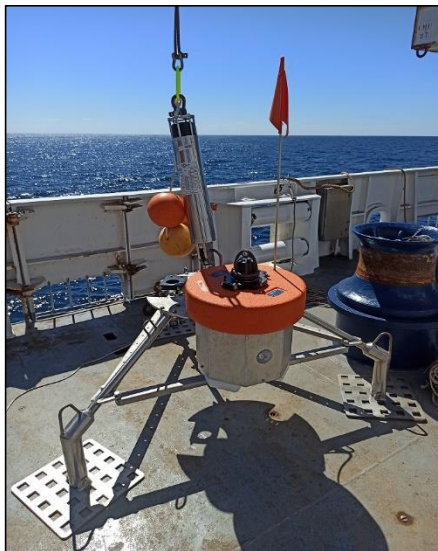
# NEW TECHNOLOGIES AND EQUIPMENT



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## New frame mooring

Involved in ecological issue, Shom developed a frame mooring called CATRINE with no loss of deadweight at the sea bottom. Usable until 150 meters depth, the frame mooring includes an acoustic release connected to a 200 meters Dynema rope stored in an aluminium canister during the deployment.

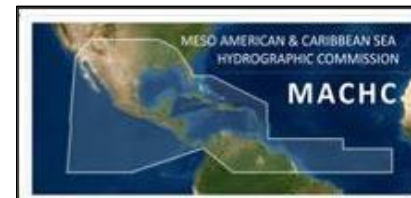


At the end of the deployment (after weeks or months at the bottom of the sea), the acoustic release is activated. The orange buoyancy goes up to the surface unwinding the rope stored in the canister. Arrived at the sea surface, operators need to recover the orange buoyancy and the Dynema rope. Using an electric winch on board, operators wire the 200 meters rope to recover the frame mooring and the instrumentation (ADCP and/or autonomous probe).



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# TOP CHALLENGES AND /OR OBSTRUCTIONS



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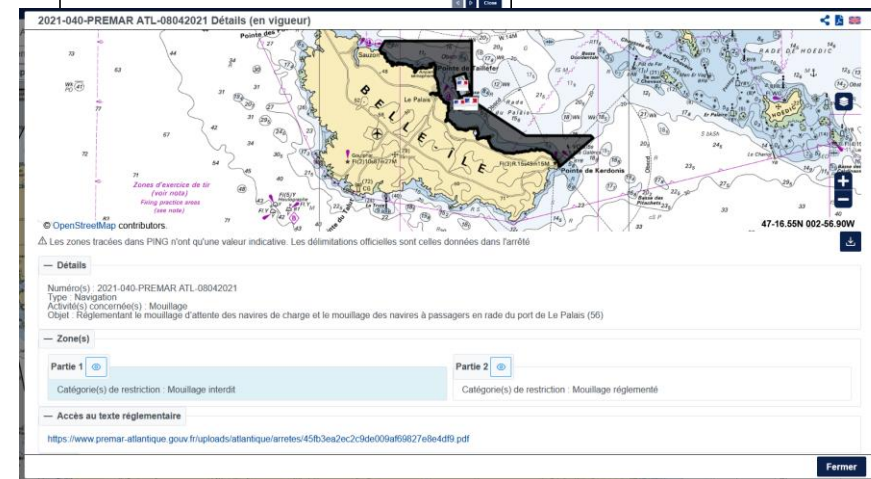
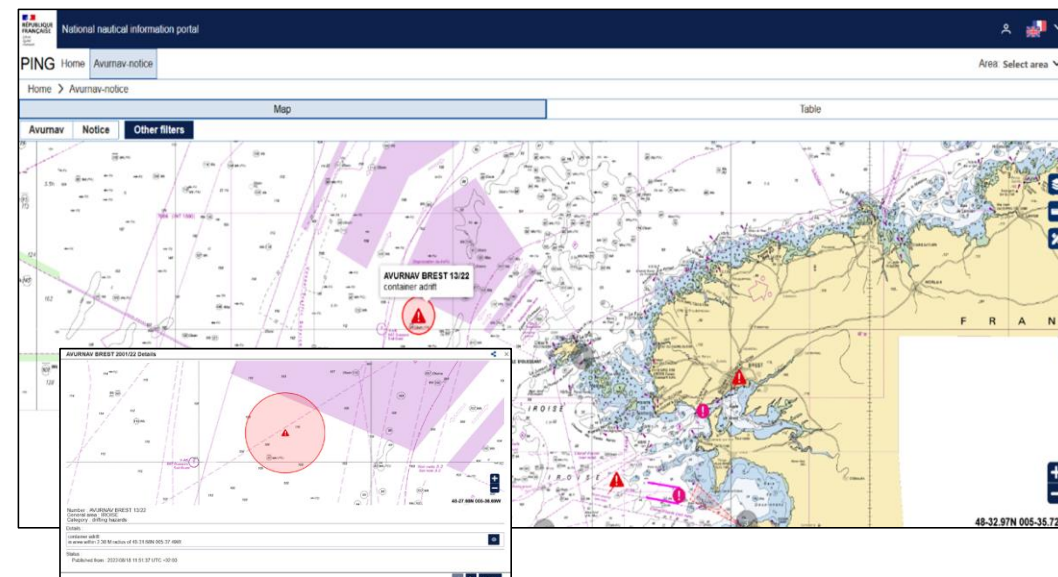
## S-124 – French national nautical information platform PING

Shared information system for the transmission, formatting, digitization and posting of nautical information on the Internet

This platform is structured around 3 modules:

- ❖ production and diffusion of navigational warnings,
- ❖ transmission of source information by maritime services and users in order to contribute to nautical information,
- ❖ production and diffusion of maritime regulations in a spatialized form.

Production and dissemination of navigational warnings in compliance with S-124 (as soon as the specification standard is operational) with compatibility with the current NAVTEX and EGC systems







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# TOP CHALLENGES AND /OR OBSTRUCTIONS



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## Crowdsourced bathymetry - CSB

- 22 November 2022, Publication of an instruction of the French Prime Minister on crowdsourced bathymetry
- Data from crowdsourced bathymetry in French waters are transmitted as a priority to the Shom, or alternatively to one of the following trusted third parties :
  - the European Marine Observation and Data Network EMODnet, via its "Data Ingeneering" portal EMODnet, via its Data Ingestion Portal (<https://submission.emodnetingestion.eu/>);
  - the IHO Data Centre for Digital Bathymetry (DCDB - <https://www.ngdc.noaa.gov/iho/>).
- CSB data : in accordance of the IHO B-12 publication, collected with standard navigation instruments (No MBES or other scientific equipment) during routine manoeuvres.
- CSB data in FR waters to be transmitted to Shom by the trusted nodes before dissemination. Only the validated data sets transmitted by Shom can be distributed through EMODnet Bathymetry and DCDB.



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# TOP CHALLENGES AND /OR OBSTRUCTIONS

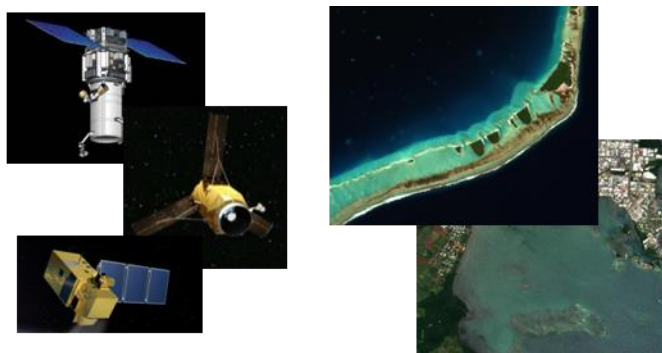
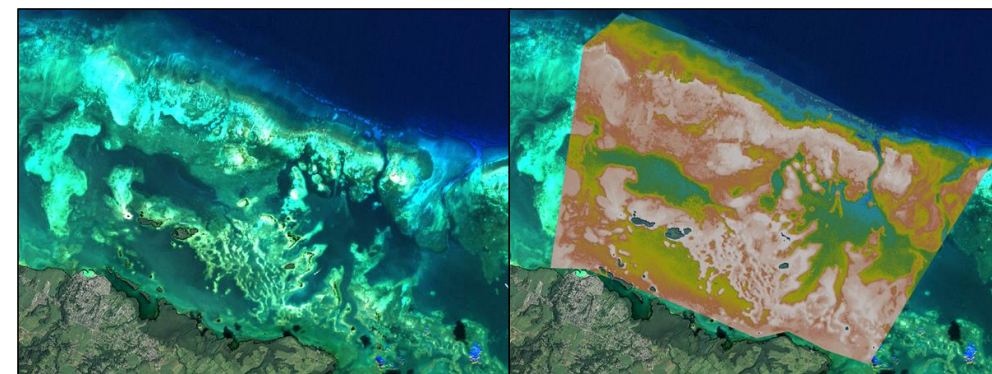


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## Satellite-derived bathymetry - SDB

### Development of new SDB modeling chain > Bathysat Project

- As efficient and automated as possible
- Producing SDB without any in-situ bathymetric data
- Being able to estimate the reliability of the products
- Being in control of the overall system



Orthorectified satellite images  
(multispectral sensor)



Bathy product

Map of uncertainties

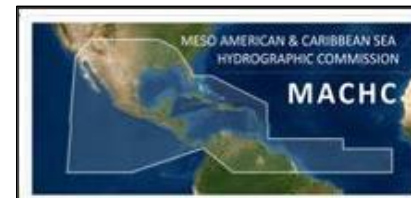
Metadata





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# TOP CHALLENGES AND /OR OBSTRUCTIONS



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## Satellite-derived bathymetry - SDB

### Progress of the Bathysat Project

- 2020: research part completed
- September 2022: development part completed
  - Acquisition of a prototype of the future production line with the following operating concepts:
    - ❖ to develop, on a case-by-case basis, charting products in remote areas (in the absence of conventional hydrographic surveys)
    - ❖ to generate seabed morphology products (DTMs) useful in particular for hydrodynamic modelling
    - ❖ to have a tool for rapid recognition of the coastal environment: estimation of bathymetric characteristics, turbidity, coastline
    - ❖ to detect, on a case-by-case basis, possible morphological changes of the seabed in the coastal strip (high revisit rates) in order to prioritise hydrographic surveys (decision support tool)

### Projections

- 2024 : Performing of the industrialization part
- End of 2024: fully operational solution



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# RAPPORT D'ACTIVITÉS DE L'IENWG *IENWG ACTIVITIES REPORT*



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*The IENWG brings to life the MoU signed in 2012 by the EC and the IHO which ensures a **liaison between the 2 sides in areas of common interest***

*It is composed of representatives from RHCs*

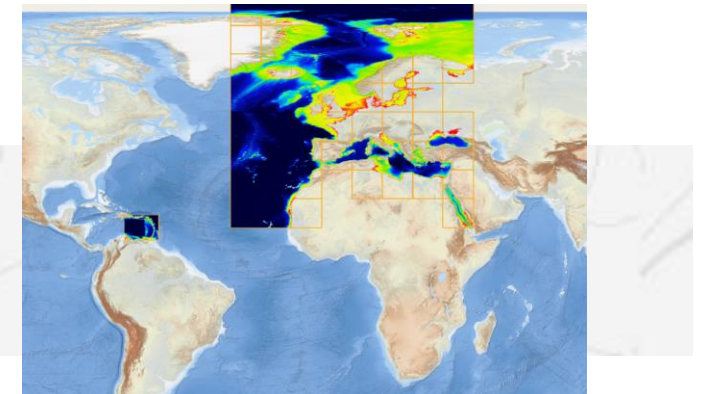
*France represents the MACHC and chairs the WG*

*One of the main achievement in support to GEBCO: EMODnet  
Bathymetry with 15 European HOs involved*



**BATHYMETRY**

*Understanding the topography of the European seas*  
**Bathymetry Viewing and Download service**

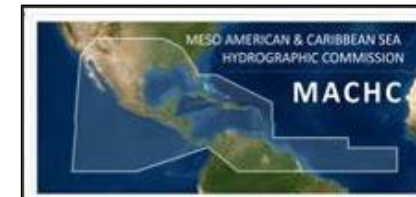




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# RÉUNION IENWG13 - BREST, FRANCE, 23 MAI 2023

## ***IENWG 13 MEETING***



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*Organised on the occasion of the annual **European Maritime Day**  
Gathered **11 HOs and the European Commission (DG Maritime Affairs and Fisheries)***

*IENWG and DG MARE discussed **new opportunities** for collaboration*

*Agenda of the meeting covered also **EU policies of interest for the IHO, projects and strategy***

Joint workshop  
**Benefiting from  
Maritime Data to Drive  
Marine Innovation**

[REGISTER NOW](#)

#EMD2023  
**EMD**  
EUROPEAN MARITIME DAY

**24 May 2023**  
16:15-17:30 CEST  
BREST EXPO  
Parc des Expositions  
de Penfeld Brest, France

eosc | Blue-Cloud2026 | EMODnet

EOOS | TECHNOPÔLE BREST - IROISE | VESSEL AI

European Commission | Brest





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# POURSUITE DE L'ACTIVITÉ DE L'IENWG *IENWG WAY FORWARD*



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***Maritime policies:*** to continue to monitor and influence the EU policies

***Development of the S-100 hydrographic products and services:*** to promote across the European Commission (blue economy, marine safety, climate change, protection of marine areas and biodiversity)

***Capacity Building:*** to promote the development the hydrographic capacity in the EU, and outside EU in particular for safe sea lines with East Asia and Africa - in connection with the new Project Team of the IRCC to extend CB funds

***Data collection:*** to develop common acquisition campaigns of bathymetric data in the EU maritime basins



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Thank you for your attention



MACHC24, 12 – 15 December 2023