



# 18<sup>th</sup> Conference of the IHO Hydrographic Commission on Antarctica

## **National Report by France (Shom)**

### **Agenda item 07.2h**

HCA-18, Berlin, Germany (hybrid), 24 – 26 May 2022

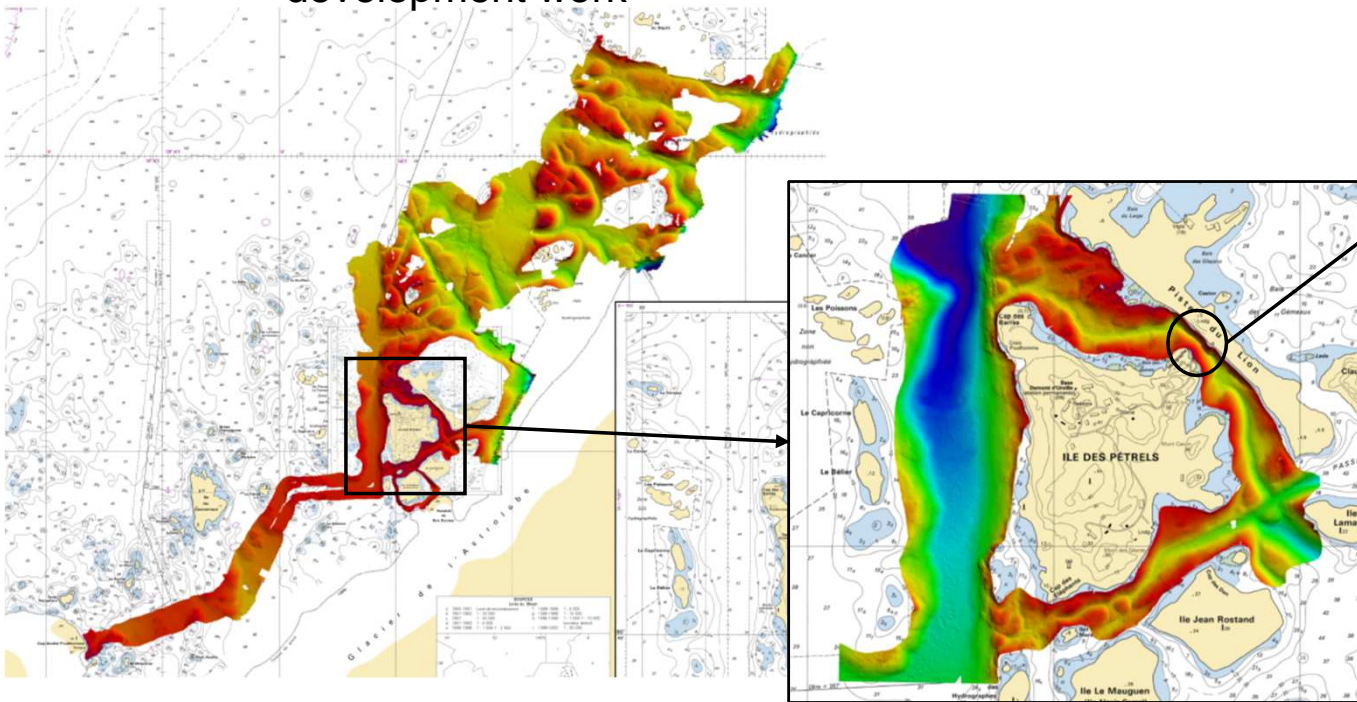


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# Surveys progress in Antarctica since HCA-17 (June 2021)

- Survey in January 2022 in **Terre Adélie** (*Dumont D'Urville base*) with the new deployable MBES system

2-week survey to improve navigation capacities and to plan development work



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## Surveys progress in Antarctica since HCA-17 (June 2021)

- Deployed means for the survey

### Deployable MBES hydrographic system

Shom's deployable hydrographic system (designed for surveying in military operations) with a very shallow multibeam sounder (Norbit iWBMSH) and a team of 3 hydrographers



MBES Norbit iWBMSH integrated to Shom's deployable hydrographic system

### French Polar Logistic Icebreaker *L'Astrolabe*

- 72 m long, 16m large, 60 PX, IB5 Class
  - TAAF, IPEV & Defence Ministry partnership
  - Operated by French Navy
  - Christened in 2017 (replaces both NS *Albatros* and supply vessel *Astrolabe*).
- 
- Not fitted with hydrographic sensors



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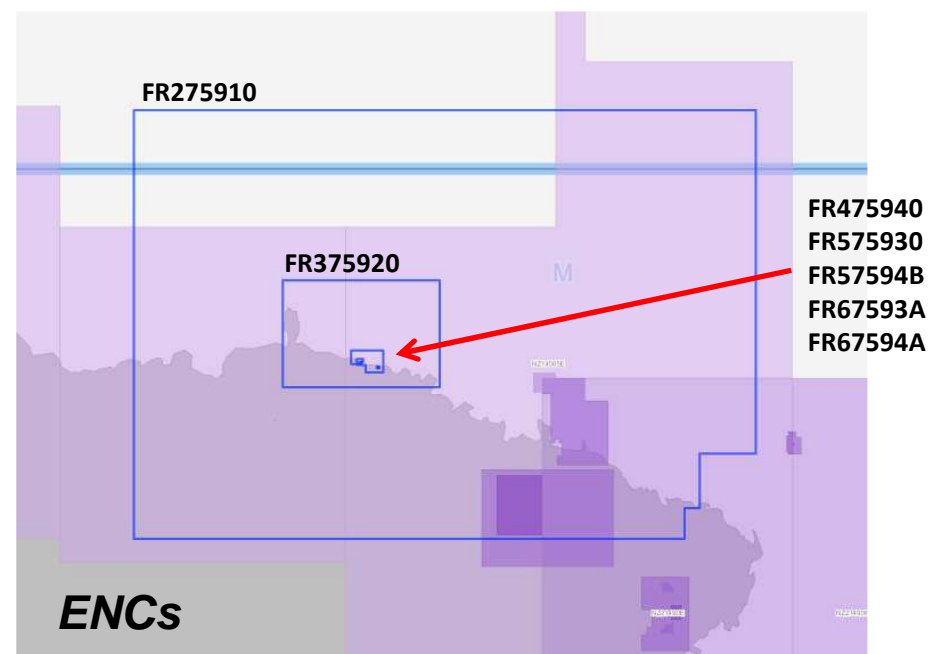
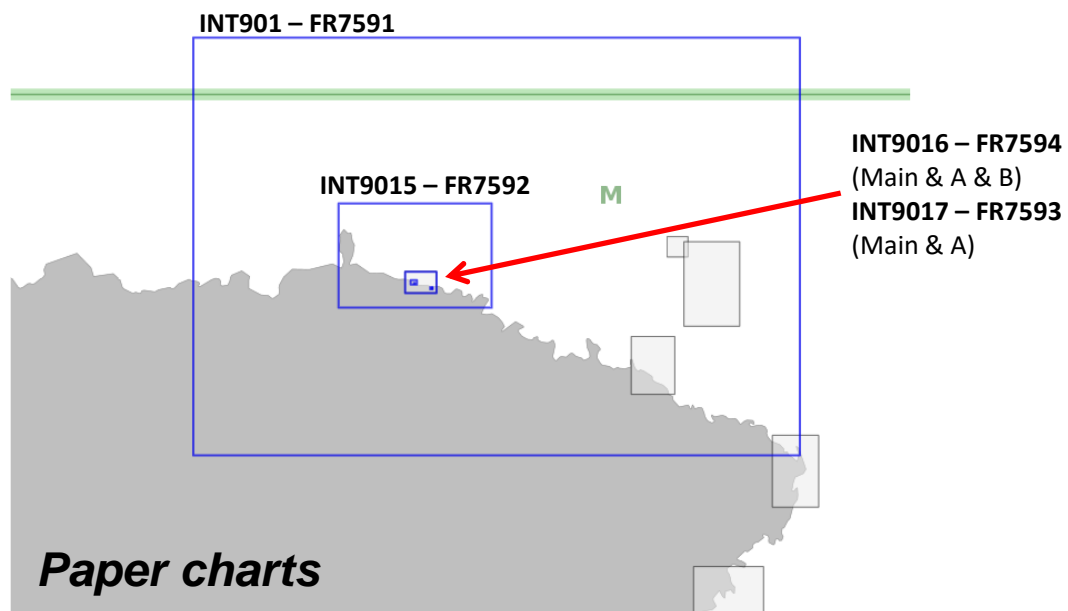
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# Charting progress in Antarctica since HCA-17 (June 2021)

- All FR ENC and INT charts produced in region M

7 charts and 7 cells available

Coming up : new editions of charts and ENCs following the survey of January 2022



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# IHO Sea level monitoring

International  
Hydrographic  
Organization

- FR Tide gauge in Antarctica - Dumont d'Urville observatory

- Part of ROSAME network (South of Indian ocean)

<http://www.legos.obs-mip.fr/fr/share/soa/cgi/getobs/v0.2a/index.pl.cgi?contexte=ROSAME&donnees=MRG&suivi=TPS-REEL&env=COTIER>

<http://refmar.shom.fr/en/partenaires/producteurs-de-donnees/reseau-maregraphique-rosame>

<https://data.shom.fr/donnees/refmar/108>

- ARGOS real-time transmission



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(Source: CNRS)

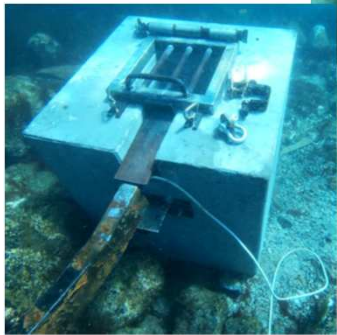
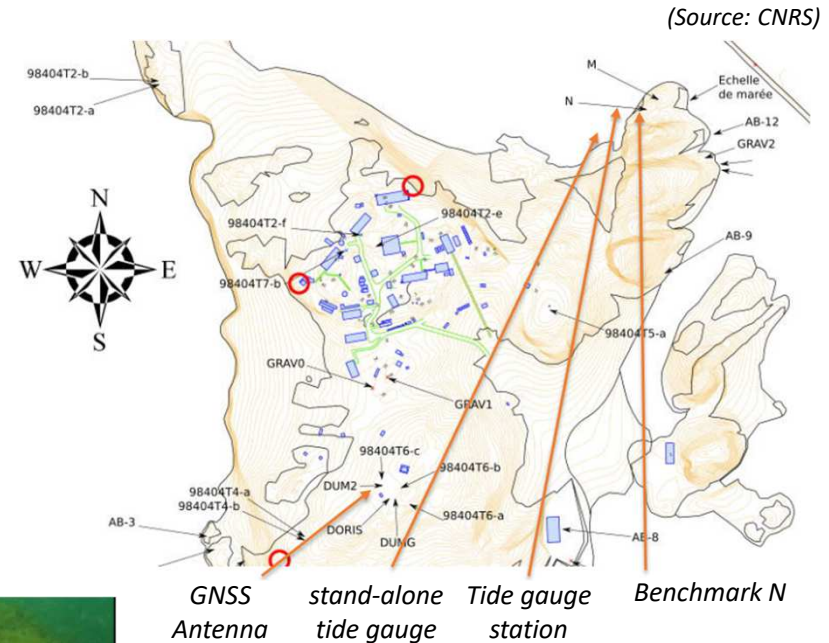


# IHO Sea level monitoring

- FR Tide gauge in Antarctica - Dumont d'Urville observatory

➤ Mission *NIVMER DDU 2022*

- ✓ carried out by CNRS – INSU (14 Dec. 2021 – 22 Jan. 2022)
- ✓ 2 objectives : reinstallation of the tide gauge station + installation of a stand-alone tide gauge



(Source: CNRS)



(Source: CNRS)

Tide gauge station



(Source: CNRS)

stand-alone tide gauge

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(Source: CNRS)



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## Relations with Other Organizations

International  
Hydrographic  
Organization

- Hydrographic data received from other organizations  
NTR
- Hydrographic data provided to other primary charting  
authorities and/or GEBCO

Shom hydrographic data (soundings, DTM) are available under  
open data licences on Shom portals :

[data.shom.fr](https://data.shom.fr) & [diffusion.shom.fr](https://diffusion.shom.fr)

(Older data will be available as and when digitization is required)



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## **Planned Activities for 2022-2023**

International  
Hydrographic  
Organization

- New charts, new publications  
NTR
  
- New surveys  
NTR

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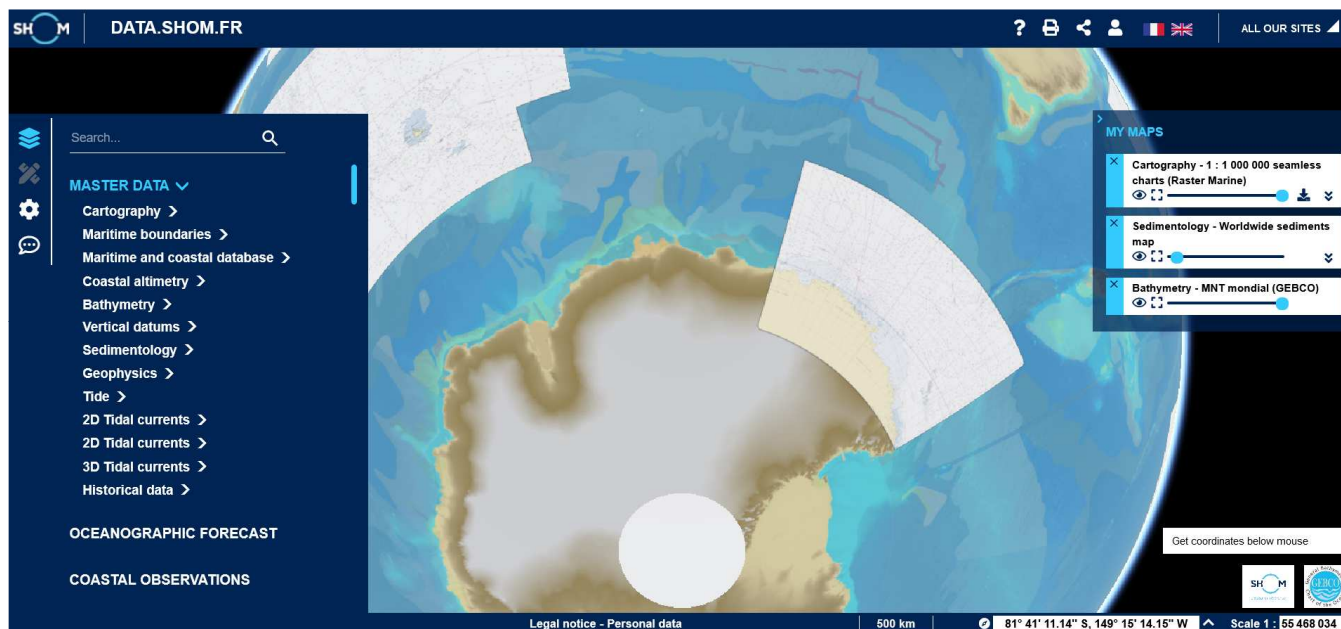
# IHO Marine Spatial Data Infrastructure

International  
Hydrographic  
Organization

- **MSDI – [data.shom.fr](https://data.shom.fr) : updated layers + new ergonomics**

## Latest evolutions:

- Updated layers :
  - Worldwide sediments map (edition)
  - Multi-scale seamless charts (weekly edition)
  - Marine Altimetric Reference (edition)
- New tools and services  
(<https://services.data.shom.fr/support/fr>)
- New ergonomics of data.shom.fr portal
- Redesigned drawing tool



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# IHO Future hydro-oceanographic capacities

International  
Hydrographic  
Organization

- **French national program “CHOF”**

- **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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# IHO Capacity Building 1/2

International  
Hydrographic  
Organization

- **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 Shom (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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# IHO Capacity Building 2/2

International Hydrographic Organization

## • 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/L3A 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>manœuver 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>

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

**HYDROGRAPHIC ENGINEER\*\***

**Average number of students**

**Duration** 36 months (+12 months for French military students)

**Admission** based on diplomas or competitive exam

**Curriculum** see: [www.ensta-bretagne.fr](http://www.ensta-bretagne.fr)

**Logos:** Cti, European Association of Engineering Programmes (EUR-ACE), FIG, ICA/ACI, CACP

**www.shom.fr**

**Twitter:** @shom\_fr **Facebook:** shom.fr **Instagram:** shom\_fr

Les logos : ENSTA : Ecole Nationale Supérieure des Techniciens Supérieurs - ANCP : Répertoire National de la Certification Professionnelle - Cti : Commission des Titres d'Ingénieurs - FIG-OHI-ACI : Fédération Internationale des Géomètres - Organisation Hydrographique Internationale - Association Cartographique Internationale - IHOACI : Institut Hydrographique - Brest Supérieur - C SUP HYDRO : Certificat Supérieur d'Hydrographie - C SYSRES-HOM : Certificat d'Administration d'Hydrographie et de Mécatronique - ICA : Groupe Hydro-Océanographique de l'Atlantique - IHO : Université de Bretagne Occidentale

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## Particular issues that may require HCA consideration

International  
Hydrographic  
Organization

- MSs wishing to exchange with Shom on METOC support for ice navigation, are kindly invited to contact :  
[hom-cfud-d@shom.fr](mailto:hom-cfud-d@shom.fr) & [dmi-rex-d@shom.fr](mailto:dmi-rex-d@shom.fr)
- Take note of this report



Thank you for your attention

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