

# 21<sup>st</sup> Meeting of the North Indian Ocean Hydrographic Commission

National Report by

France (Shom) – Associate Member



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# Main achievements during the year

- No survey carried out in the NIOHC Region since NIOHC-20



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# Progress on charting – ENC

- Current status of French ENC production in Region J:

Usage Band	Produced Cells	Planned Cells	Percentage
1	0	0	N/A
2	1	1	100%
3	2	2	100%
4	1	2	50%
5	3	7	57%
6	1		
Total	8	12	67%

**1 ENC produced since NIOHC-20 :** *New Edition of FR475470 – Djibouti's approaches*

**6 ENC cells to be produced (2023 or later) in the region of Djibouti :**

*Western part of Gulf of Tadjoura, Entrance of Ghoubbet Cove, Ghoubbet Harbor, Bay of Doraleh and Khôr Ambâdo, Damerjog terminal and Tadjoura Harbor*



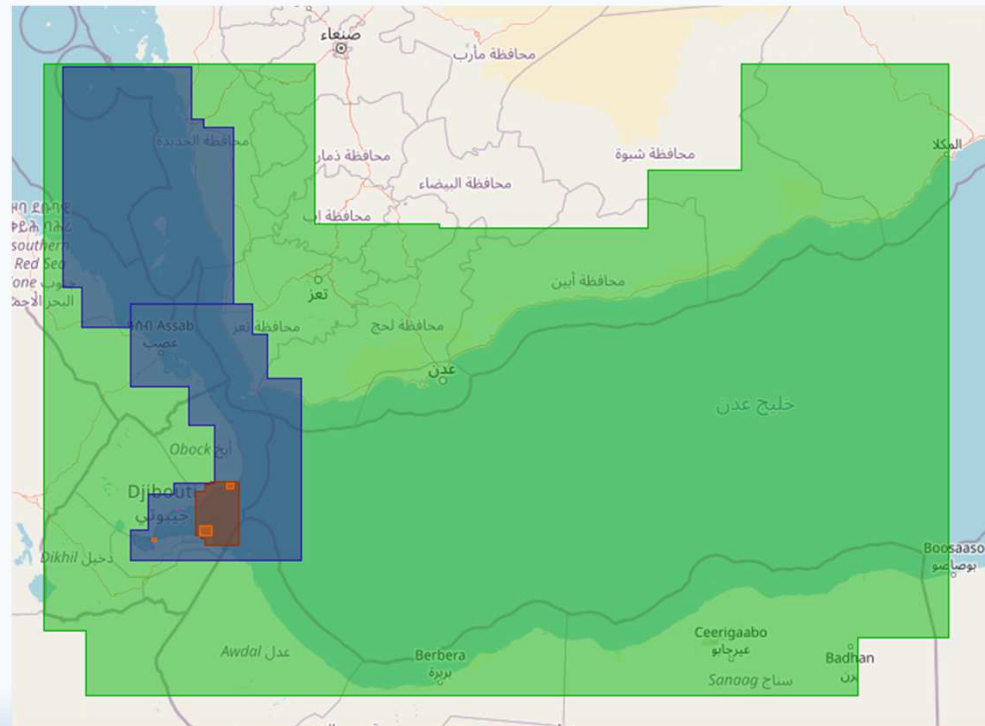
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# Progress on charting – ENC

- Shom ENC coverage within the NIOHC Region :



Extract from the online PRIMAR catalogue (<https://www.primar.org>)



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# Progress on charting – INT Charts

- All INT charts under responsibility of Shom have been produced within the NIOHC Region:

Scale	Produced INT charts	Planned INT charts	Percentage
Small (<1/1 000 000)	0	0	N/A
Medium	3	3	100%
Large (>1/100 000)	2	2	100%
Total	5	5	100%

One INT chart produced since the last conference :

INT	Scale 1:	Title	Comment
7115	50 000	<i>Abords de Djibouti</i>	FR7547 – New Edition



# Progress on charting – National Charts

- No national chart has been produced since the last conference, and none is planned for 2022-2023.
- 2 new charts are currently designed to cover the western part of the Gulf of Tadjoura at scale 1: 50 000 and should be produced from 2023:
  - FR7848 – Ouest du golfe de Tadjoura
  - FR7849 – Ports du golfe de Tadjoura
- These future charts may be submitted later as new INT charts to the NIOHC ICCWG.



# C-55 latest update – Surveying and charting statutes

- Regarding Region J : FR PCA for Djibouti

A : adequately surveyed – B : re-survey required – C : never systematically surveyed

Survey Status <b>Updated: December 2021</b>		Depth < 200m			Depth > 200m		
		A	B	C	A	B	C
J	Djibouti	23.3 %	53.4 %	23.3 %	93.6 %	0.4 %	6.0 %

Charting Status <b>Updated: May 2022</b>		Small (<1 M)			Medium (1M < / < 100 000)			Large (> 100 000)			Metric	WGS84
		A	B	C	A	B	C	A	B	C		
J	Djibouti	100	0	NA	100	0	100	81	0	50	100	100

C-55 values for survey status (top table) and charting status (down table). Updated values are highlighted in red

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

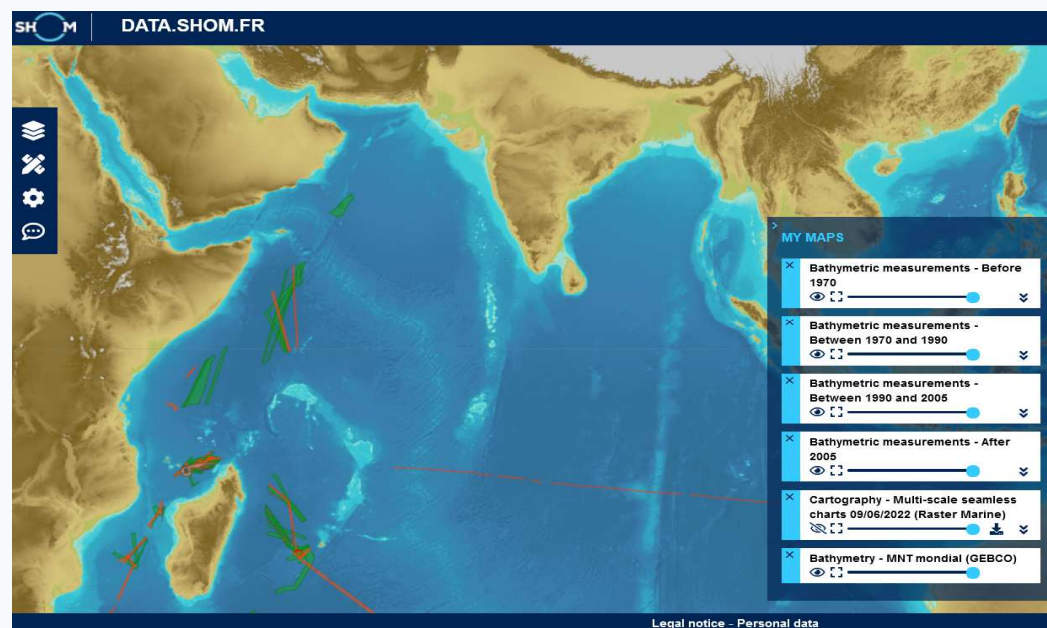
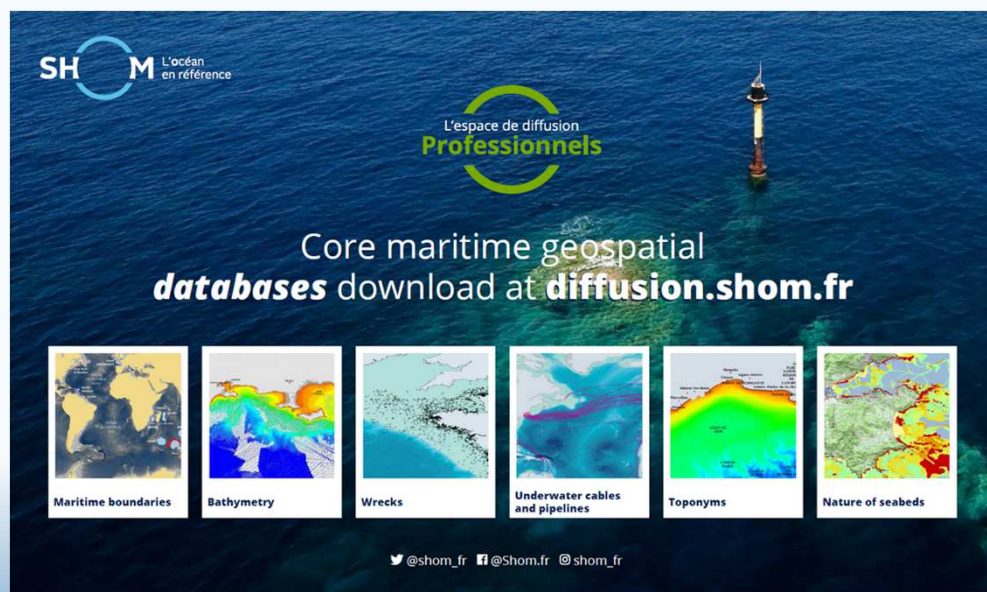




# Progress on MSDI

- Shom develops and maintains a MSDI covering all maritime areas under FR responsibility through 3 portals :

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



## Evolutions since NIOHC-20 :

- Worldwide sediments map (edition)
- Bathymetric measurements (edition)
- New tools and services (<https://services.data.shom.fr/support/fr>)
- Redesigned drawing tool and new tools



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# Capacity Building

## 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)

**SHOM** L'océan en référence

### TRAINING COURSES PROVIDED BY SHOM SCHOOL

	BS/L3* HYDRO*	C SYSRES-HOM	C SUP HYDRO***	NAUTICAL CARTOGRAPHER TRAINING COURSE*
<b>Average number of students</b>	2 to 8 petty officers/ 2 foreign students/10 students UBO	2 to 5 hydrographers petty officers	2 to 5 hydrographers petty officers	2 to 8 trainees
<b>Duration</b>	14 months	9 months	4 months	9 months
<b>Admission</b>	based on application file	based on application file	based on application file	based on diplomas or competitive exam
<b>Curriculum</b>	<ul style="list-style-type: none"> <li>manoeuvring and navigation Training</li> <li>specific course on hydrography and oceanography</li> <li>on board end-study project</li> </ul>	<ul style="list-style-type: none"> <li>information technology theoretical and practical training (application to hydrography IT)</li> <li>Practical internships in SHOM IT department and survey unit (GHOA)</li> </ul>	<ul style="list-style-type: none"> <li>advanced technical training on hydrography</li> <li>team management training</li> </ul>	<ul style="list-style-type: none"> <li>general training on hydrography and geosciences</li> <li>specific training on nautical cartography</li> <li>end-study technical project</li> </ul>

\*Information carried out in partnership with the UBO, its validation allows you to obtain a bachelor's degree.  
\*\*Integrated training course of category B lead by SHOM-ENSTA International board.  
\*\*\*Integrated training course of category A lead by SHOM-ENSTA International board. Engineering degree accredited by C3 and labelled EUR-ACE (accreditation of engineering courses in Europe)  
\*\*\*\*Title of "Hydrographic Engineer" registered in the INETP and certified at level II (Bachelor's degree)

**SHOM school support to L'ENSTA Bretagne**

**HYDROGRAPHIC ENGINEER\*\***

Average number of students → 36 months (+12 months for French military students)  
Duration → based on diplomas or competitive exam  
Admission → see: [www.ensta-bretagne.fr](http://www.ensta-bretagne.fr)  
Curriculum →

**Logos:** Cti, EUR-ACE, FIG, ICA, ACT, CACP

**www.shom.fr**  
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Since NIOHC-20 :

- one petty officer from Indonesia (PUSHIDROSAL) completed the Shom Cat. B course in hydrography in Brest (Sept. 2021 to July 2022)



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# Capacity Building

- **Project management assistance for the construction of hydro-oceanographic vessels**
  - **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 Sho (Source: OCEA)*

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



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# Status of bilateral, multilateral or regional development projects

- France fosters a mechanism of gradual transfer of responsibilities through State-to-State administrative arrangements.
- Within the NIOHC area, a bilateral arrangement of this kind is concluded between France and the Republic of Djibouti.
- An arrangement for the exchange and reproduction of nautical products, in accordance with IHO Resolution 7/1919 as amended (former A3.4) has been concluded with the National Hydrographic Office of India (INHO). The last revision was signed in June 2021.



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# Innovation / New equipment

- **French national program to prepare the future hydro-oceanographic capacities**

- **latest experiments**

- September 2020 – 2 USV DriX (iXblue)
- January 2021 – AUV Gavia (Teledyne)
- May 2021 – USV Inspector (ECA)
- June 2021 – AUV A18D (ECA)
- August 2021 – 2 gliders Sea Explorer (Alseamar)
- October 2021 – AUV HUGIN Superior (Kongsberg Maritime)



*Experiment of USV DriX deployed from BHO Beautemps-Beaupré*



*Experiment of AUV HUGIN deployed from BHO Beautemps-Beaupré*



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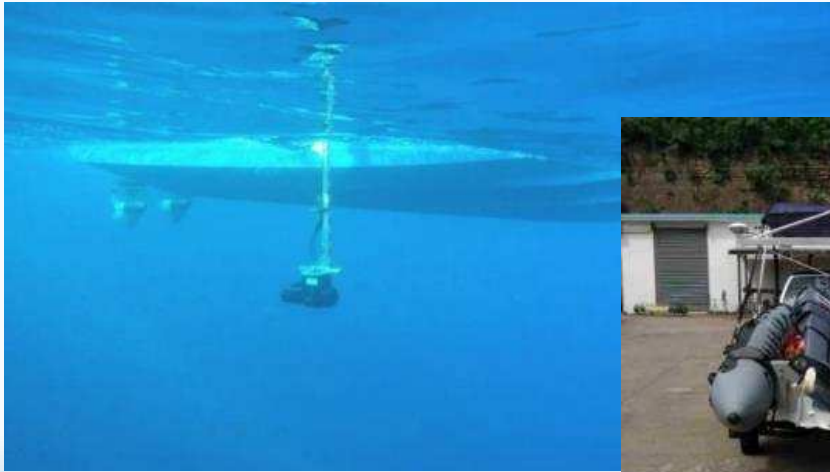


# New equipment

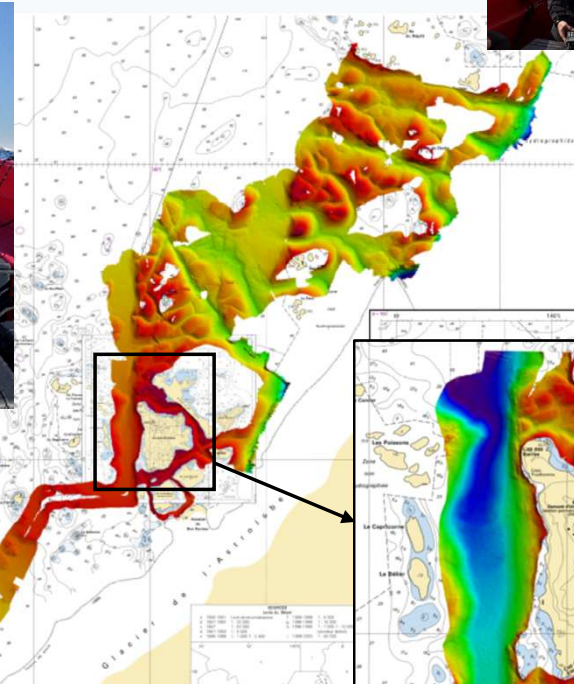
## • Deployable hydrographic systems (1/2)

### ➤ Upgrade of the Shom's deployable hydrographic system with a very-shallow MBES (SDHM)

- Primarily designed for military REA operations
- Team of 3 hydrographers



MBES Norbit iWBMSH integrated to Shom's deployable hydrographic system



Survey realized in January 2022 in Terre Adélie with the upgraded deployable hydrographic system



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# New equipment

## • Deployable hydrographic systems

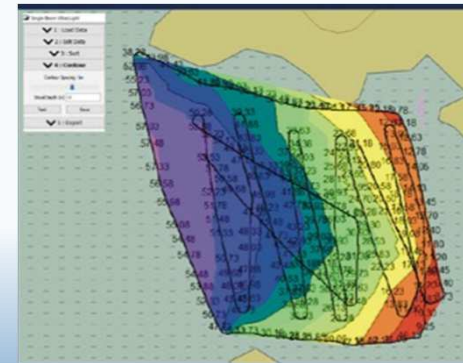
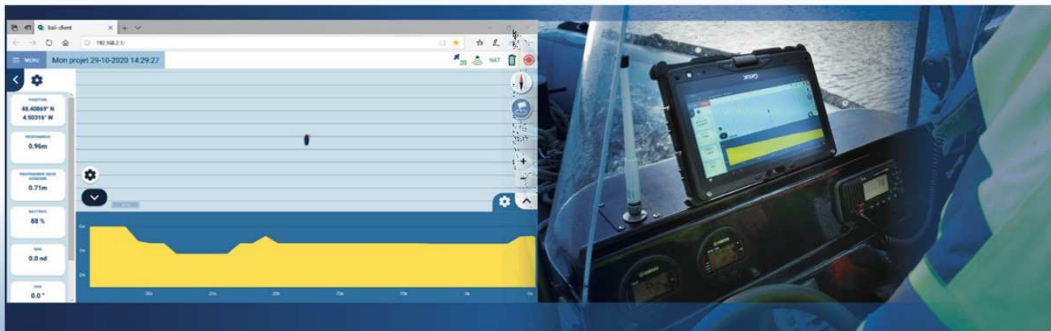
### ➤ New equipment : Light Hydrographic System (SHL)

Complete and compact system for conducting REA surveys

Use without prior training by naval staff with the Navigation speciality

- Quick installation
- Simplified acquisition (*managed as an application*)
- Optimized processing for decision support (*export in ECDIS compatible format*)

(2/2)



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## Plans that affect the region

- Survey campaigns are planned by Shom on a regular basis in Djibouti and within the Bab-el-Mandeb Strait to improve the navigational safety. Their achievement level depends on the authorizations received from the concerned Coastal States.
- Next campaign in the Indian Ocean planned in 2023 with the deployment of BHO *Beautemps-Beaupré*.



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# Action requested from NIOHC21

- To take note of the French national report



Thank you for your attention



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