

24th Meeting of the Mediterranean and Black Seas Hydrographic Commission

National Report by

FRANCE (Shom)

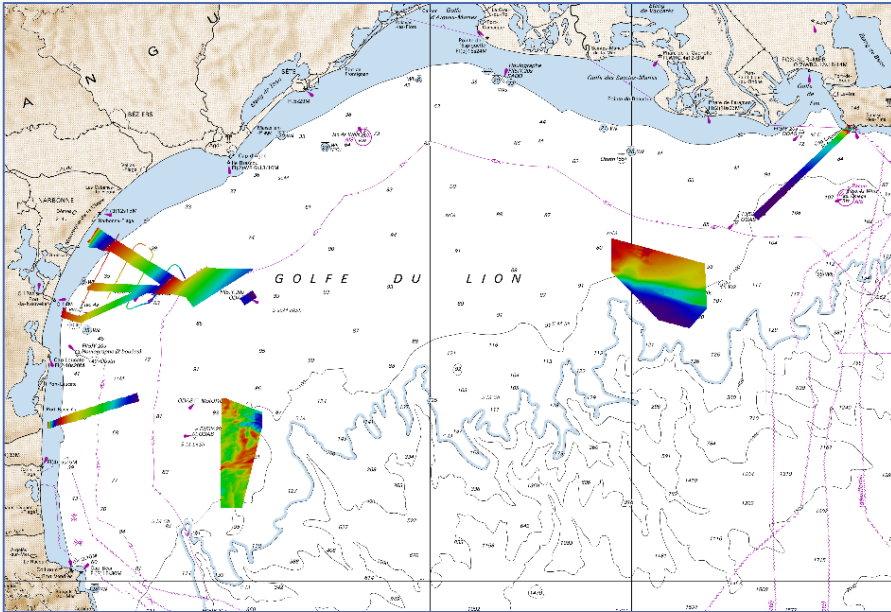


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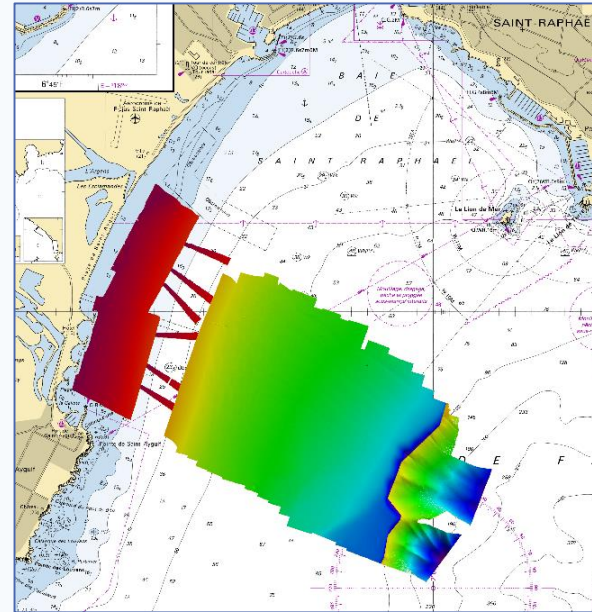
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Main achievements during 2022

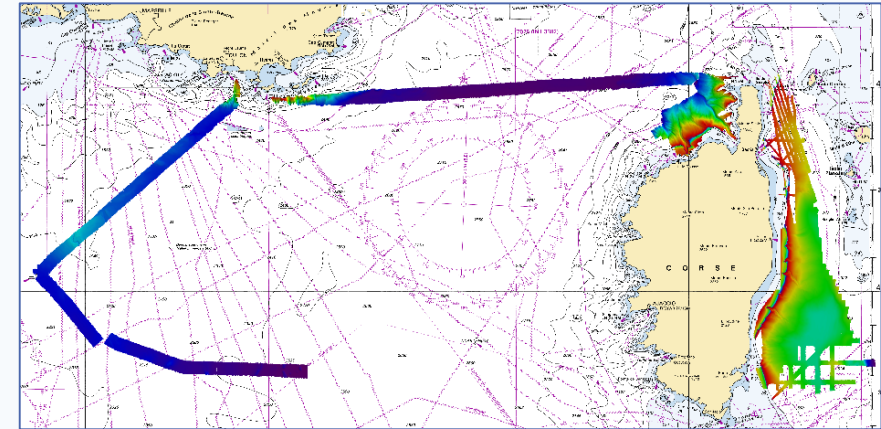
- French surveys in Mediterranean Sea



French bathymetric surveys carried out off French coast in the Gulf of Lion for purpose of marine renewable energy



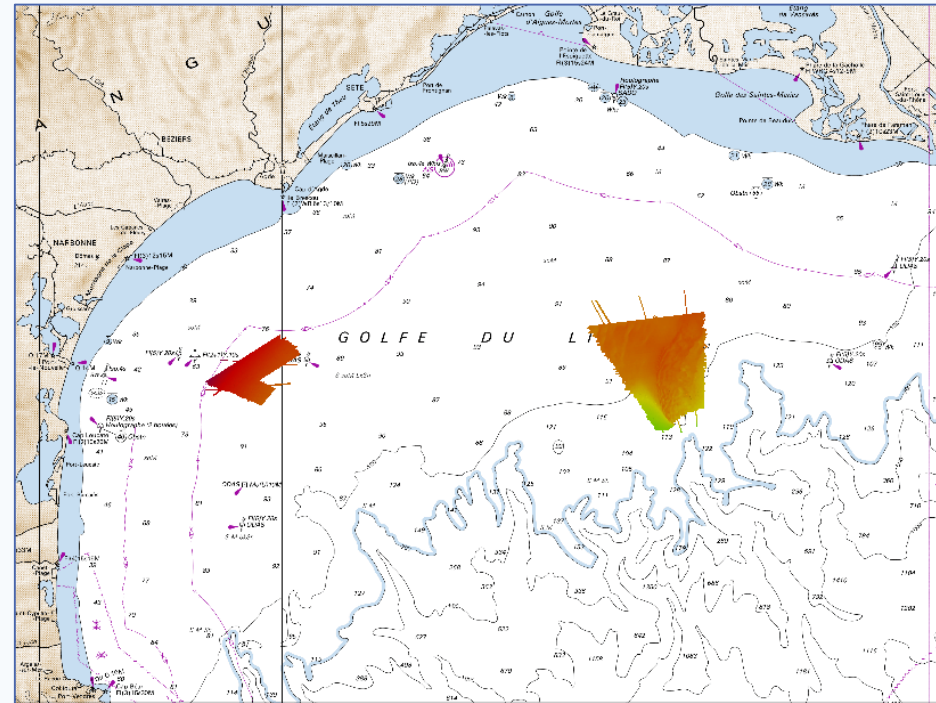
French bathymetric surveys in the Bay of Saint-Raphael



French bathymetric surveys to the north and east of Corsica

Main achievements during 2023

- French surveys in Mediterranean Sea

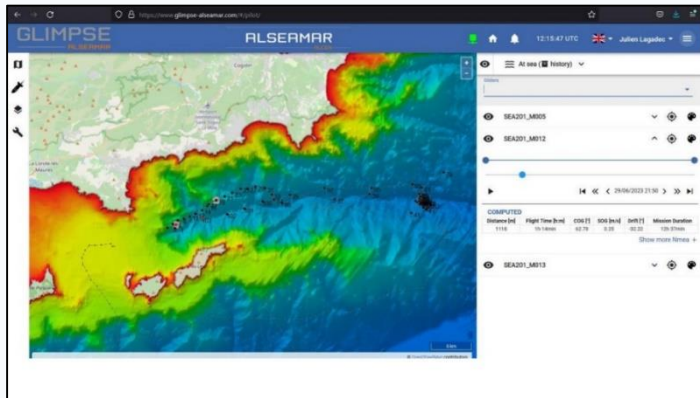


French bathymetric surveys carried out off French coast in the Gulf of Lion for purpose of marine renewable energy

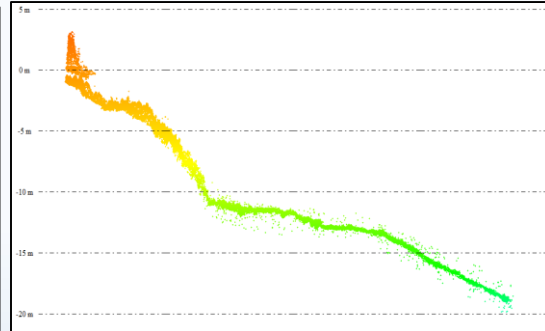
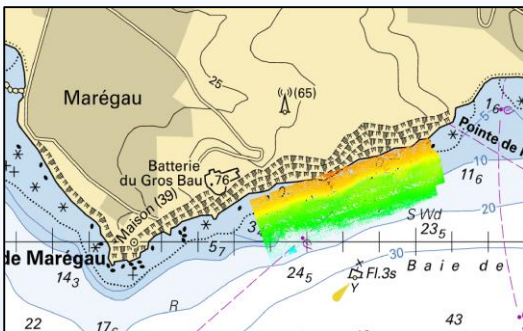
Main achievements during 2023

- **Future hydro-oceanographic capacities**

- August 2023 – 2 gliders Sea Explorer (Alseamar)



- October 2023 – 1 USV DriX (eXail)



- Dec 2023 – 1UAV S100 (Schiebel) / Lidar VQ840G (Riegl)



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Main achievements during 2023

- **Future hydro-oceanographic capacities**

Sketch up of France's two future vessels

- **Ship Dimensions (range)**

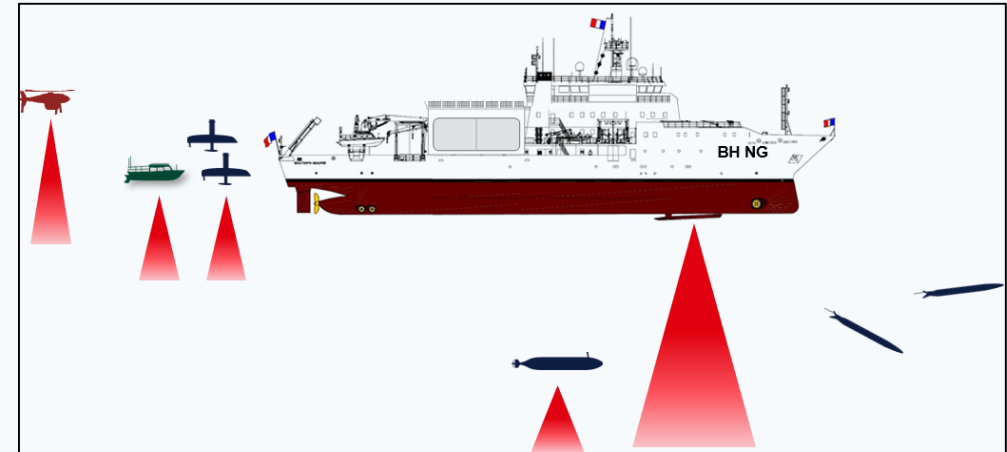
- Length: 90 metres
- Gross tonnage: 3,000 tonnes
- Average operating speed: 10 knots
- Maximum crew : 80 (29 for specialists)

- **Full hydroacoustic suite**

- MBES, SBP, SBES, ADCP, ...

- **Scientific facilities**

- Handling equipment
- Laboratories (humid and air-conditionned)



- **Mobile vehicles**

- 2 USV
- 1 hydrographic survey launch
- USV oceanic (not on board)
- Gliders
- 1 AUV 6000
- 1 UAV

Main achievements

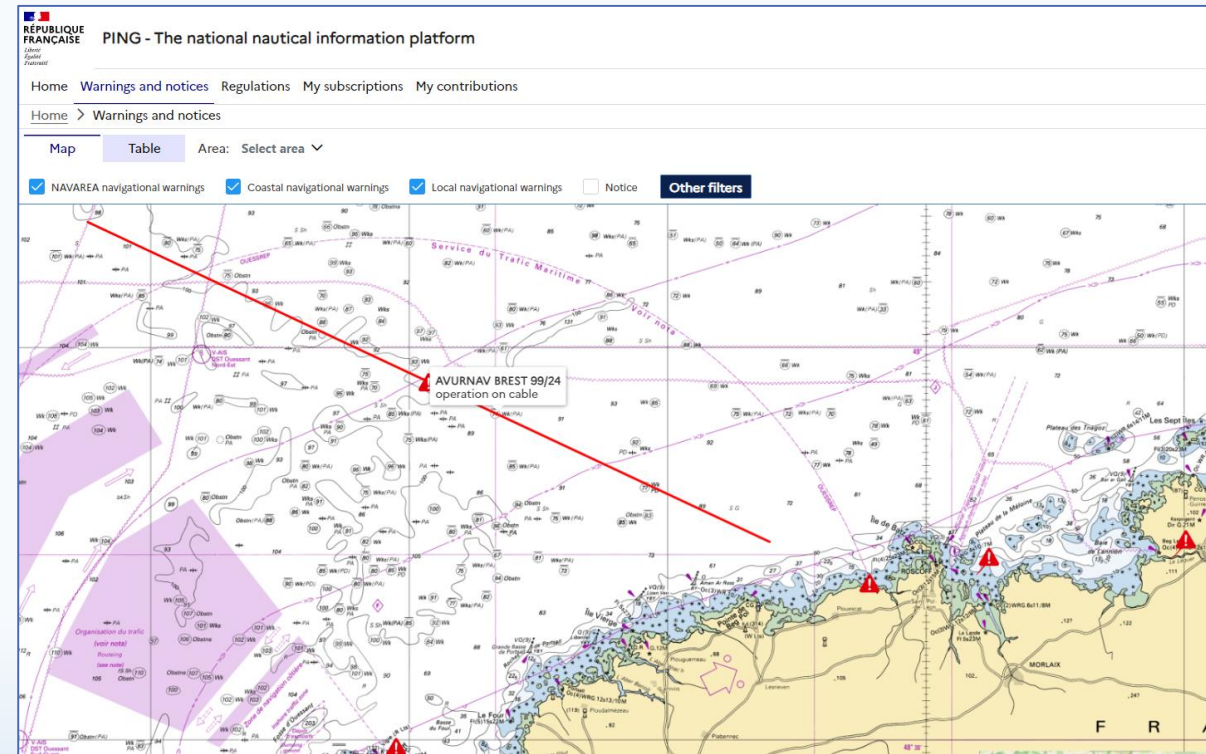
- **PING - National nautical information platform** <https://portail.ping-info-nautique.fr/> opened on April 10, 2024

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.

Next future: production and dissemination of navigational warnings in compliance with S-124 with compatibility with the current NAVTEX and EGC systems



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Main achievements

- **5+5 Defence**

France participated in the Seminar organised by Morocco “ Adaptation of Coastlines to climate change and protection of marine environment ” in October 2023

France participated in the Webinar organised by Italy “Satellite Derived Bathymetry: IIM experience and a case study application” in January 2024

France will organize a Webinar “ Digitalisation of nautical information: PING platform and Nav&Co app ” in 2024



Progress on charting (ENC) - 1/2

- As of 1st April 2024, Shom has produced 840 ENCs, of which 115 ENCs within region F
- The ENC scheme is complete in region F. Details are provided in the table below:

Usage Band	Produced Cells	Planned Cells	Percentage
1	0	0	/
2	1	1	100
3	5	5	100
4	25	25	100
5	46	84	100
6	38		
Total	115	117	100

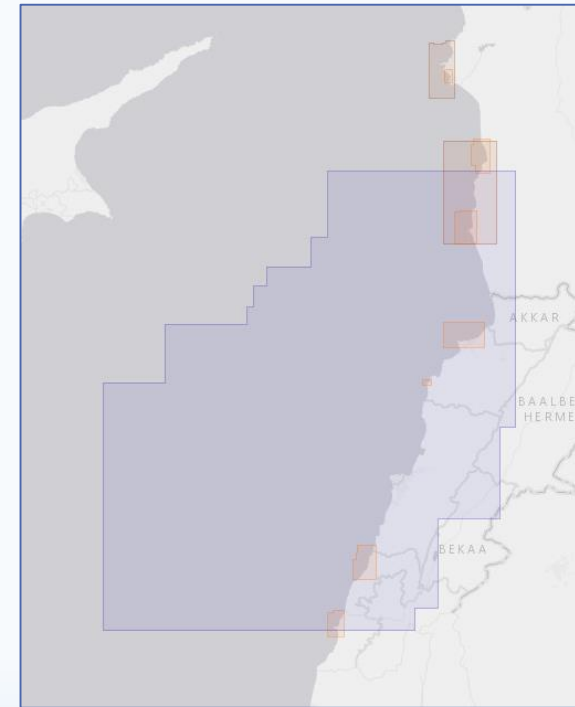
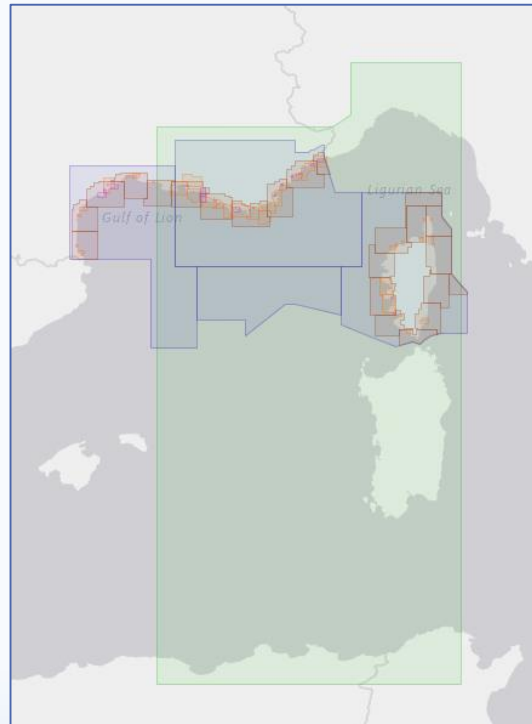
- 17 ENC were produced since the last conference



Progress on charting (ENC) - 2/2

- French ENC coverage

The following figures are extracts from the online PRIMAR catalogue <http://www.primar.org> showing Shom ENC coverage within the MBSHC (region F) area



Progress on charting (INT + National charts)

- The overall INT chart production status for the region F is provided below:

Scale	Produced INT charts	Planned INT charts	Percentage
Small (<1/1 000 000)	1	1	100
Medium	5	5	100
Large (>1/100 000)	17	17	100
Total	23	23	100

- Evolution since the last MBSHC Conference 23 charts have been edited (included 9 INT charts)



Unified Cartographic Source



- Review methodology (included automation) to produce French charts with a data-centric approach and the principle of “single charting scale per area”
- Homogenisation of chart scales by Usage Band and a review of all the French charts to eliminate discontinuities between products
- Production will start mid-2024 by France (Atlantic coast)



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C-55 Latest update – Surveying and charting statutes

Updated values regarding Region F areas under Shom responsibility are summed up in the following tables :

A: adequately surveyed – B: Re-survey required - C: Never systematically surveyed

Survey Status Updated December 2023		Depth < 200m			Depth > 200m		
		A	B	C	A	B	C
F	France Méditerranée	60.1	37.4	2.4	92.9	0.0	7.1
	Lebanon	31.3	13.3	55.4	97.9	0.0	2.1
	Monaco	79.6	19.0	1.4	94.9	0.0	5.1

Charting Status Updated April 2024		Small (<1 M)			Medium (1M < / < 100 000)			Large (> 100 000)			Metric	WGS84
		A	B	C	A	B	C	A	B	C		
F	France Méditerranée	100	/	100	100	/	100	100	/	100	100	100
	Lebanon	100	/	NA	100	/	100	100	/	100	100	100
	Monaco	100	/	100	100	/	100	100	/	100	100	100

A: covered by INT or other paper charts – B: covered by RNC - C: covered by ENC



Capacity Building - 1/2

FIG-OHI-ACI courses:

- category B for hydrographic surveyors (Shom / Brest)
- category B for nautical cartographers (Shom / Brest)
- category A course for hydrographic surveyors (ENSTA Bretagne / Brest)

L'école du Shom
Des formations de référence en hydrographie et sciences de la mer

Formations longues

L3 BS HYDRO	C SYSRES-HOM	CSUP-HYDRO	PRÉPARATEUR CARTO
Licence / Brevet supérieur d'hydrographie	Certificat d'administrateur Systèmes et réseaux d'Hydrographie, d'Océanographie et de Météorologie	Certificat Supérieur d'hydrographie	Technicien préparateur en cartographie marine
15 officiers mariners/civils/étrangers 10 mois pour civils, 14 mois pour officiers mariners Sur dossier Certification internationale de technicien hydrographe	2 à 5 officiers mariners 9 mois Sur dossier Certificat délivré par la marine nationale	2 à 5 officiers mariners hydrographes 4 mois Sur dossier Certificat délivré par la marine nationale	2 à 8 civils / étrangers 9 mois Sur concours TSEF (Titulaire supérieur d'études de 3 ^e secondaire) Certification internationale de cartographie marine

Homologations et équivalences

Homologations en catégorie B par le comité internationale FIG/OHI/ACI* :

- BS Hydro
- Technicien préparateur en cartographie marine

Enregistrement au niveau II au RNCP** de la formation CSUP Hydro pour l'obtention du titre de « Superviseur hydrographe ».

Plateforme e-learning

Catalogue de l'offre de formation

Formations courtes
Cycle de formation Afhy
Formations longues

www.shom.fr

Training courses provided or being providing in 2021 to foreign trainees from the MBSHC region since the MBSHC23 conference:

Country	Course	Year	Student
Tunisia	Cat B. Nautical cartographer	2024	1
Morocco	Cat B. Nautical cartographer	2024	1



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Capacity Building - 2/2

Project management assistance for the construction of hydro-oceanographic vessels

Shom's expertise at the service of shipyards, within the framework of new constructions or modernizations for:

- **Studies to define**, on the basis of an expression of need, **the complete specifications in terms of hydro-oceanographic equipment**, as well as the fitting out of premises and scientific spaces of hydro-oceanographic ships
- **Equipment acceptance and integration**: supervision of equipment integration (mechanical, interfacing, metrology, etc.), acceptance tests in the factory, in port and at sea
- **Training and assistance**: training of personnel who will implement the equipment, but also of personnel who will maintain the systems, transfer of skills, handling of warranty calls after delivery of the vessel to the end customer



Nigerian hydrographic ship Lana built by the French shipyard OCEA with the support of Shom (Source: OCEA)

Recent assistance : Nigeria > following the delivery of the hydrographic vessel Lana in January 2021, secondment of a Shom's hydrographic engineer for two years to NNHO to train and support the survey team.

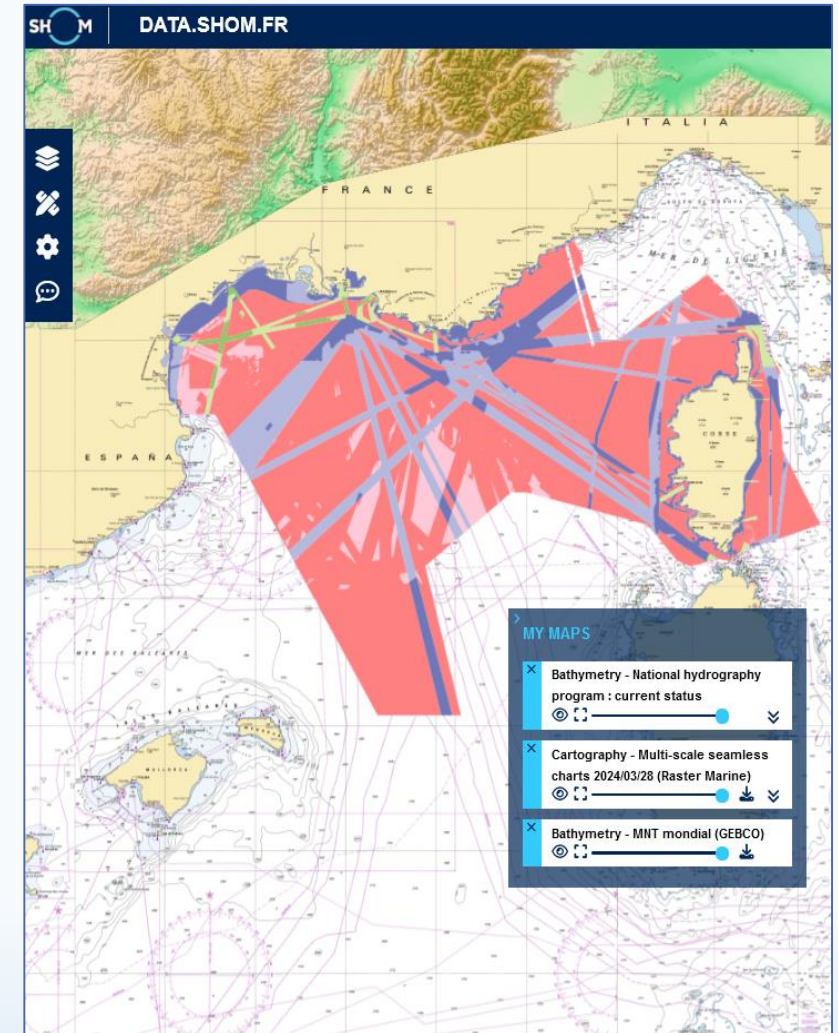


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Marine Spatial Data Infrastructure (MSDI) 1/2

- **data.shom.fr and diffusion.shom.fr (latest evolutions)**
- New ergonomics of Shom's online shop diffusion.shom.fr
- Aids to navigation (AtoN) (edition) and Wrecks and Obstructions (edition);
- Bathymetric measurements (edition);
- National hydrography program: current status (new);
- Sovereignty or jurisdiction maritime spaces (new);
- Maritime areas – chart 8510CX (edition);
- State action at sea – chart 8502 (edition);
- Maritime Altimetric References (edition);
- Mainland France sediment map (edition);
- Coastal altimetry (Litto3D): data display improvements;
- Global coastline (edition) and GEBCO worldwide bathymetric DTM (edition);
- Tidal tables calculation (edition);
- On demand tidal table calculation (update).

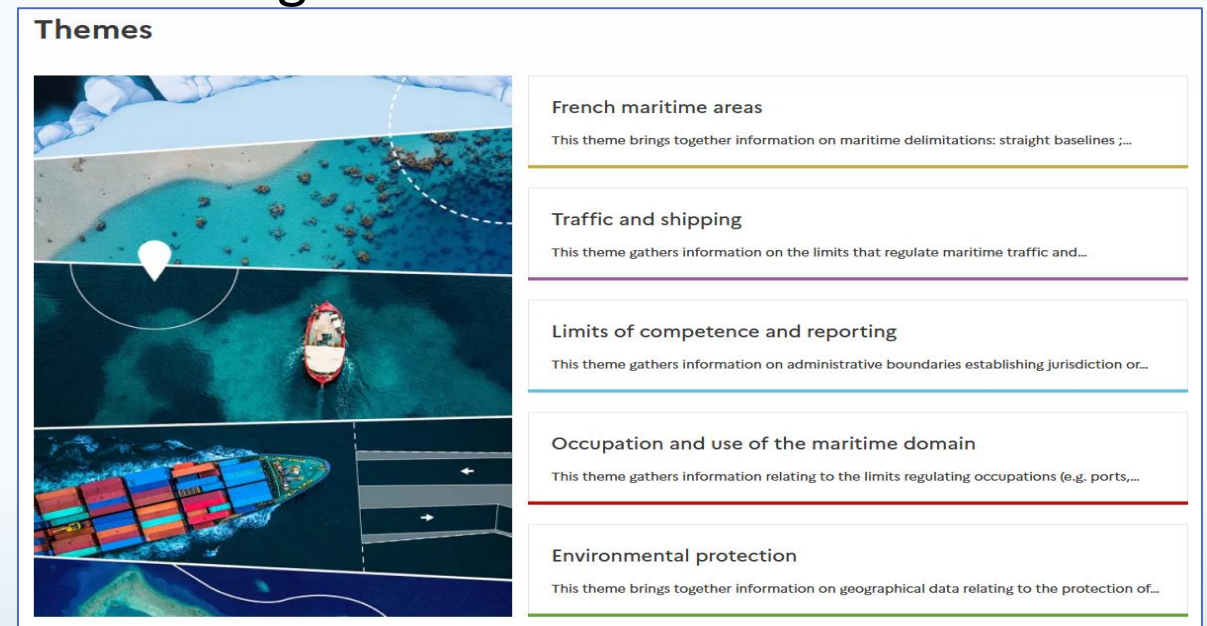
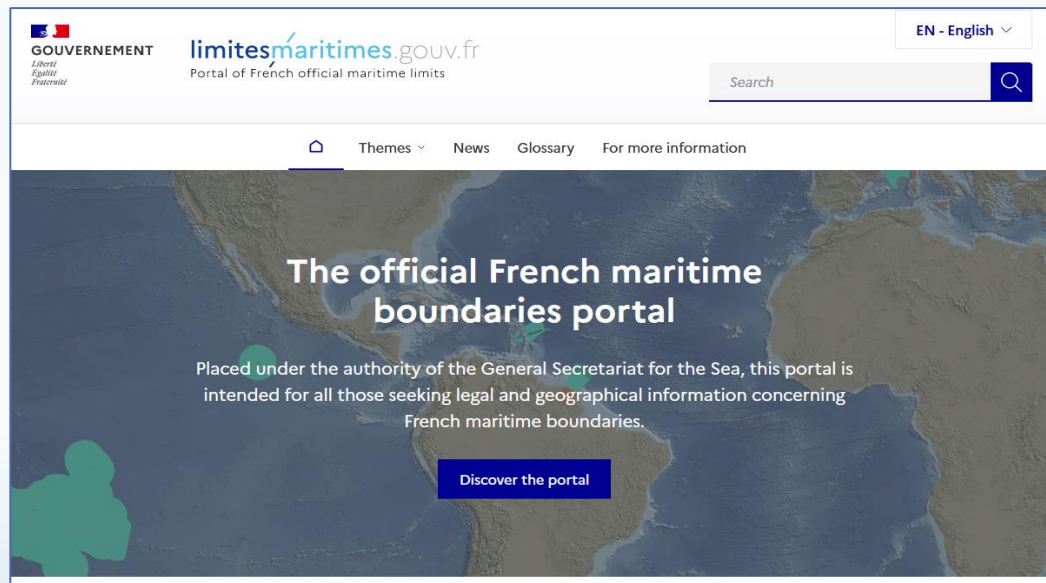


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Marine Spatial Data Infrastructure (MSDI) 2/2

- **maritimelimits.gouv.fr**
- The official French maritime boundaries portal
- A new version was released in February 2023
- Includes new ergonomics and information is now organized into 5 themes:



Main challenges: S-100 - 1/2

- **UKHO – Shom S-100 ECDIS collaboration**

> **Project as a risk assessment on the Dual Fuel mode of ECDIS**

High level goals

- Develop S-101 understanding, from data production to ECDIS display
- Safety case to support IMO approval of the S-100 ECDIS systems
- Develop RENC capability and support industry on S-100 ECDIS
- Build a testing framework for similar S-100 ECDIS testbed project



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Main challenges: S-100 - 2/2

- **UKHO – Shom S-100 ECDIS collaboration**
> **A long-term & 3-phase project**

Phase 1 : Data production

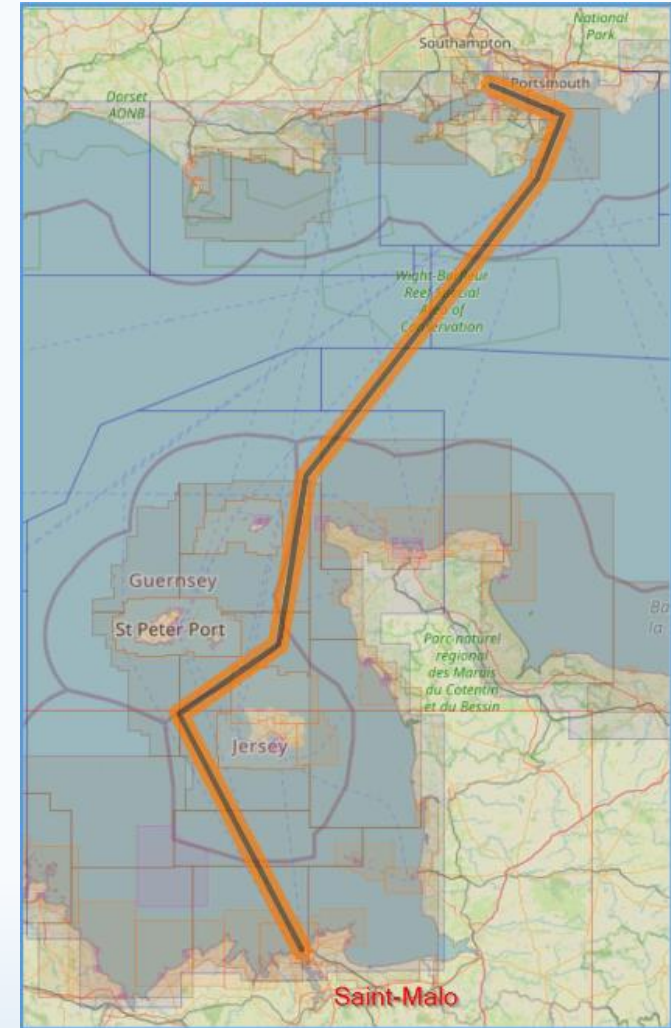
- S-57 to S-101 conversion
- ENC updating
- ENC scheming (paper chart vs gridding)

Phase 2 : Data distribution

- HO to RENC data delivery
- RENC validation
- Cybersecurity : encryption, signatures, licensing, compression

Phase 3 : Data display

- Sea trials





Thank you for your attention
Any question ?



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