

Paris, le 5 mars 2012

N° 006 SHOM/DMI/REX/NP

SERVICE HYDROGRAPHIQUE
ET OCÉANOGRAPHIQUE
DE LA MARINE

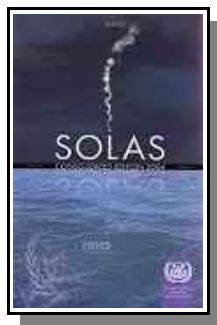
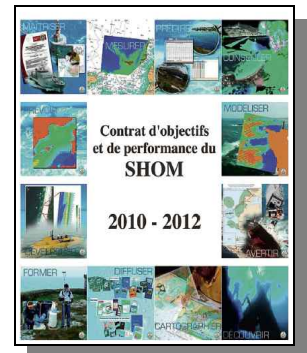
DIRECTION DES MISSIONS
INSTITUTIONNELLES ET DES
RELATIONS INTERNATIONALES

Dossier suivi par
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FRENCH NATIONAL REPORT TO THE 12TH MEETING OF THE NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION

1. Hydrographic Service: General

SHOM, the French hydrographic service, was created in 1720 and used to report to the French Navy. It became a public service in 2007 with goals and budget set by a board of directors composed of representatives from various French ministries and organisations. A contract of targets and performance between SHOM and the Minister of Defence covering 2010-2012 will be superseded to cover 2013-2016.



SHOM abides by the rules set for France by the International Maritime Organisation, and in particular by the SOLAS convention, specifying the obligation for coastal States to provide navigators with hydrographic services. SHOM is dedicated to guaranty the quality and the availability of information describing marine physical environment, along the coast and offshore, while coordinating its collection, filling and release. SHOM continuously ensures that public, civilian and military needs are satisfied at the lowest possible cost.

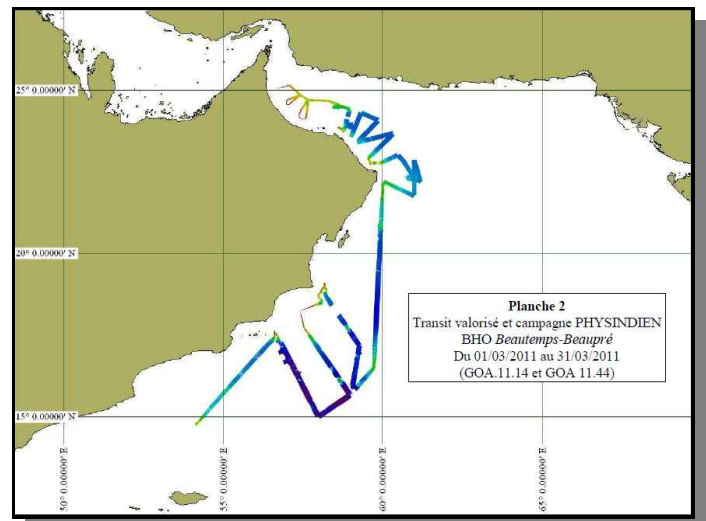
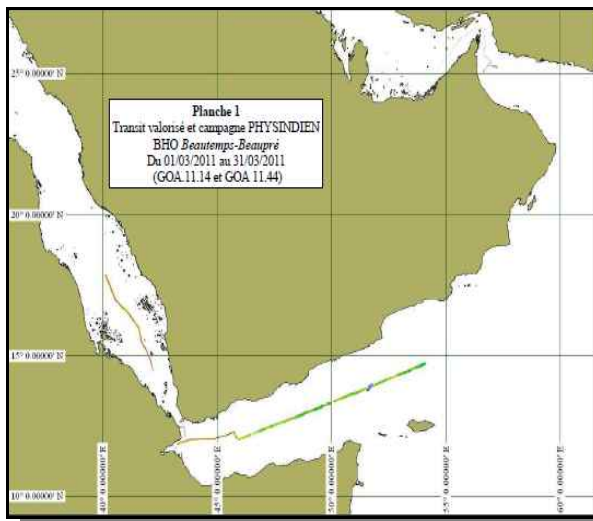
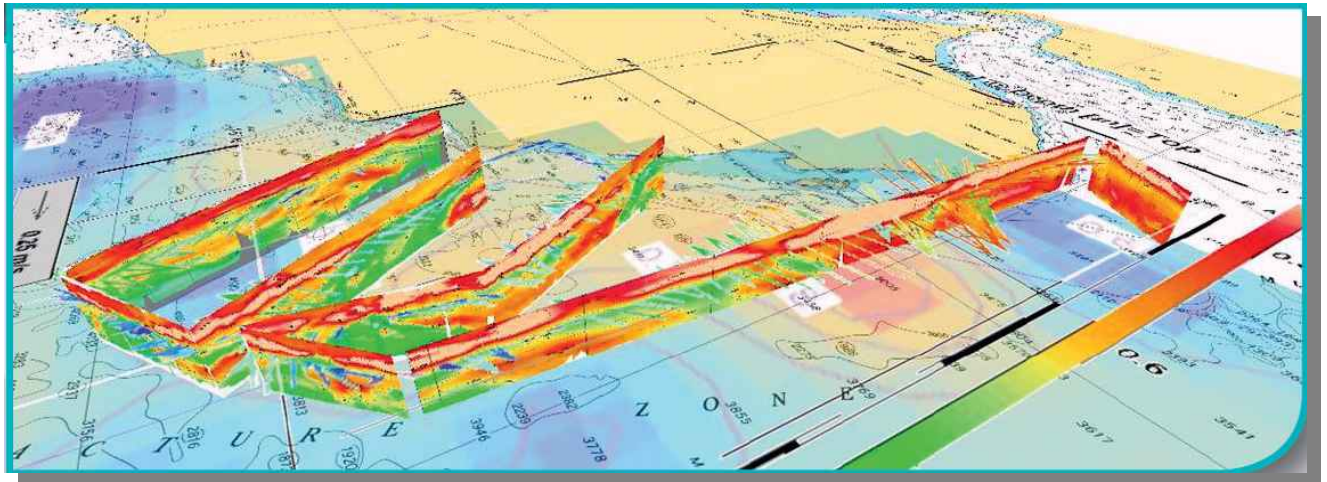
SHOM fulfils the missions of a national hydrographic service, supports defence and provides expertise to maritime policies. As a public service, SHOM can interact with other French geography, meteorology and oceanography specialists as well as with its European and international counterparts.



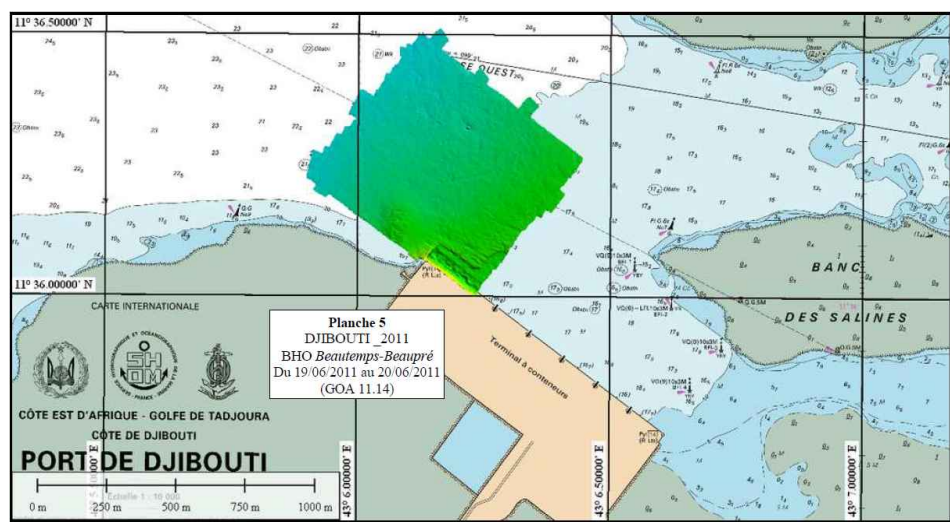
2. Surveys

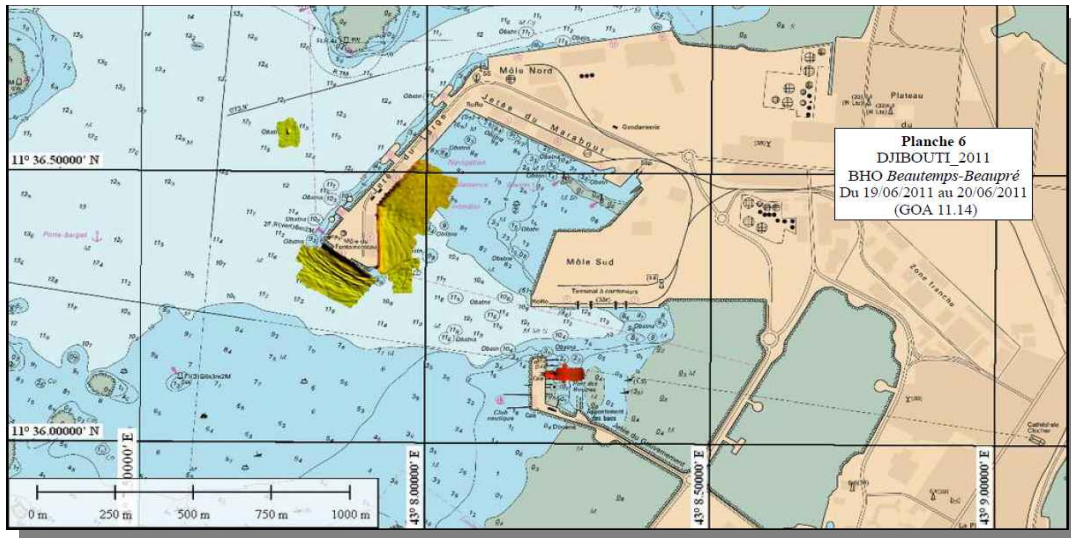
2.1. Coverage of new surveys

Beautemps-Beaupré survey ship conducted in March 2011 the “Physindien” campaign studying the movement of water masses in the Aden gulf and along the Oman coast :

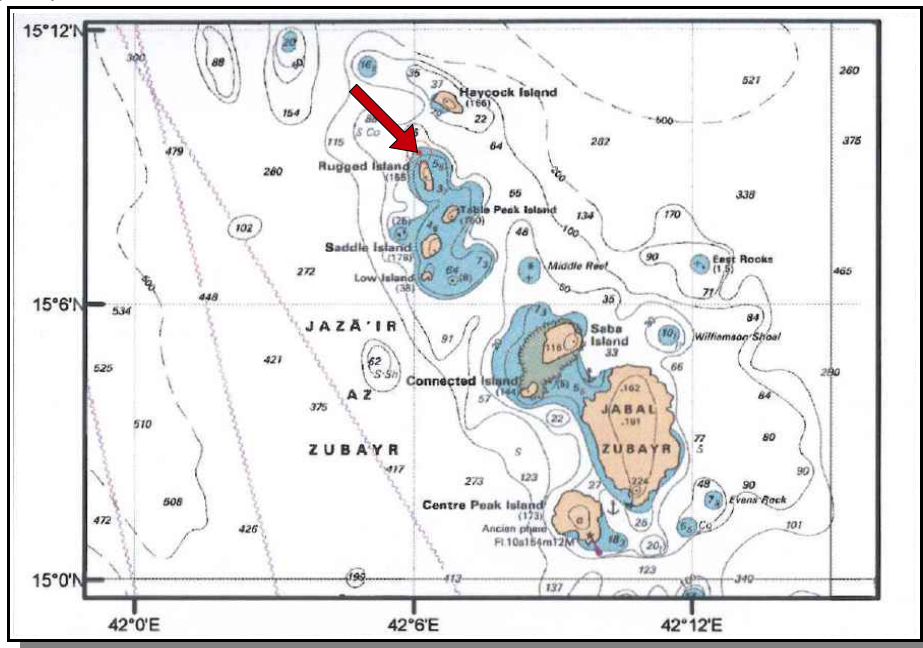


In the NIOHC region and according to the bilateral agreement with the Republic of Djibouti, France is responsible for charting the Djibouti harbour and its approaches. In June 2011, the following surveys were conducted :



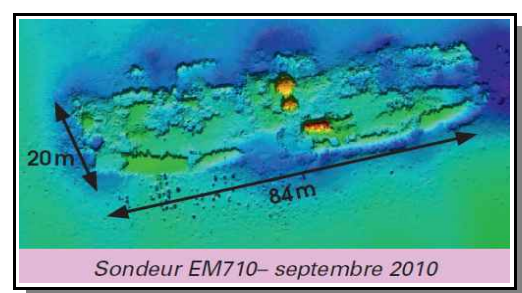
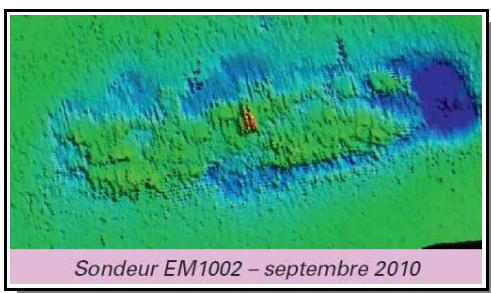


In Yemen territorial waters, a new island appeared due to the submarine volcanic activity in the surroundings : it is located 0,3 miles North of the Rugged Island at the approximate position of 15° 09,3' N and 042° 06,1' E. Where the island now stands, there used to be 20 meters of depth. Though the island is outside maritime traffic, a preliminary Notice to Mariners was published by SHOM on 14th January 2012 :



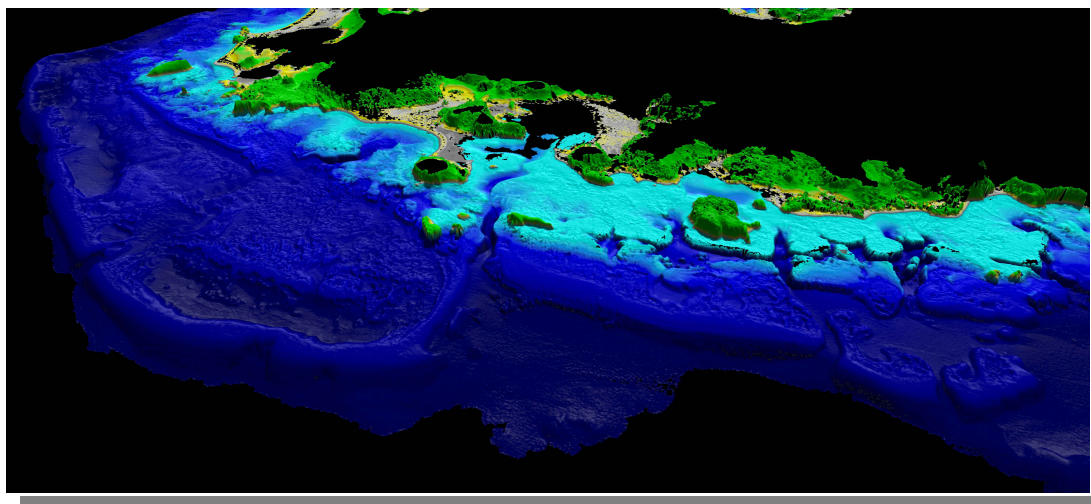
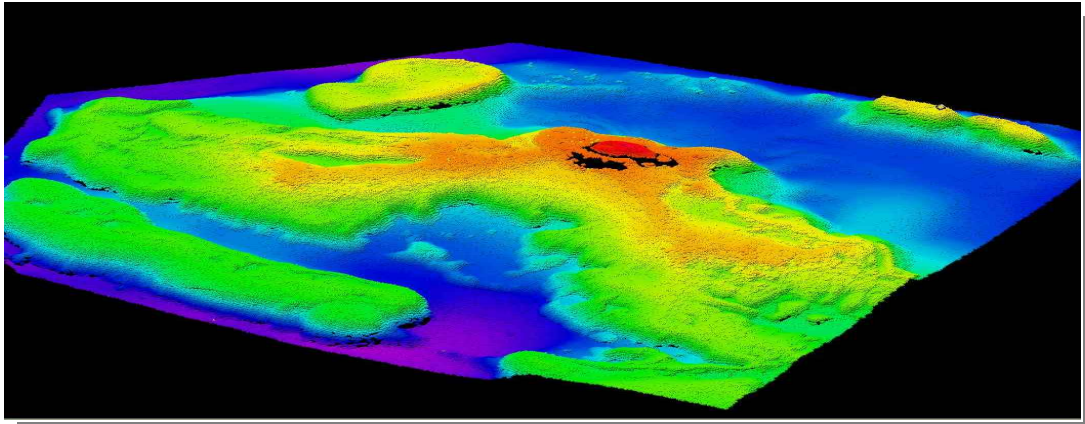
2.2. New technologies and /or equipment

The Kongsberg multibeam echo-sounder EM1002 on the hydrographic ship *La Pérouse* was replaced during the summer 2011 by the EM710. This system will allow the ship to perform deeper surveys, up to 1 600 meters, with an increased resolution. The data quality achieved is presented below on the images of the *Katingo* wreck off the French coast at a depth of 60 meters :



The French National Geographic Institute (IGN) and SHOM were tasked by the Prime Minister to join efforts to produce a seamless, precise topographic and bathymetric model, of the entire French coast.

The Litto3D® project was then created to meet more than hundred requirements expressed by coastal managers concerned with the protection and exploitation of the littoral, and by users of geo-referenced data. Hereunder are the results of combined bathymetric and topographic LIDAR:



Should you require more information please contact litto3d@shom.fr

2.3. New ships

NTR.

2.4. Problems encountered

NTR.

3. New charts & updates

3.1. ENC's

SHOM's collection of ENC's has reached the number of 341 in February 2012. The approximate rate of production is of 40 ENC's per year. The full collection should eventually reach a figure around 900 ENC's.

In line with the WEND recommendations and guidelines, France produces its small scale ENC cells as closely as possible to INT chart schemes.

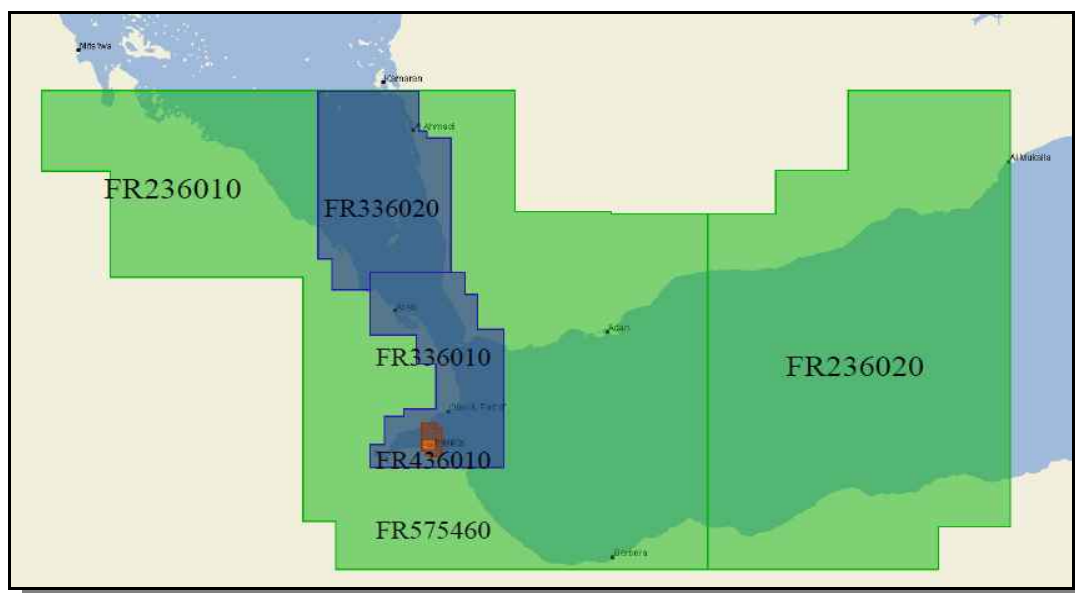
One ENC has been edited (new cell name) in the NIOHC region since the last conference. Another ENC is planned to be produced in 2012 as a replacement for the existing cell in Djibouti.

Cell	Area	Usage Band	FR paper chart number	Observations
FR575460	Djibouti harbour	5	7546	Produced in 2011
FR475470	Approaches to Djibouti	4	7547	FR475470 replaces FR436010, planned in 2012

The status of ENC production in the area is:

Usage Band	Produced Cells	Planned Cells	%
1	0	0	N/A
2	2	2	100
3	2	2	100
4	1	2	50
5	1	8	12,5
6	0		
Total	6	14	43

Following is an extract of the online PRIMAR catalogue <http://www.primar.no> regarding the French ENCs available in the NIOHC region:



3.2. ENC Distribution method

All French ENCs are distributed to End User Service Providers through PRIMAR RENC. France is providing its support to develop a RENC-to-RENC cooperation concept, within the WEND-WG, following the tasks carried out by the IC-ENC-PRIMAR Cooperation Committee.

3.3. RNCs

NTR.

3.4. INT charts

Planned for 2012-2014:

N° National	N° INT	New chart or new edition	Scale 1:	Title
7547	7115	NC	50 000	<i>Abords de Djibouti</i>

N° National	N° INT	New chart or new edition	Scale 1:	Title
7519	7114	NE	200 000	<i>Bab El Mandeb et Golfe de Tadjoura</i>

Scale	Produced INT charts	Planned INT charts	%
Small (<1/1 000 000)	0	0	N/A
Medium	3	3	100
Large (>1/100 000)	2	2 ¹	100
Total	5	5	100

3.5. National paper charts

See item 3.4.

3.6. Other charts, e.g. for pleasure craft

NTR.

3.7. Problems encountered

As many other IHO member states, France is responsible for collecting nautical information and surveying areas that would otherwise remain uncharted. It happens from time to time that SHOM only learns by accident of surveys performed by private companies, or even other hydrographic offices, in its areas of charting responsibility, and has to insist to obtain communication of IHO-compliant data relevant to INT charts and nautical information.

In the interest of the international maritime community, it is reminded that survey results should be automatically communicated to the IHO recognised and primary charting authority (in accordance with M-3 resolution 1/2006 and S-4 resolution A-402.1 and B-635.4).

In addition, provision should be made in all contracts awarded to private survey companies to the effect that hydrographic data pertinent to the safety of navigation be communicated to the IHO recognised charting authority.

4. New publications & updates

4.1. New Publications

NTR.

4.2. Updated publications

NTR.

4.3. Means of delivery

SHOM aims at generating by digital means its entire paper production. This should be achieved by using international standards such as XML and following closely the recommendations of experts such as the IHO Standardization of Nautical Publications Working Group (SNPWG) in which SHOM participates.

¹ The chart INT7115 (FR7520) will be replaced by a new chart INT7115 (FR7547) because of the publication of the new chart INT7120 (FR7546).

4.4. Problems encountered

An important regulation corpus has been developed for the establishment and use of ENC's while the equivalent standardisation for nautical books is still lagging. As a result, the rules of use of these documents are not clearly established.

5. MSI Existing infrastructure for transmission

5.1. New infrastructure in accordance with GMDSS Master Plan

NTR.

5.2. Problems encountered

NTR.

6. C-55 Latest update

The C-55 database for French areas of responsibilities is normally updated by SHOM on a yearly basis. Separate entries are now available for French areas in each IHO region.

7. Capacity Building Offer of and/or demand for Capacity Building

7.1. Training received, needed, offered

Initial training capabilities provided by SHOM, and described hereunder, are also presented in its yearly report available on www.shom.fr.

SHOM
L'océan à la carte

FORMATIONS ASSURÉES PAR L'ÉCOLE DU SHOM

	BS HYDRO [®]	C SYSRES-HOM	C HYDROSUP	TSEF (PREP CARTO [®])
Effectif moyen	8 OM / 1 à 2 étrangers	3 à 5 OM HYDRO	3 à 5 OM HYDRO	1 à 5 stagiaires
Durée	19 mois	9 mois	3 mois	12 mois
Admission	sur dossier	sur dossier	sur dossier	sur titre ou concours
Cursus	<ul style="list-style-type: none"> formation maritime cours spécifique d'hydrographie (dont stage EKA) stage pratique en GHO 	<ul style="list-style-type: none"> formation théorique et pratique stages pratiques au SHOM et en GHO 	<ul style="list-style-type: none"> formation technique approfondie 	<ul style="list-style-type: none"> formation générale formation technique de spécialité étude technique

Concours de l'école du SHOM à L'ENSTA Bretagne^{*}**

Effectif moyen	2 IETA et 12 étudiants civils élèves étrangers
Durée	12 mois
Admission	sur titre ou concours
Cursus	<ul style="list-style-type: none"> service national tronc commun branche Env. Marin option hydrographie

***Formation homologuée en catégorie A par le comité FIG-CHS-ACI diplôme ingénieur reconnu par la CTI

7.2. Status of national, bilateral, multilateral or regional development projects with hydrographic component

For the many countries benefiting from French support to meet the hydrographic services requirements spelled out by the SOLAS convention, France has implemented a mechanism of gradual transfer of responsibilities through State-to-State administrative arrangements. This mechanism relies

on training at SHOM facilities and the formalisation of the respective responsibilities for maritime safety information, hydrographic and charting activities.

7.3. Definition of bids to IHOCBC

NTR.

8. Oceanographic activities

8.1. GEBCO/IBC's activities

NTR.

8.2. Tide gauge network

SHOM is the French national coordinator and reference authority in the field relating to the observation, management and release of sea level data.

These missions are carried out under the REFMAR programme. Real time and processed tide gauge measurements are now accessible on the web <http://refmar.shom.fr> in all areas around the world under French jurisdiction, as shown hereunder:



Since June 2011, SHOM releases tidal predictions online on the www.shom.fr website for a seven-day period starting on any day of your choice. The tidal prediction software SHOMAR includes 150 metropolitan France harbours and more than 1 000 overseas and foreign harbours.

SHOM also provides real time services for sea state, sea levels, sea surface currents, associated forecasts and predictions on www.myocean.eu.org.

8.3. New equipment

NTR.

8.4. Problems encountered

NTR.

9. Other activities

9.1. Meteorological data collection

NTR.

9.2. Geospatial studies

NTR.

9.3. Disaster prevention

- **Tsunami :**

SHOM is a member of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS).

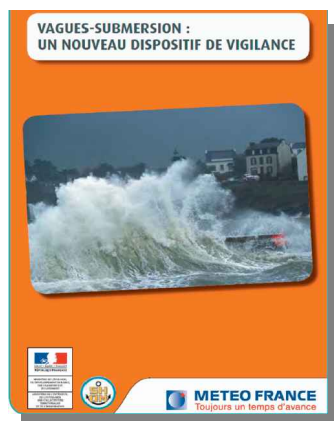


On top of the two tide gauges in *La Pointe des Galets (La Réunion)* and in *Dzaoudzi (Mayotte)*, two more tide gauges were installed in *Toamasina* (East coast of Madagascar) and in the *Saint-Marie* harbour (East coast of *La Réunion*). As part of the real-time SHOM tide gauge network named RONIM, they are currently transmitting real time measurements to the tsunami warning centres.

France may also have Navy ships in the NIOHC region ready to provide support in case of an emergency. France also provides technical support and has a rapid response capacity for environmental data in case of a disaster.

The point of contact at SHOM in case of a disaster is Cdr Bertrand Menanteau. His division can be reached 24/7 by fax +33 298 221 665 or email coord.navarea2@shom.fr

- **Coastal flooding :**



SHOM is associated with *Météo-France* in the provision of an alert system against coastal flooding named *Vigilance Vagues Submersion*. This allows for a better anticipation of this destructive phenomenon and protection of the populations living in the littoral area of Metropolitan France.

SHOM provides the tide predictions, expertise in coastal hydrodynamics and real time tide gauge observations as well as information relative to extreme sea levels and bathymetry. *Météo-France* marine forecasters examine and compile the data and produce a map depicting the level of coastal flooding threat together with the risk of tall waves for each French metropolitan department.

- **Oil spills:**

SHOM is an active member of the inter-agency drifting committee which is activated by the maritime prefecture every time there is an oil spill. The POLMAR safety plan for the sea was signed on 23rd November 2004 and aims at enabling France to face in a reactive manor a potential wide spread of marine pollution, by ensuring the efficient coordination of national operations and support from public services.

9.4. Environmental protection

NTR.

9.5. Astronomical observations

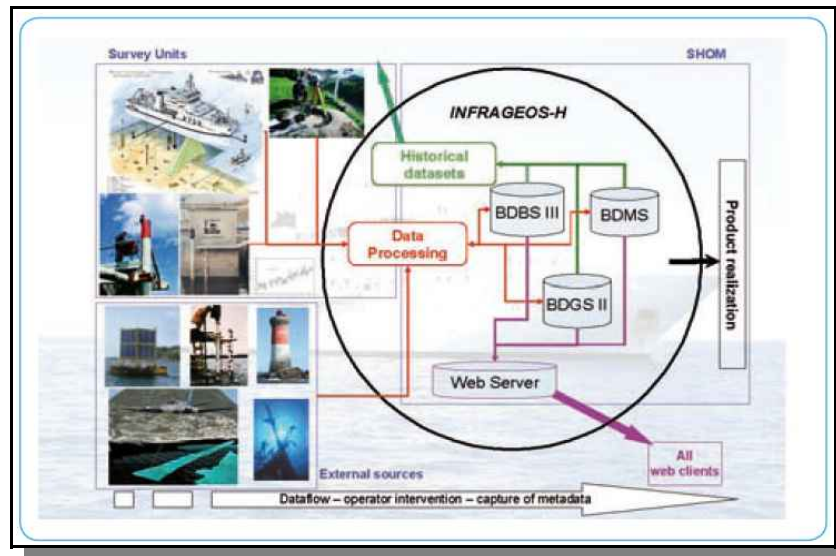
NTR.

9.6. Magnetic/Gravity surveys

NTR.

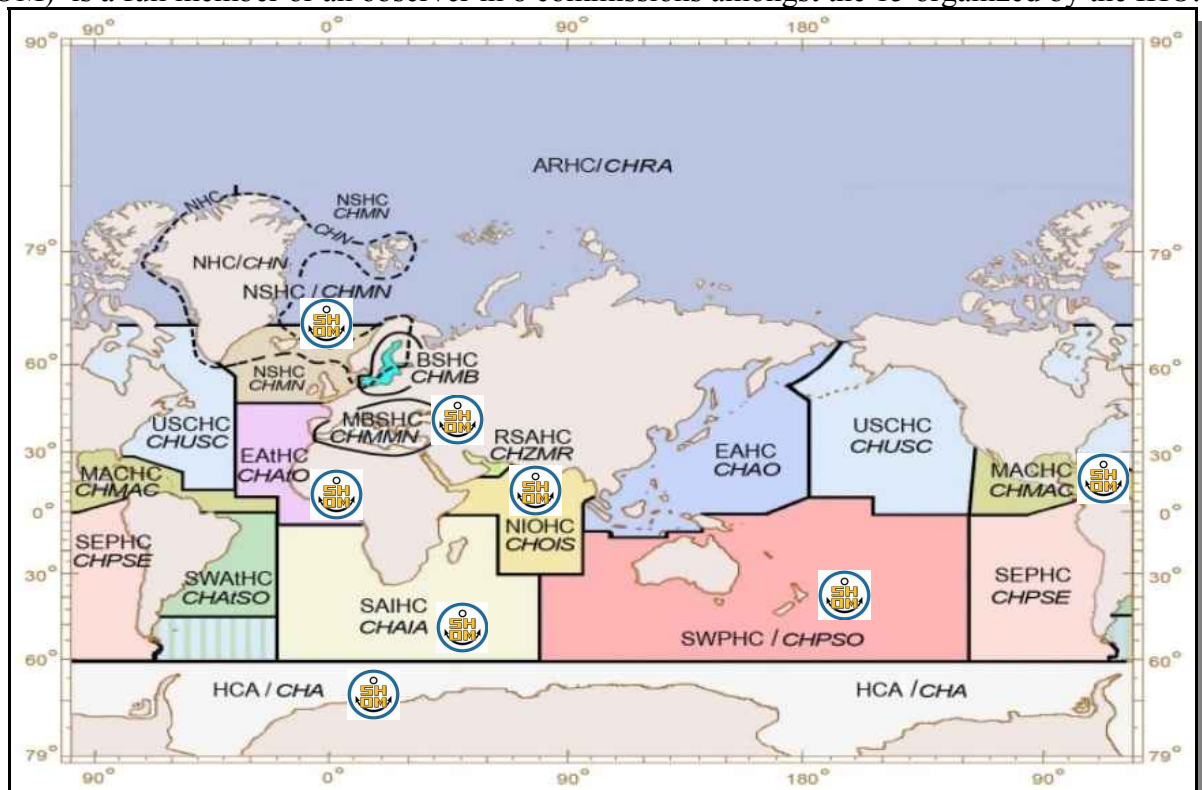
9.7. MSDI Progress

To fulfil its responsibilities, SHOM currently operates an assortment of heterogeneous systems to stock, manage and exploit collected hydrographic data: navigational aid, soundings, tidal components etc. The INFRAGEOS-H® project aims at procuring an interoperable database management system, providing better access to optimised geo-referenced databases and improving information processing. This set of tools allows SHOM to tackle the ever-changing information and product requirements as well as to comply with international normalization standards and data dissemination policies, such as the INSPIRE European directive or the regulation set by the IHO. The geospatial infrastructure covering all themes is shown on the following diagram:



9.8. International

Because of its overseas territories and primary charting responsibilities, France (represented by SHOM) is a full member or an observer in 8 commissions amongst the 15 organized by the IHO.



The detail of SHOM's involvement in IHO activities is listed in the table hereafter:

Name	Chair / Vice chair	Member	Observations
CBSC		✓	Capacity Building Sub-Committee
CSPCWG		✓	Chart Standardisation and Paper Chart Working Group
DIPWG		✓	Digital Information Portrayal Working Group, former CSMWH
DPSWG		✓	Data Protection Scheme Working Group
DQWG		✓	Data Quality Working Group - Last meeting in 1996
EAtHC		✓	Eastern Atlantic Hydrographic Commission
EUWG	✓	✓	ENC Updating Working Group
FC	✓	✓	Vice-chairman of Finance Committee
GEBCO		✓	Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of Oceans (GEBCO)
HCA		✓	Hydrographic Commission on Antarctica
HDWG		✓	Hydrographic Dictionary Working Group
HSSC		✓	Hydrographic Services and Standards Committee, formerly known as the Committee on Hydrographic Requirements for Information Systems (CHRIS)
IRCC		✓	Mr. Gilles Bessero, former SHOM director general, is chairman until the next IH Conference
LAWG		✓	Legal Advisory Working
MACHC		✓	MESO American & Caribbean Sea Hydrographic Commission
MBSHC		✓	Mediterranean and Black Seas Hydrographic Commission
MSDIWG		✓	Marine Spatial Data Infrastructure Working Group
NIOHC		✓	North Indian Ocean Hydrographic Commission
NSHC	✓	✓	North Sea Hydrographic Commission
SAIHC		✓	Southern Africa and Islands Hydrographic Commission
SNPWG		✓	Standardisation of Nautical Publications Working Group
SWPHC		✓	South-West Pacific Hydrographic Commission
TSMAD		✓	Transfer Standard Maintenance and Application Development
TWLWG	✓	✓	Tidal and Water Level Working Group
WEND		✓	World-Wide Electronic Navigational Chart Database
WWNWS	✓	✓	World-wide Navigational Warning Service Sub-Committee, formerly known as the Promulgation of Radio Navigational Warnings Sub-Committee (PRNW)

10. Conclusion

SHOM is pursuing and launching programmes that structure the littoral geographic framework and support coastal alert systems. These will help prepare the great mile stones to come with respect to navigation safety and integrated environmental management. In all those fields, SHOM benefits from partnerships with its national, European and international counterparts.

Evolving through an open and shape shifting context, relying on fast-paced evolving professions, SHOM has achieved an efficient operational interface with its clients, together with a capacity to anticipate and steer the related technical fields. Aware of the spread and the variety of its missions, SHOM is ready to face the upcoming challenges and will continue to fulfil its current and future responsibilities.