MACHC23-03.5

23nd Conference of the Meso American - Caribbean Sea Hydrographic Commission

National Report by France (Shom)

[MACHC Member State]





 Shom received two third parties' surveys covering Guadeloupe harbours and French Guyana rivers.



Survey coverage of Cul-de-sac Marin, in Martinique (2003 & 2014, CETEF Martinique, FUCHS)



Overview of surveys in French Guiana (from 2018 to 2021, French Guiana Lighthouse and Beacon Service)





 As of 15th October 2022, Shom has produced 810 ENCs, of which 52 ENCs within region B.

With the last survey in French Guyana, the Shom ENC schema is now complete in region B.



Last Shom ENC coverage focus (UB 3-6) in French Guyana

• Two national paper charts has been edited since last year (Carabean sea and Saint-Barthelemy) and are freely availible through Shom's data portals





• MSDI : data.shom.fr portal

- Latest evolutions
- Wrecks and obstructions (edition)
- Aids to navigation (AToN) (edition extended to French overseas territories)
- Maritime Limits (new edition): Decree No 2022-20 of 12 January 2022 establishing the outer limit of the territorial sea and the outer limit of the exclusive economic zone of the French Guiana. Also available on maritimelimits.gouv.fr
- Overseas France coastline: former Histolit coastline restricted to the Overseas French territories
- Bathymetric measurements (edition)
- Coastal altimetry (Litto3D) Saint-Martin and Saint-Barthelemy: final version



Aids to navigation extended to the French overseas territories (data.shom.fr)





- 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 Maritimes)



Experiment of AUV HUGIN deployed from BHO Beautemps-Beaupré

- Rentals of HUGIN 6000m Superior have been contracted with Kongsberg to give some basic training to people in charge of the high-resolution deep-sea cartography and to prepare for autonomy.
- Other experiments are planned in the coming years with the aim of assessing definitively the USV DRIX performances and to challenge UAV in conditional operations.





New equipment

• Deployable hydrographic systems

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







International Hydrographic Organization

IHO

(1/2)

New equipment

• Light Hydrographic System (SHL)

Complete and compact system for conducting REA surveys Usedwithout 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)







International Hydrographic Organization

IHO

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 hydrooceanographic 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)



HO

MACHC Representation at IENWG

France is the current chair of the WG and represents the MACHC

IENWG brings to life the MoU signed in 2012 by the European Commission and the IHO which ensures a continuing liaison between the 2 sides in areas of common interest.

The IENWG is composed of representatives from RHCs. France represents the MACHC



www.msp-platform.eu



MSP Directive 2014/89/EU

- IENWG represented at the European Commission Expert subgroup on MSP
- Necessity to develop cooperation between EU MS for interoperability of data
- Some data still to be produced
- European Directive 2019/1024 of 20 June 2019 on Open Data and the re-use of Public Sector Information
- New concept: High Value Dataset (HVD)
- Thematic categories listed in the directive (Geospatial, Earth observation & environment, meteorological, ...)
- Implementing Regulation will define the list of HVD belonging to these categories
- Potential impact on resources of EU national hydrographic offices





French National Nautical Information Platform: PING

Shared information system for the transmission, formatting, digitisation 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





International Hydrographic Organization

IHO

• Shom strategy for the transition from S-57 to S-101

Shom's objective is the availability of the entire ENC portfolio in S-101 as soon as the S-100 ECDIS are operational and available

The different stages:

- Prior to any S-101 production: migration of S-57 source databases to S-101 compliant databases (preferred automatic conversion or ad hoc processing, verification, compliance tests)
- Start publishing S-101 NCTs from mid-2025. Target: publication of all ENCs in S-101 by 1 January 2026
- Production of S-57s by automatic conversion of S-101 NCBs during the dual fuel period (possibly delegated to RENC tbc)
- Maintain in parallel the portfolio of paper cards compliant with S-4 standards and developed from S-101 source databases





- Development of new Satellite-derived bathymetry (SDB) modeling chain
 - 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)

International

Hydrographic Organization

IHO



• Progress of the Bathysat project

- 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





Top Plans that affect the region

(Charts, surveys, training, other)

• Charts

- 2022/2023 : 5 new editions planned (FR6738, FR6892, FR7337, FR7381, FR7482)

• Surveys

- French Antilles > Opportunity works around Martinique & Guadeloupe in 2022-2023
 Next survey campaign in 2024
- French Guyana > Next survey campaign in 2024
- Clipperton Islands > No systematic planned surveys, only opportunity works

• Tide gauge network

- renewal of the tide gauge of Point-à-Pitre and Fort-de-France at the end of November 2022



