



RÉPUBLIQUE
FRANÇAISE

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L'océan en référence

3.2B NATIONAL IMPLEMENTATION STRATEGY

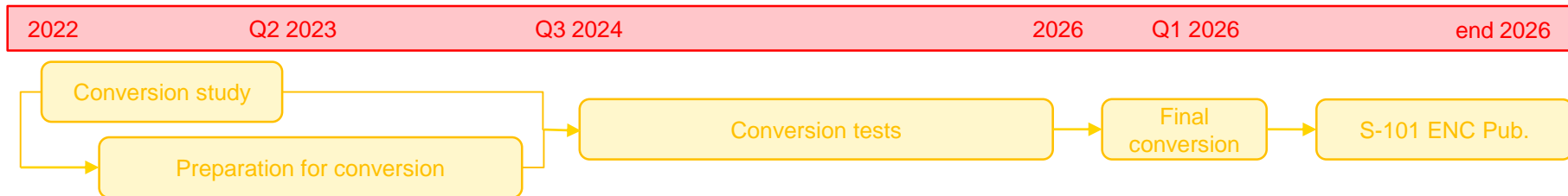
S-101 - ENC

Shom's plan for S-101

3 objectives for S-101:

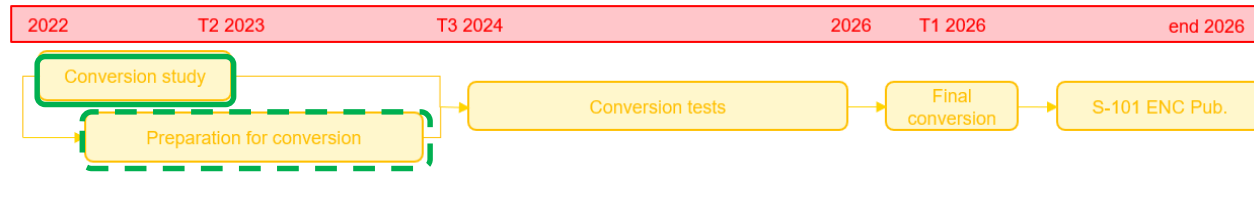
- Produce data directly in S-101 (no more S-57) ;
- Publish S-101 Shom ENC's (about 850 ENC cells) when S-100 (dual fuel) ECDIS becomes available ;
- Produce S-57 ENC's (ENs and ERs) from S-101 databases (ENs and ERs) during the DF period (in-house or delegation).

Shom's Roadmap



- Work on conversion (included Caris HPD database conversion) until 2026 :
→ Conversion rules ; software tools and process in S-101 ; database preparation
- Conversion of Caris HPD database in S-101 Q1-2026
- Publication of S-101 ENC until end 2026

Note : update (ER) of S-57 and S-101 ENC will be ensured during the conversion process



Shom's progress

- Conversion study (Done)**

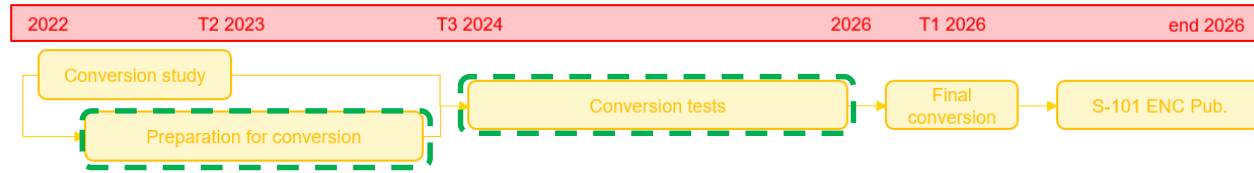
The objects and attributes used for cartography at Shom have been studied one by one to see how they will be converted from S-57 to S-101 (rules based on the IHO S-57 to S-101 Conversion Guidance).

| S-101 Feature (S-57) | S-101 Attribute (niv. 0) | S-101 Attribute (niv. 1) | Action CA | Commentaire CA | Etat |
|----------------------|--------------------------|-----------------------------|-----------|--|---------|
| Fairway (FAIRWY) | Status | | Oui | STATUS = 2 (occasional) ou 5 (periodic) interdit pour cet objet en S-101. | A faire |
| Fairway (FAIRWY) | Traffic Flow | | Non | Peuplé à partir de l'attribut S-57 TRAFIC. | S/O |
| Fairway (FAIRWY) | Vertical Uncertainty | | Non | Attribut complexe. | S/O |
| Fairway (FAIRWY) | Vertical Uncertainty | Uncertainty Fixed | Non | Peuplé à partir du SQUACC. | S/O |
| Fairway (FAIRWY) | Vertical Uncertainty | Uncertainty Variable Factor | Non | Peuplé vide lors de la migration en S-101. | S/O |
| Fairway (FAIRWY) | Scale Minimum | | Non | Scale Minimum peuplé à partir du SCAMIN. | S/O |
| Fairway (FAIRWY) | Information | | Non | Attribut complexe. | S/O |
| Fairway (FAIRWY) | Information | File Locator | Non | Pas d'équivalent S-57. Ne sera pas peuplé lors de la migration. | S/O |
| Fairway (FAIRWY) | Information | File Reference | Non | Aucun TXTDSC / NTXTDS en base | S/O |
| Fairway (FAIRWY) | Information | Headline | Non | Pas d'équivalent S-57. Ne sera pas peuplé lors de la migration. | S/O |
| | | | | Mapping S-57 vers S-101: | |
| | | | Oui | Pour les attributs NINFOM, NOBNM et NTXTDS, venir renseigner l'attribut S-101 Information > Language à la valeur « fra » lors de la migration. | A faire |
| Fairway (FAIRWY) | Information | Language | Oui | Prendre les NINFOM / NINFOM de plus de 300 caractères pour les passer à moins de 300 caractères. | Fait |

- Preparation for conversion (in progress)**

- Shom specific attributes to be added to the Shom S-101 Catalog
- ajustements to be made in Caris HPD S-57 to S-101 conversion file (and S-101 to S-57)
- QC test was implemented in Caris HPD to check conformity for S-101 migration

Next steps



- **Software tools**

- The tools used to produce charts (Caris HPD and other Shom tools) are to be tested in S-101, and adapted to S-101 if required.
- The entire process of producing an S-101 ENC from an S-101 database needs to be studied and validated.

- **Caris HPD Source database migration tests**

- 3 migration tests planned
- First one in Oct. 2024.

S-102 – Bathymetric Surface
S-104 – Water level information
S-111 – Surface currents

Plans for S-102, S-104 et S-111

- Shom already produces and diffuses digital bathymetric models, predictions of currents and water levels in different digital formats ;
- Shom is working to determine the needs of future users of these products and to define their characteristics so that they provide real added value.
- Shom will provide operational S-102, S-104 et S-111 in 2026 (when S-100 ECDIS becomes available).

S-124 – Navigational Warnings French PING project

Towards the production of S-124 navigational warnings

OBJECTIVE

Digitize nautical information

French Government's directive (20th April 2020):

“nautical information shall be digitised whenever possible in order to facilitate its larger diffusion and integration into client systems (ships navigation systems, user systems, etc...). Nautical information data are geo-localised, formatted and supplied following applicable standards and recommendations in order to be interoperable and accessible according to standard exchange protocols.*

(): In particular, the standards and recommendations developed by the IHO in the framework of the World Wide Navigational Warning Service”*

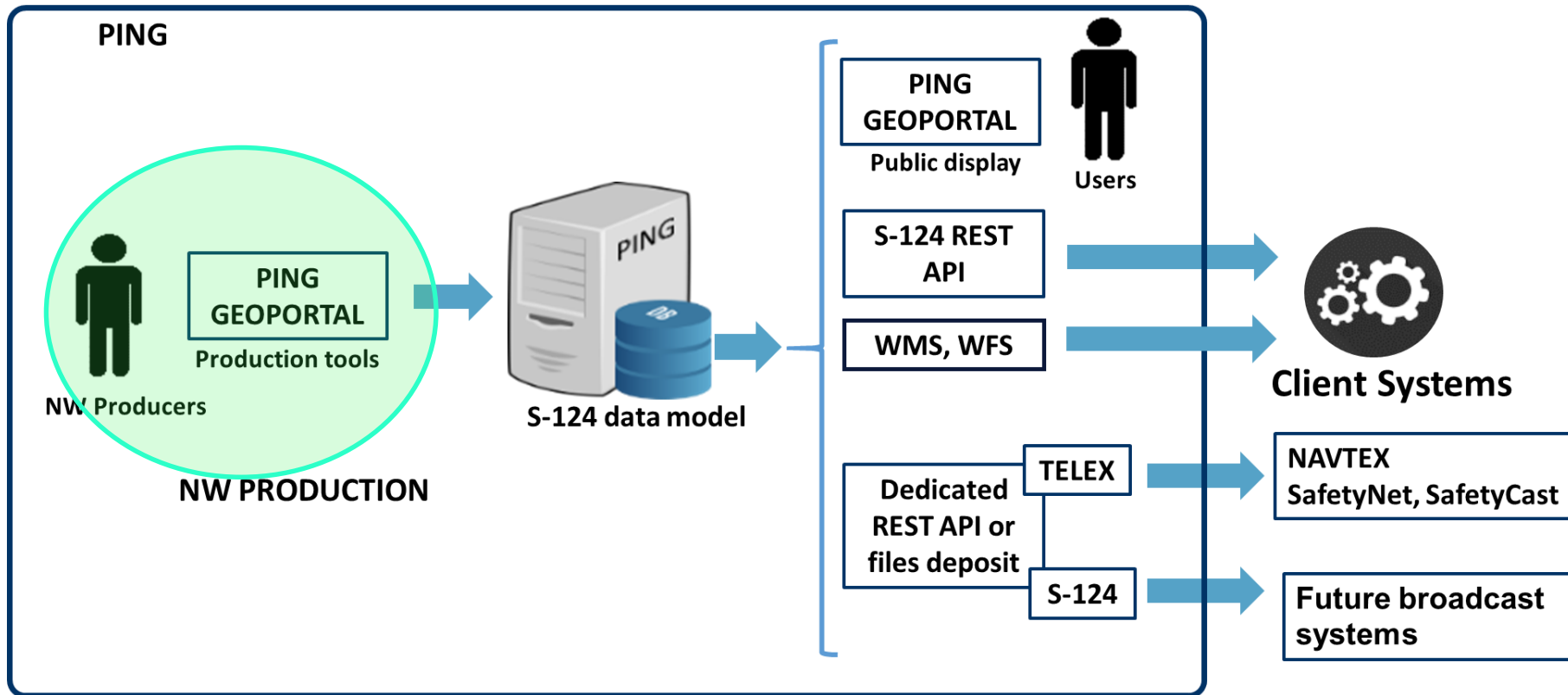
With the creation of a national platform for nautical information

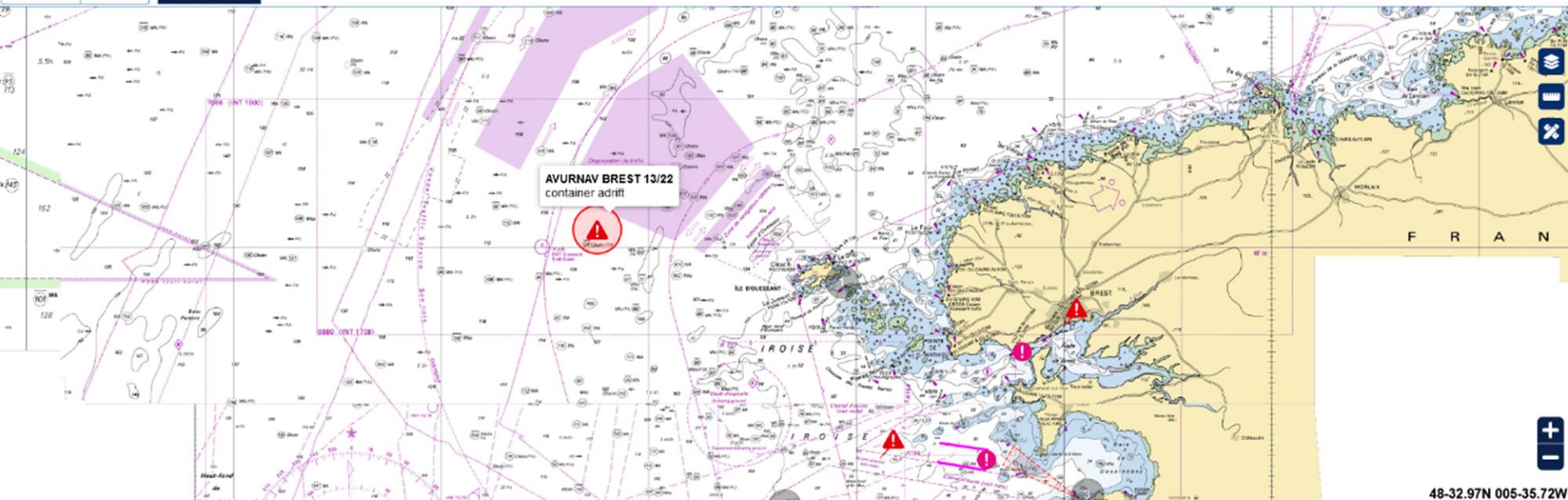
“a shared information system for the transmission, formatting, digitization and posting on Internet of nautical information.”

THE PROJECT

- Launched in 2020 with the support of the European Union funds Interreg (MED OSMOSIS project) and European Maritime and Fisheries Fund (EMFF).
- Following a successful demonstration phase in 2016-2017 reusing Danish Maritime Authority MSI-NM demonstrator.
- Subject: build a web platform with a portal for humans and APIs for systems.
- 3 functional modules:
 - **Navigational warnings:** production and delivery of navigational warnings
 - **Transmission of source information:** way for the stakeholders (maritime services and users) to contribute to the nautical information.
 - **Geo-regulation:** delivery of geo-maritime regulation produced by French authorities
- Creation a mobile app associated to the platform.

NAVWARNINGS MODULE OVERVIEW



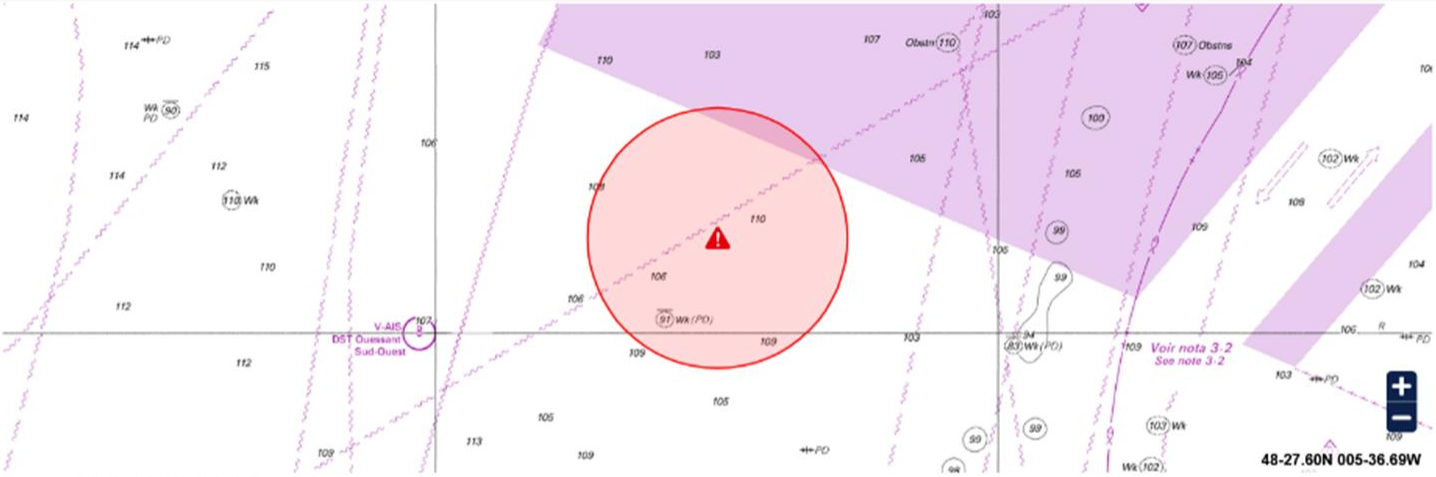


48-32.97N 005-35.72W

National nautical information portal

PING Home Avurnav

AVURNAV BREST 2001/22 Details



Number : AVURNAV BREST 13/22
General area : IROISE
Category : drifting hazards

Details :

container adrift
in area within 2.30 M radius of 48-31 68N 005-37 49W

Status :

Published from : 2022/08/18 11:51:37 UTC +02:00

48-27.60N 005-36.69W

48-31.18N 005-39.23W

Close

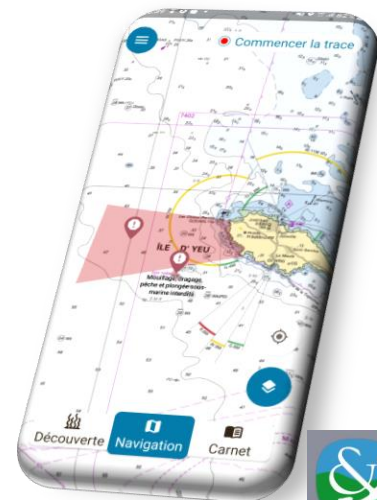
Sitemap Legal notice CGU Accessibility Collection of opinions

WHERE WE STAND

- Major software developments completed (based on a draft version of S-124)
- System temporary hosted at Shom (no high availability)
- System and operators running in since December 2022
- Data capture of existing data completed (existing navigational warnings, notices to mariners, geo-regulations)
- **Today, in French mainland, most of the NWs are made by using PING**

NEXT

- PING to be consolidated with S-124 ed. 1 May 2023
 - Finalized the delivery (file based Exchange Sets)
- New cyber standard SECOM (IEC 63173-2) to be considered
 - Secured communication and standardized REST API
- Operational hosting by Ministry of transport with high availability
- Connection to the new NAVTEX/NAVDAT stations
- PING open to the public in 2024 in mainland France, then in French overseas territories
- With Nav&Co app associated
- PING will be available in open source



S-128 - Catalog

WHERE WE STAND

- Studying the possibility that S-128 might be produced by RENC for S-1xx (PRIMAR).
- Ensure availability of S-1xx product metadata in product CATALOG.xml (in accordance with product specifications) required for the production of S-128 catalogs.

Experimentations

S-100 across the Channel

Project as a risk assessment on the Dual Fuel mode of ECDIS

High level goals

- Develop S-101/102/104/111/S-124 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.



Test data sets

The screenshot shows the SHOM website interface. The top navigation bar includes the SHOM logo, the URL 'DIFFUSION.SHOM.FR', and utility icons for location, help, search, home, and user profile. A 'TOUS NOS SITES' link is also present. A left sidebar contains a search bar and a menu with categories: CARTES MARINES, OUVRAGES, MARÉE & COURANTS, GAN & AVERTISSEMENTS DE NAVIGATION, DONNÉES DE RÉFÉRENCE, OCÉANOGRAPHIE, SERVICES NUMÉRIQUES, and EXPERTISES & FORMATION. The main content area is titled 'Jeux de donnée test' and lists three data sets:

- S-101 : Cartes électroniques de navigation**

Des ENC de test, conformes à la S-101, ont été produites pour aider les fabricants de systèmes embarqués (ECDIS, ECS, ...) au développement et à l'utilisation pratique de ces données de navigation. Ces produits sont conformes à la norme S-100 de l'OHF et couvrent la zone maritime des approches de Saint-Malo et des Iles Anglo-Normandes. La couverture des données est identique au schéma existant des ENC FR S-57 et ces dernières sont également mises à disposition. Ces produits ne doivent être utilisés qu'à des fins de test et ne doivent pas être utilisés pour la navigation.

 - Format S-101 : binaire ISO 8211. Donnée vectorielle.
 - Zone couverte : Saint-Malo et les Iles Anglo-normandes.

[Télécharger le jeu test S-101 \(ENC.FR.zip\)](#)
- S-102 : Surface bathymétrique**

Le jeu de donnée test S-102 contient deux fichiers : un fichier xml de métadonnée et un fichier .h5 de données bathymétrique haute résolution. A chaque nœud de la grille est renseignée la profondeur et son incertitude. L'incertitude est ici renseignée à 0 pour tous les nœuds.

 - Format S-102 : binaire HDF5, autodescriptif. Donnée matricielle (raster).
 - Zone couverte : Abords de Saint-Malo

[Télécharger le jeu test S-102 \(102STMALO_5M.zip\)](#)
- S-111 : Courants de surface**

Le jeu de donnée de test S-111 contient un fichier .h5 de donnée. A chaque nœud de la grille est renseigné la vitesse en nœud et la direction du courant en degré par rapport au nord. Le fichier contient les prévisions de courants de surface issues du modèle TELEMAC, pour la période du mois de septembre 2021 pour une résolution spatiale de 1,3 km, toutes les heures.

 - Format S-111 : binaire HDF5, autodescriptif. Donnée matricielle (raster).
 - Zone couverte : Abords de Saint-Malo

[Télécharger le jeu test S-111\(111SAINT_MALO.zip\)](#)

Retours d'expérience

Le Shom est intéressé par la collecte de retours des utilisateurs, dans le but d'améliorer la qualité de ses produits et contribuer à l'élaboration des versions opérationnelles des normes via les groupes de travaux de l'OHF. N'hésitez pas à nous contacter à cette adresse : retours_s100@shom.fr