20th Meeting of the South West Pacific Hydrographic Commission

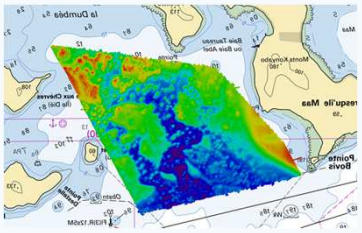
National Report by FRANCE

[SWPHC Member]

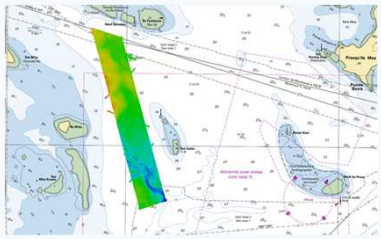
Main achievements during the year

- New-Caledonia : Several surveys of recommended tracks, accesses and passages have been carried out all around New-Caledonia, mainly in the lagoon

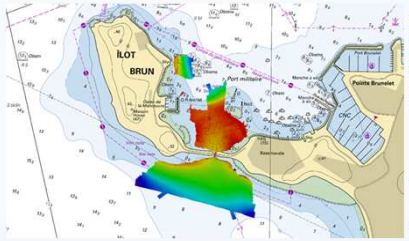
Great Northern lagoon



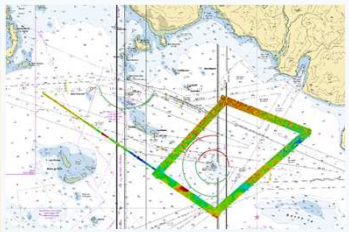
Dumbea bay



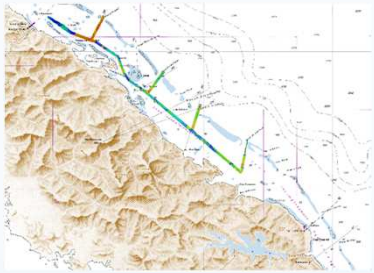
Signal islet



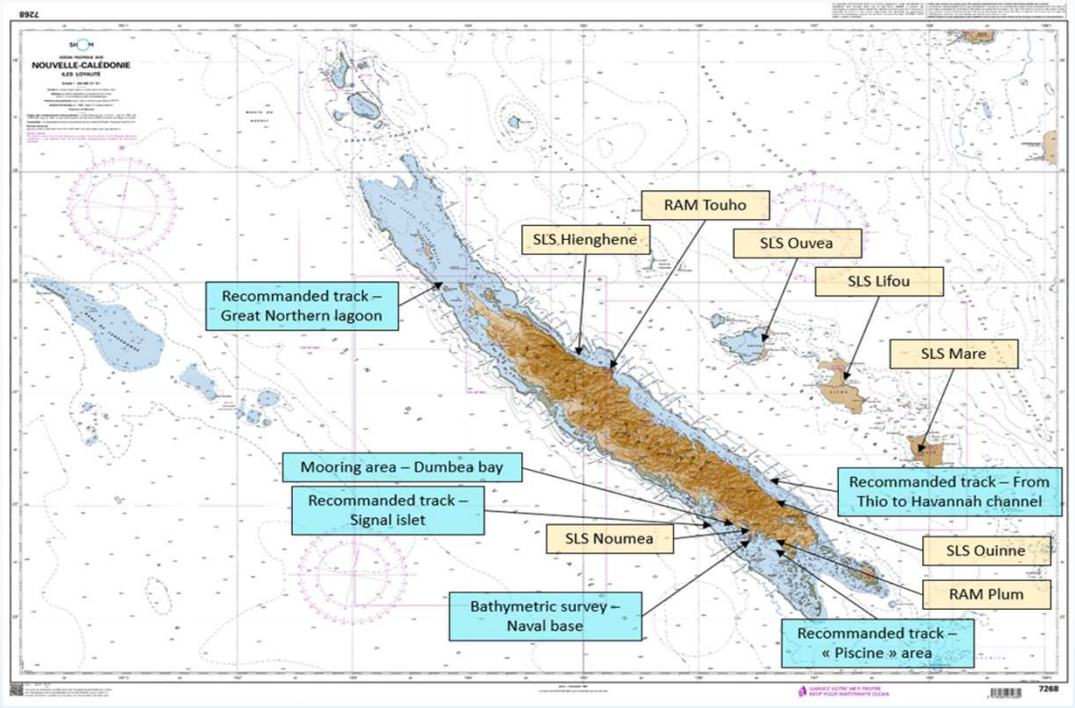
Noumea naval base



"Piscine" area



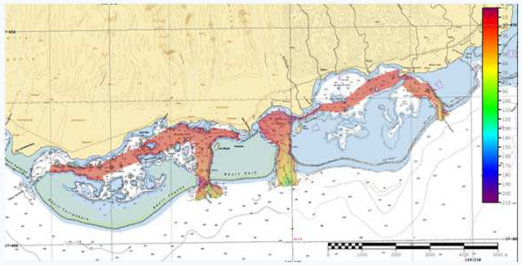
Thio to Havannah channel



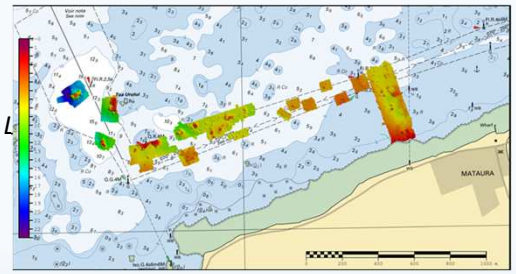
Locations of the hydrographic works realized in 2022 in New-Caledonia

Main achievements during the year

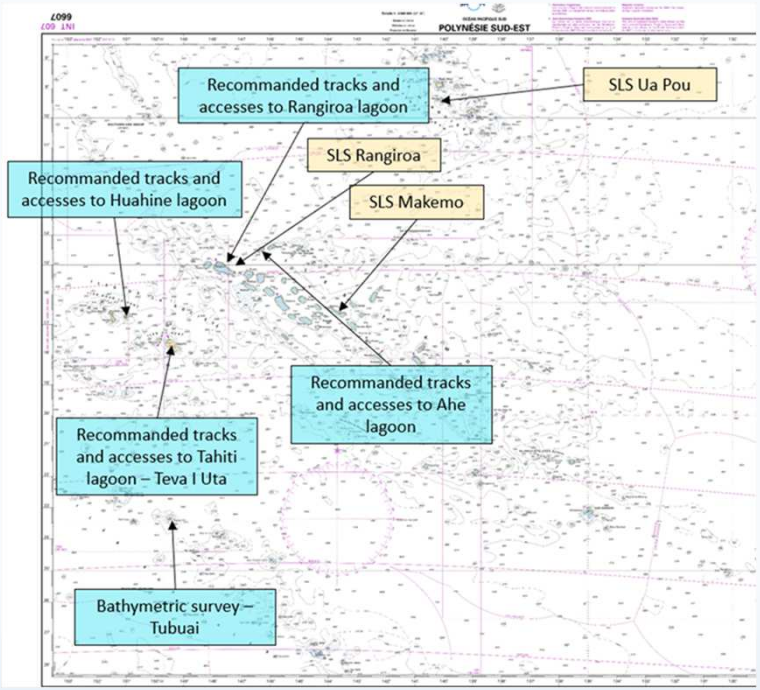
- French Polynesia : Several surveys of recommended tracks, accesses and passages have been performed all around French Polynesia



Tahiti lagoon (Teva I Uta village)

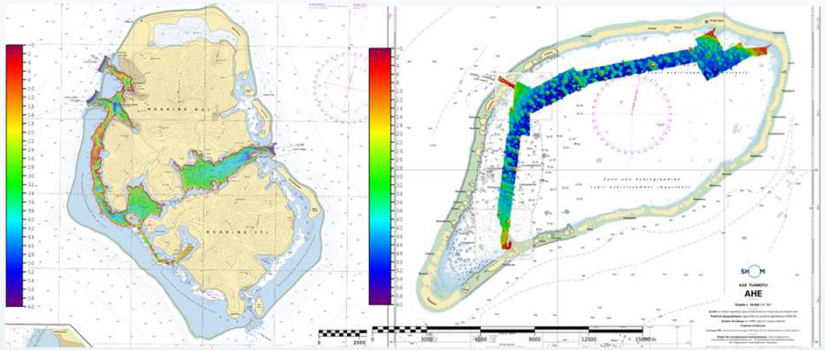


Tubuai lagoon



Locations of the hydrographic works realized in 2022 in French Polynesia

Rangiroa lagoon



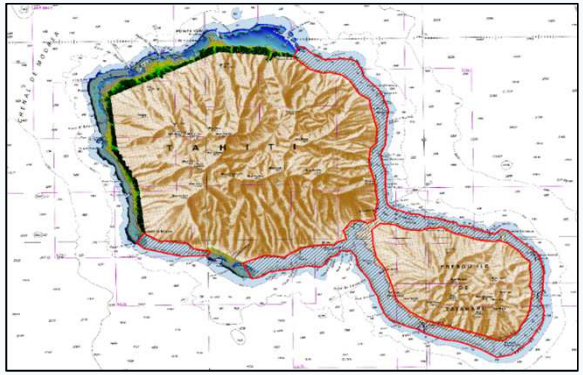
Huahine lagoon *Ahe lagoon*

Main Challenges regarding surveys

- **LiDAR surveys :**

❖ Project of bathymetric lidar survey in French Polynesia, that was due to launch in 2022, is pending administrative and financial approval from local authorities. Possible evolutions in the areas of interest

❖ Shom is preparing a contract with the French Polynesia government for an extended bathymetric Lidar survey covering the most populated high islands and is in contact with the authorities of New-Caledonia for similar operations.



Existing Lidar surveys in Tahiti (French Polynesia) and possible extension project

- **New opportunity ship :**

2023 will see the French Navy new patrol boat *Auguste Benebig* allocated to Noumea, New Caledonia. This brand-new ship is equipped with a through-hull well in which the EM2040p used by Shom in New Caledonia can be installed. This new survey capacity will be tested and set operational in 2023.

French Navy overseas patrol boat Auguste Benebig
(Source : Marine Nationale)

Main Challenges regarding surveys

- **Crowdsourced bathymetry – CSB**

- 22 November 2022, Publication of an instruction of the French Prime Minister on crowsourced bathymetry

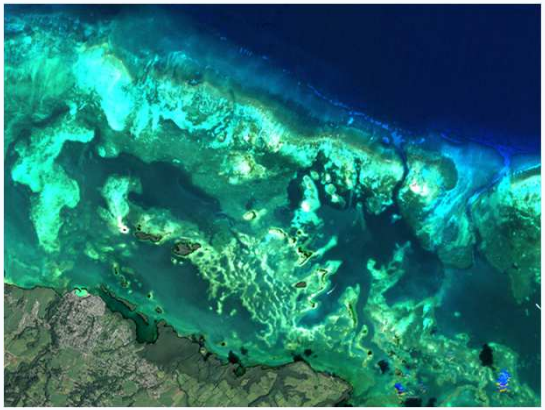
- Data from crowdsourced bathymetry in French waters are transmitted as a priority to the Shom, or alternatively to one of the lowing trusted third parties :
  - the European Marine Observation and Data Network EMODnet, via its "Data Ingeneering" portal EMODnet, via its Data Ingestion Portal (https://submission.emodnetingestion.eu/);
  - the IHO Data Centre for Digital Bathymetry (DCDB - https://www.ngdc.noaa.gov/iho/).

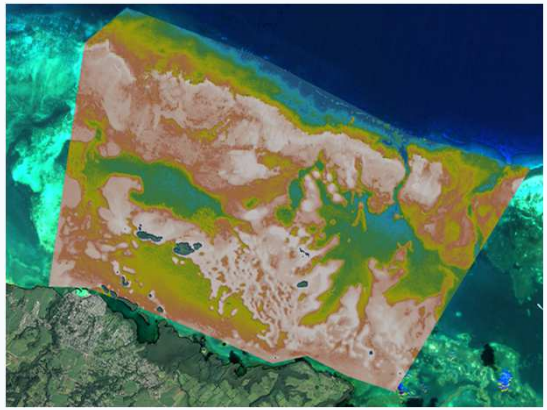
- CSB data : collected with **standard navigation instruments** (No MBES or other scientific equipment) during **routine maneuvers**

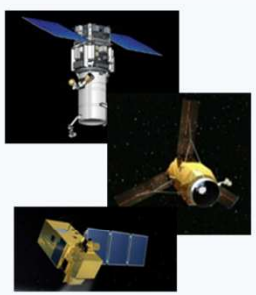
- CSB data in FR waters to be transmitted to Shom by the trusted nodes before dissemination. Only the validates data sets transmitted by Shom can be distributed through DCDB and EMODnet Bathymetry

Main Challenges regarding surveys

- **Development of new Satellite-derived bathymetry (SDB) modeling chain (1/2)**
  - 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)

Bathysat

Bathy product

Map of uncertainties

Metadata

Main Challenges regarding surveys

- **Progress of the Bathysat project 2/2**
  - 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

- 2023 : Performing of the industrialization part
- End of 2023: fully operational solution

Main Challenges regarding new charts

- **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

> 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

Main Challenges regarding MSI

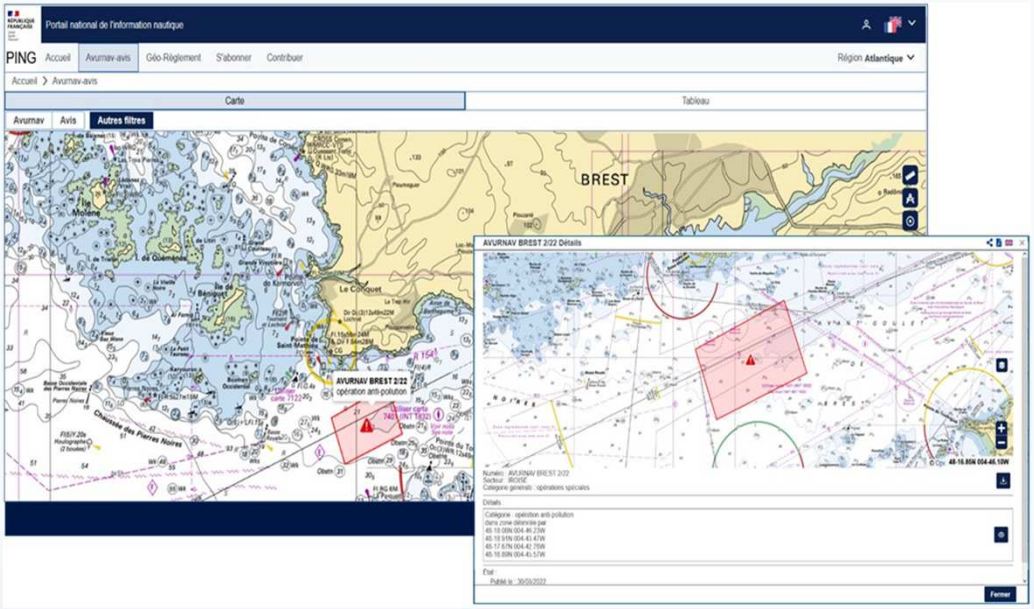
- **French National Nautical Information Platform: PING**

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



Thank you for your attention

Any question ?