



18th Conference of the IHO Hydrographic Commission on Antarctica

National Report by France (Shom)

Agenda item 07.2h

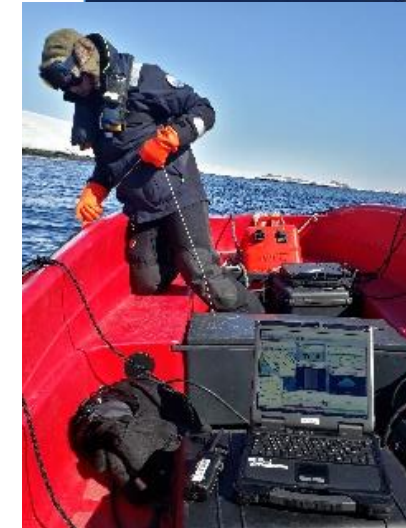
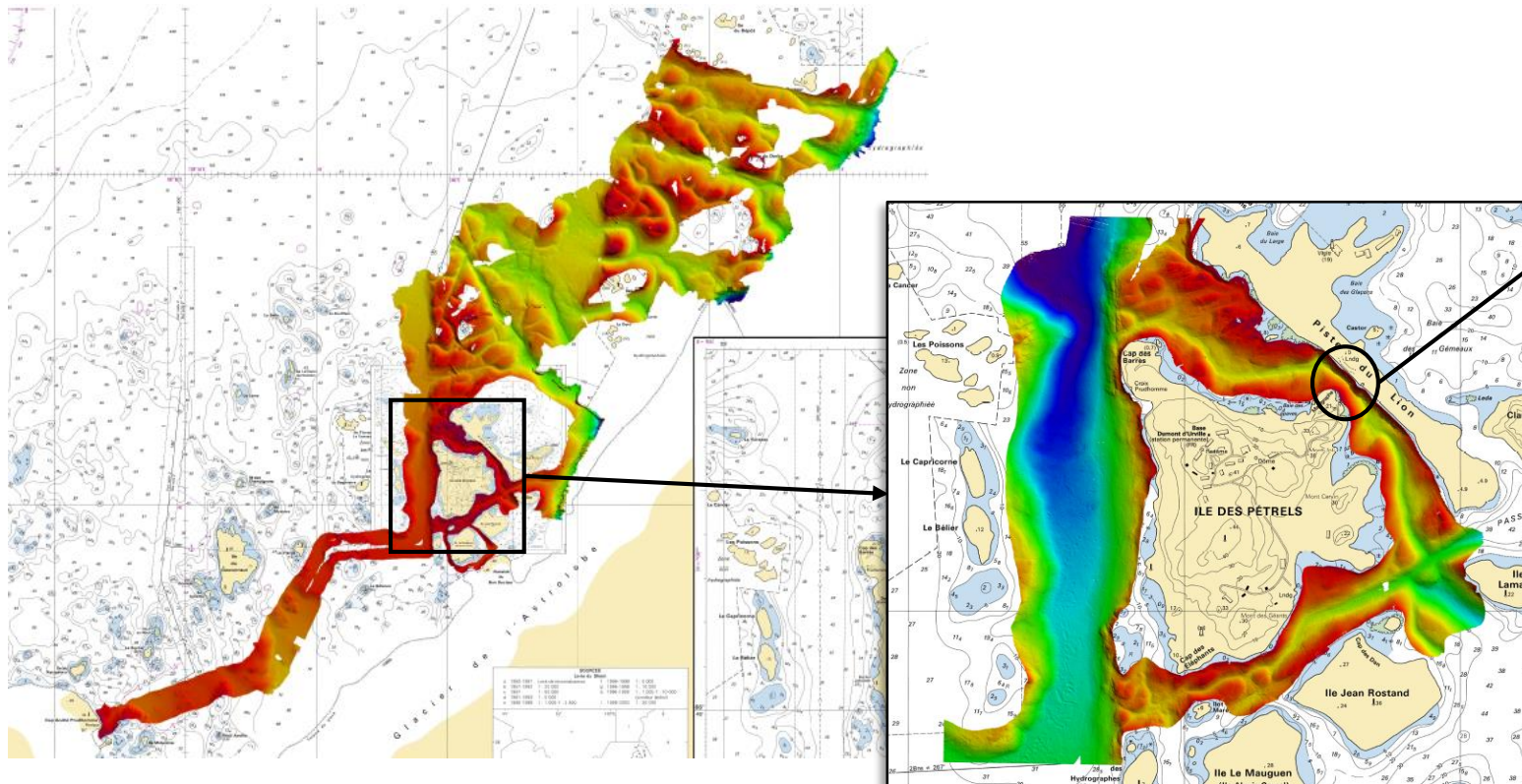
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Surveys progress in Antarctica since HCA-17 (June 2021)

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



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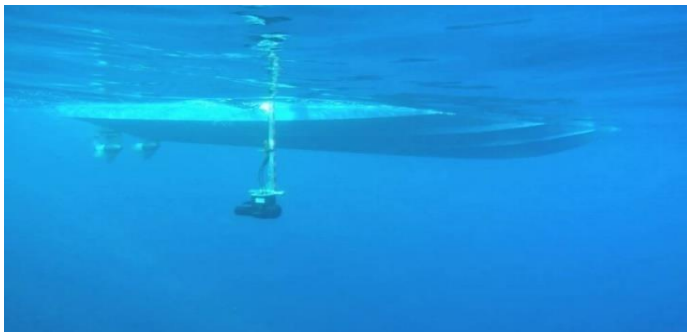
International
Hydrographic
Organization

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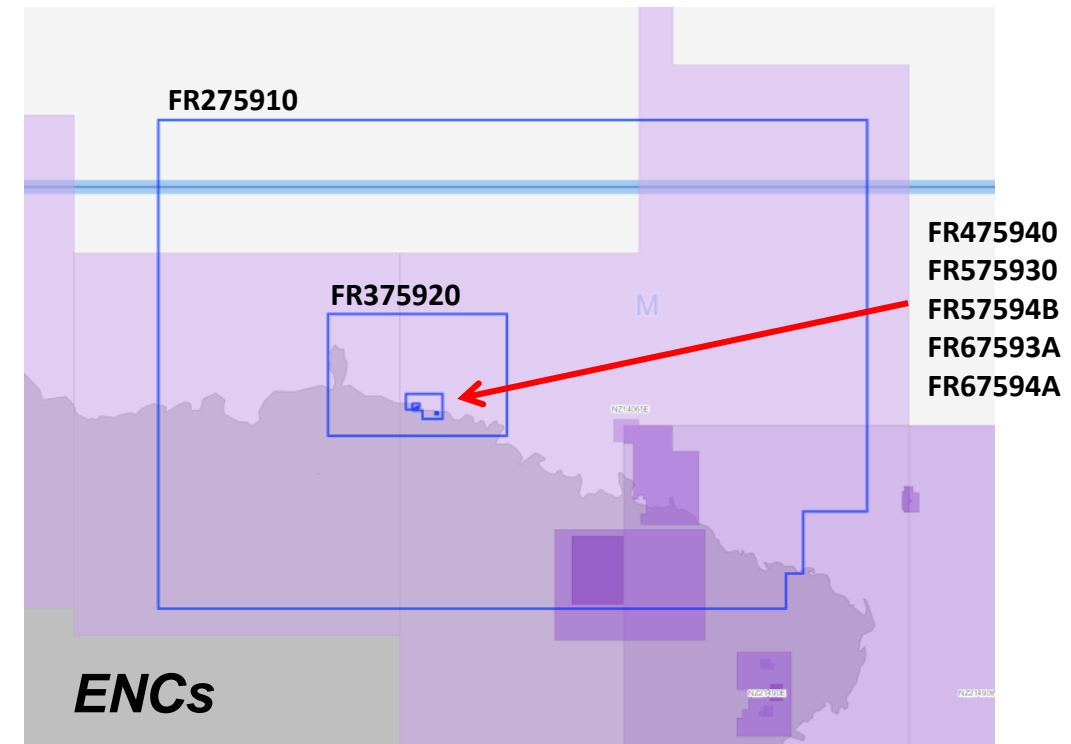
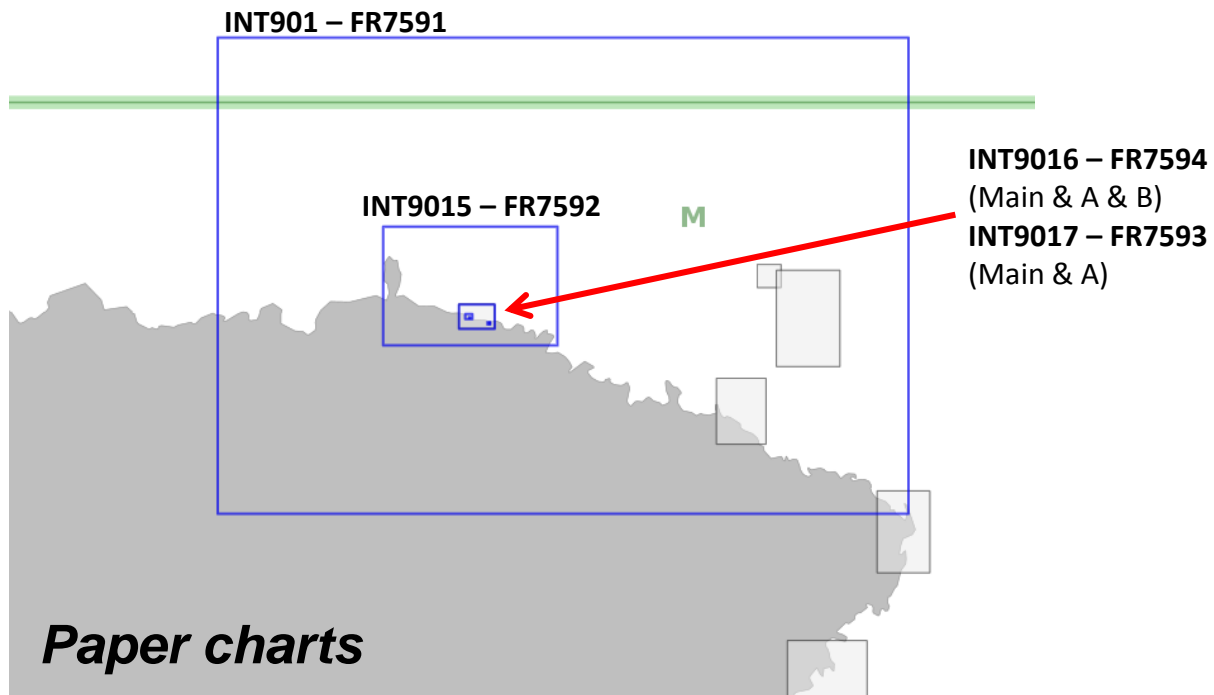
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Charting progress in Antarctica since HCA-17 (June 2021)

- All FR ENC and INT charts produced in region M

7 charts and 7 cells available



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Sea level monitoring

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- 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



(Source: CNRS)



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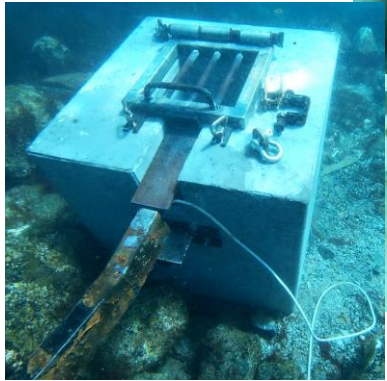
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Sea level monitoring

- 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)



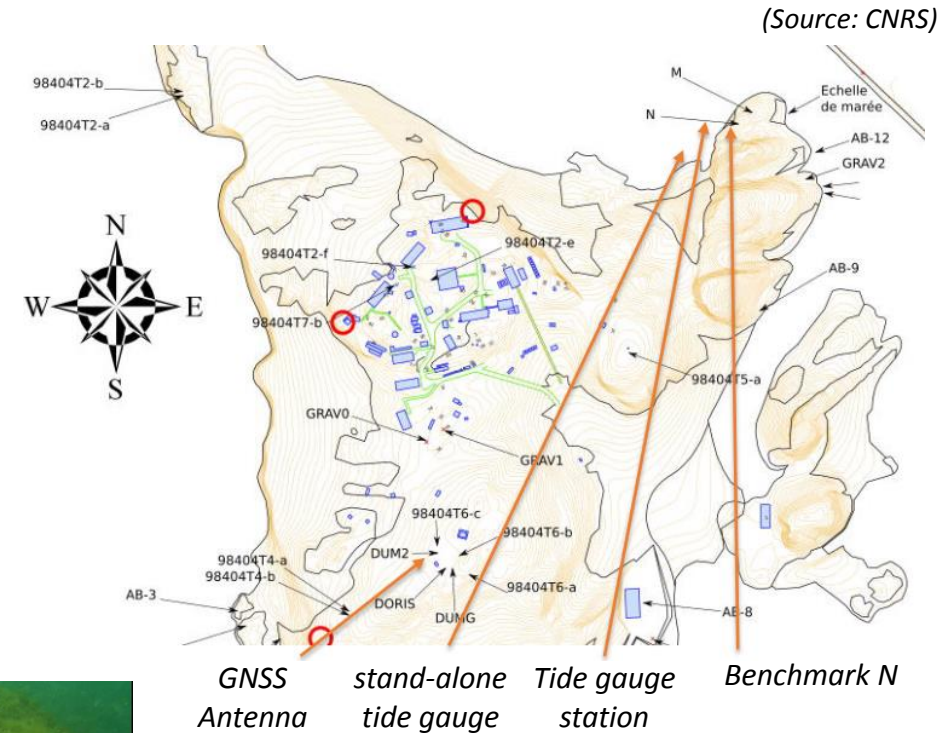
(Source: CNRS)

Tide gauge station



stand-alone tide gauge (Source: CNRS)

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(Source: CNRS)



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Relations with Other Organizations

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- 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 & diffusion.shom.fr

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



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Planned Activities for 2022-2023

International
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- New charts, new publications
NTR
- New surveys
NTR

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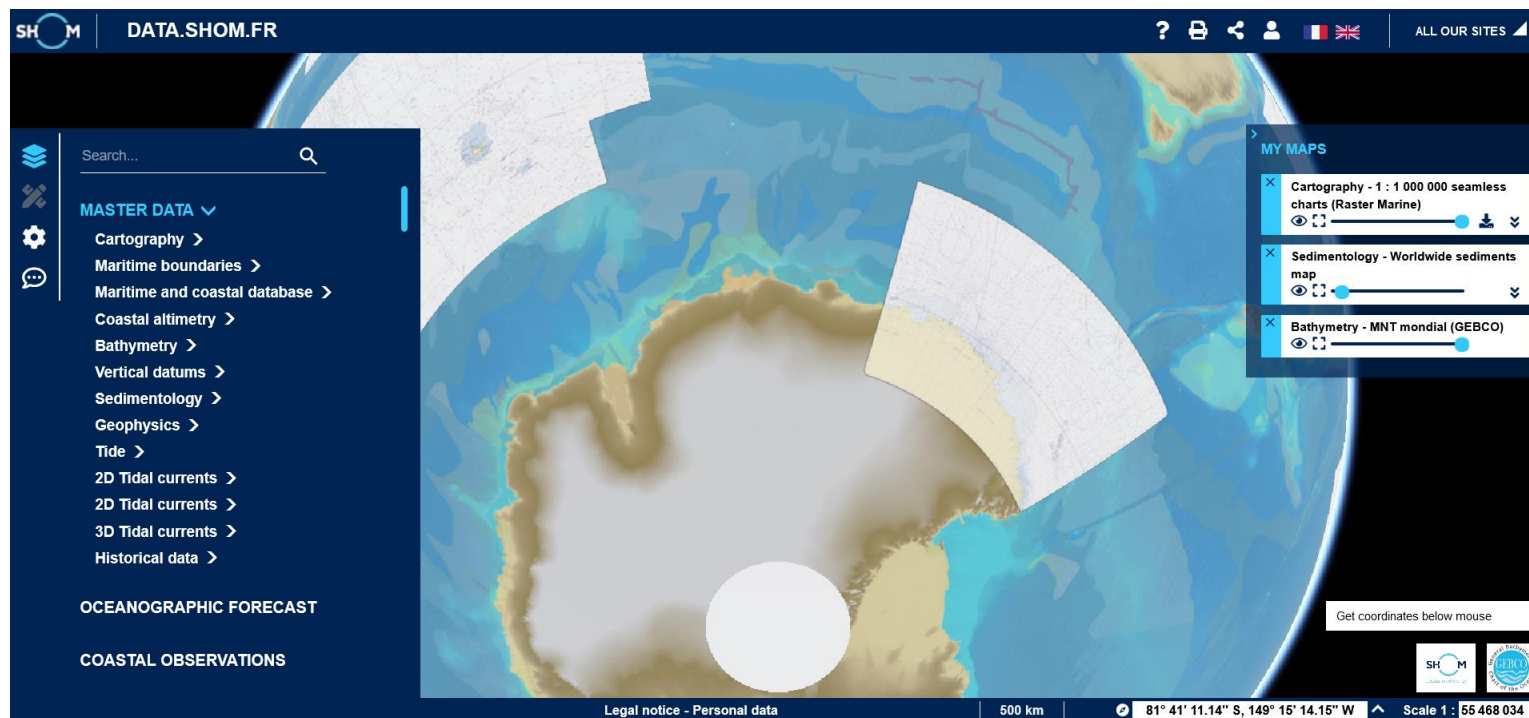
Marine Spatial Data Infrastructure

International
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Organization

- MSDI – 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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Future hydro-oceanographic capacities

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- **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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Capacity Building 1/2

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- **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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Capacity Building

2/2International
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- 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'océan en référence

TRAINING COURSES PROVIDED BY SHOM SCHOOL

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

*Formation carried out in partnership with the IHO, its validation allows you to obtain a bachelor's degree.

**Recognized training course at category B level by FIG-OHI-ACI International board

***Title of "Hydrographer, Supervisor" registered in the RNCP and certified at level II (bachelor's degree)

**Recognized training course at category A level by FIG-OHI-ACI International board. Engineering degree accredited by Cti and labelled EUR-ACE (accreditation of engineering courses in Europe)

SHOM school support to

L'ENSTA Bretagne

Average number of students

Duration

Admission

Curriculum

HYDROGRAPHIC ENGINEER**

36 months (+12 months for French military students)

based on diplomas or competitive exam

see: www.ensta-bretagne.fr

Leagues : BNTA : Ecole Nationale Supérieure des Techniciens Avancés - RNCP / Ministère National de la Culture Professionnelle - Cti / Commission des Études d'Ingénierie - EUR-ACE / Fédération Internationale des Géomètres - Organisation Hydrographique Internationale - Association cartographique internationale - HYDRO : HYDROgraphe - BS : Brevet Supérieur - C SUP HYDRO : Certificat Supérieur d'Hydrographie - C SYSRES-HOM : Certificat d'Administration Système et Réseaux d'Hydrographie - d'océanographie et de météorologie - GHOA : Groupe Hydro-Océanographique de l'Atlantique - UBO : Université de Bretagne Occidentale

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- Take note of this report



Thank you for your attention

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