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SERVICE HYDROGRAPHIQUE
ET OCÉANOGRAPHIQUE
DE LA MARINE

DIRECTION DES MISSIONS
INSTITUTIONNELLES ET DES
RELATIONS INTERNATIONALES

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FRENCH NATIONAL REPORT TO THE 13TH MEETING OF THE NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION

1. Hydrographic Service: General

In 2009, the President of the French Republic introduced the foundations of a new national maritime integrated policy which was followed soon after by the adoption of a *national strategy for the sea and the oceans by the Interministerial Committee of the Sea*.

Since those commitments have already been integrated in SHOM's actual strategy, this year, efforts have been made within SHOM in order to fulfil greater achievements through its next targets and performance contract for 2013 – 2016.



No efforts will be spared to meet the various requirements of this contract, while improving the visibility of SHOM's capacities and strengthening our partnerships, especially in this era of comprehensive public policy reviews and financial crisis.

SHOM contributes actively to this momentum without neglecting its three core missions: the national hydrographic service, the environmental support to defence and the support to maritime and coastal public policies.

[1] <http://www.sgmer.gouv.fr/>

2. Surveys

2.1. Coverage of new surveys

Beautemps-Beaupré survey ship conducted in March 2012 the “Owen-2” and “Marges-Aden” campaigns studying the shallow and deep structures in the easternmost part of the Gulf of Aden, east of the Socotra-Hadbeen fault zone, and the present-day and recent deformation related to the kinematics of India and Arabia plates from the detailed mapping of seafloor faults scarps combined with seismic imagery :

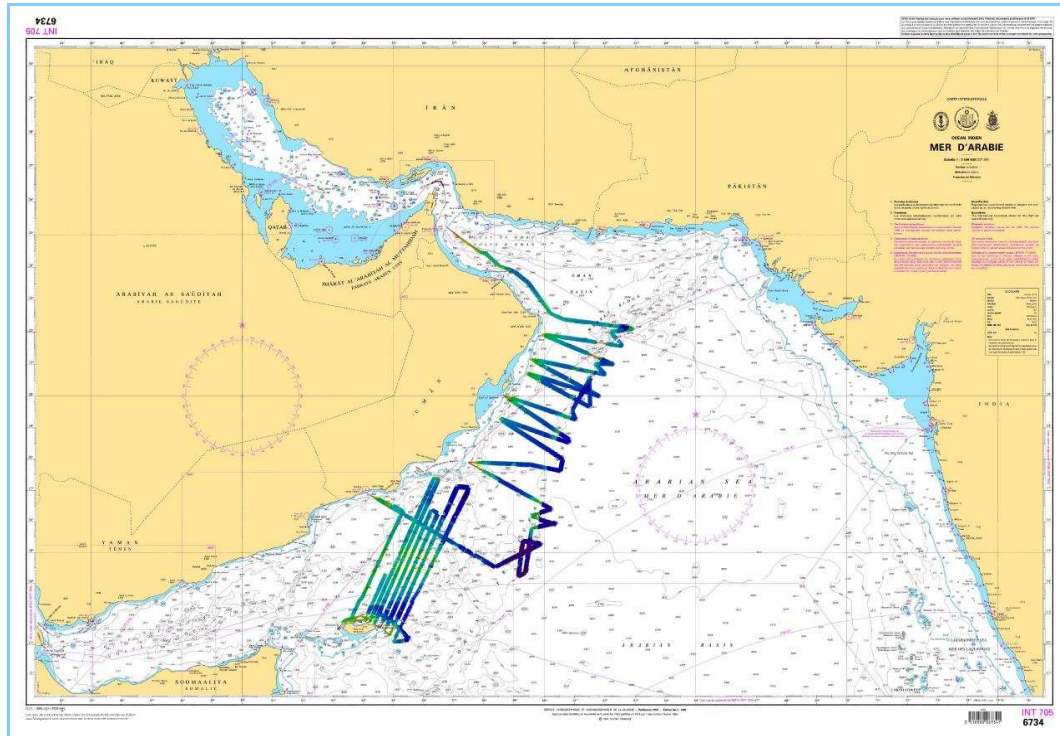


Fig.1: Beautemps-Beaupré survey ship's “Owen-2” and “Marges-Aden” campaigns

According to the bilateral agreement with the Republic of Djibouti, France is responsible for charting the Djibouti harbour and its approaches. In June 2012, the following surveys were conducted :

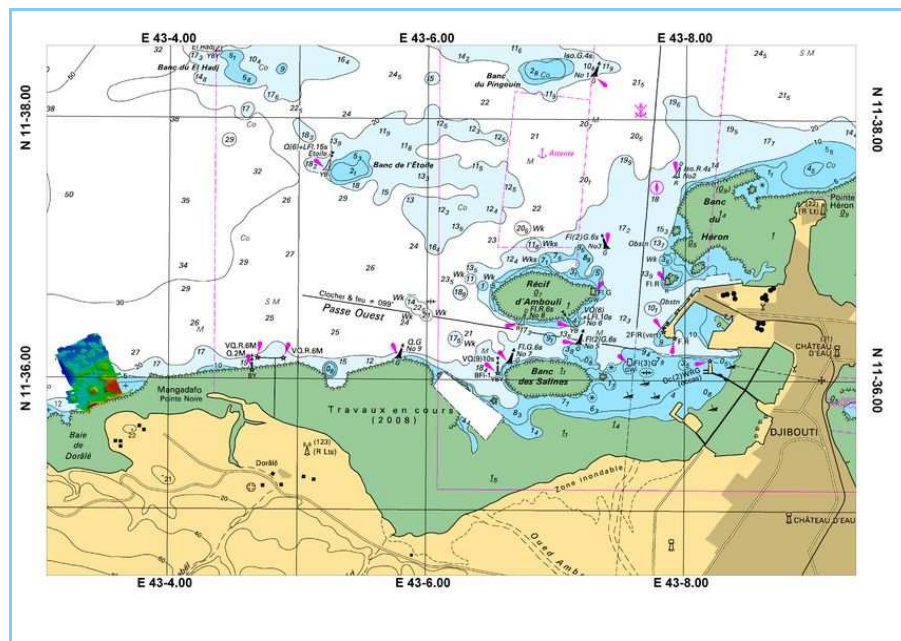


Fig.2: Surveys conducted in the Republic of Djibouti's waters.

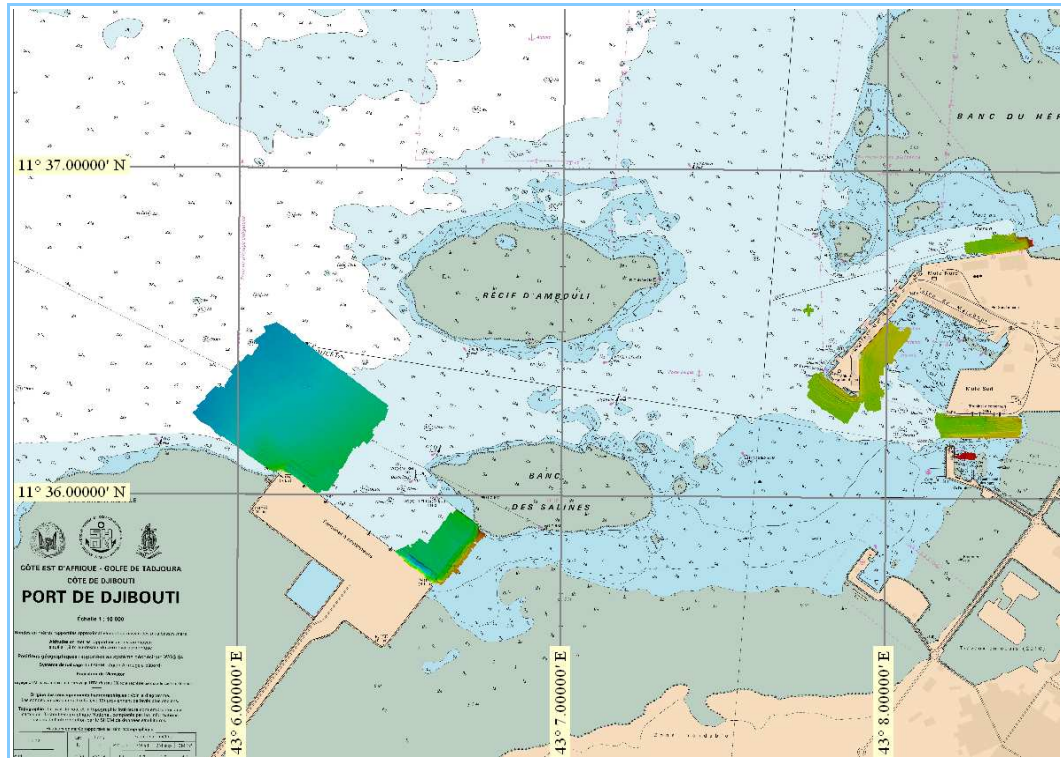


Fig.3: Surveys conducted in Djibouti's harbour.

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 :

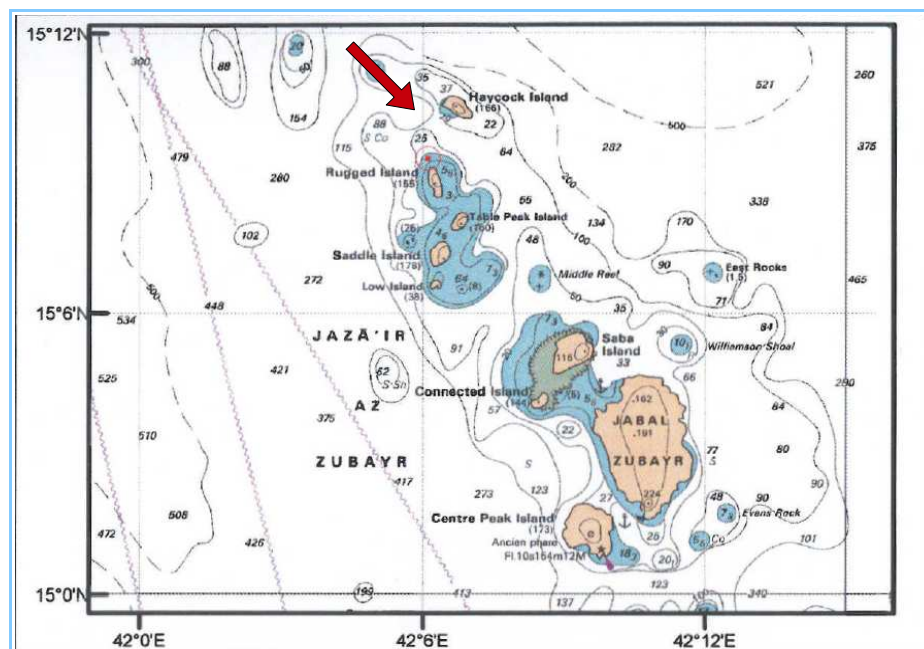


Fig.4: Approximate position of a new island in Yemenite waters.

No survey was conducted in this area. SHOM is waiting any data to update the nautical chart.

2.2. Planned surveys

SHOM has planned to conduct surveys in the NIOHC region in 2014.

2.3. New technologies and /or equipment

After the hydrographic ship *Laperouse* in 2011, the hydrographic ship *Borda* has its Kongsberg multibeam echo-sounder EM1002 replaced during the winter 2012-2013 by the EM710. For the record, 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 (picture from *La Pérouse* MBES EM710 dataset) :

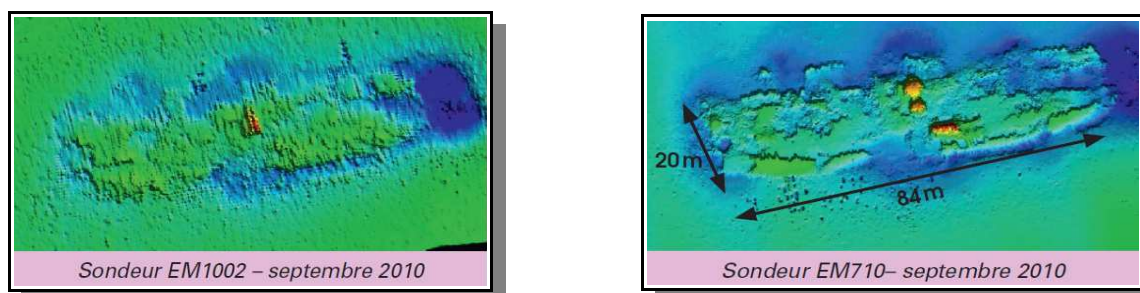


Fig.5a (left)/b (right): Comparison between EM1200 and EM710 multibeam echosounder.

2.4. New ships

NTR.

2.5. Problems encountered

NTR.

3. New charts & updates

3.1. ENC's

SHOM's ENC catalogue has reached the number of 373 cells in January 2013. The approximate rate of production is of 40 ENC's per year. In line with the WEND recommendations and guidelines, France produces its small scale ENC cells as closely as possible to INT chart schemes.

No ENC has been published or edited in the NIOHC region since the last conference.

In 2013, another ENC on Djibouti is planned to be produced, as a replacement for the existing cell.

Cell	Area	Usage Band	FR paper chart number	Observations
FR475470	Approaches to Djibouti	4	7547	FR475470 replaces FR436010, planned in 2013

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

The following figure is an extract of the online PRIMAR catalogue <http://www.primar.org> regarding the French ENC's available in the NIOHC region:

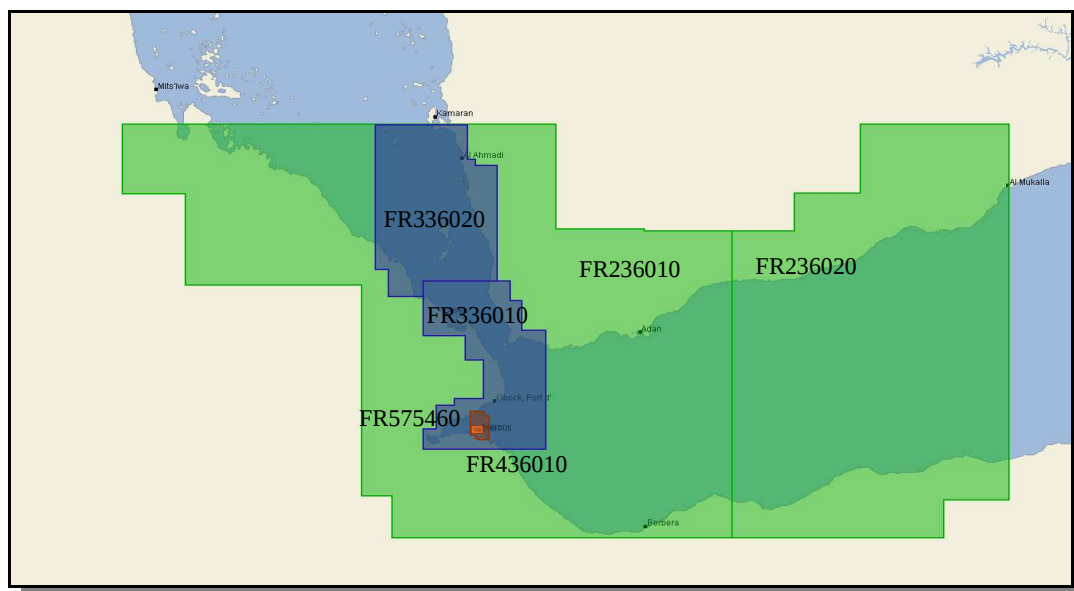


Fig.6: French cells within NIOHC region (source PRIMAR.org)

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

Produced since the last NIOHC conference :

N° National	N° INT	New chart or new edition	Scale 1:	Title
7518	7118	LNE	200 000	<i>De Al Hudaydah à Al Mukha</i> (cable)
7519	7114	LNE	200 000	<i>Bab el Mandeb et Golfe de Tadjoura</i> (cable)
7547	7115	NC	50 000	<i>Abords de Djibouti</i>

The chart INT7115 (FR7520) has been replaced by the new chart INT7115 (FR7547).

Production plan for the 2013-2015 period:

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	100
Total	5	5	100

3.5. National paper charts

Produced since the last NIOHC conference :

N° National	New chart or new edition	Scale 1:	Title
7099	LNE	710 000	<i>De l'archipel Sawakin aux îles Hanish (cable)</i>
7112	LNE	690 000	<i>De Abu el Kizân à l'archipel Sawakin (cable)</i>

No charts are planned to be released within the NIOHC region for the 2013-2015 period.

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

Four list of lights books have replaced the 14 former ones. Their coverage has been focused to French hydrographic responsibility area with some extents. Only LC list of lights book ((East Atlantic Ocean – West Indian Ocean – Pacific Ocean) are within NIOHC area's scope.

4.2. Updated publications

Nb 1 fascicule de correction du L3 NP “Afrique (Côte Est)” publié en 2012.

Nb 1 fascicule de correction du L8 NP “Afrique (Côte Est)” publié en 2012.

91 : « Radionavigation Maritime » édition 2012

92.1 : « Radiocommunications maritimes vol. 1 ; Europe – Groenland – Méditerranée (2012)

92.2 : « Radiocommunications maritimes vol. 2 ; Afrique – Asie – Austrasie (2011)

92.3 : « Radiocommunications maritimes vol. 3 ; Amériques – Antarctique (2012)

92.4 : « GMDSS » (2011)

93: « Radiocommunications pour la surveillance du trafic maritime et du pilotage (2012)

96.2 : « Stations radiométéorologiques » vol. 2 : Pacifique Sud-Ouest-Amériques-Antarctique (2011)

4.3. Means of delivery

7.2. Status of national, bilateral, multilateral or regional development projects with hydro-graphic 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.

For the record, in the NIOHC region, SHOM has a bilateral agreement with the Republic of Djibouti

7.3. Definition of bids to IHOCBC

NTR.

8. Oceanographic activities

8.1. GEBCO/IBC's activities

NTR.

8.2. Tide gauge network

From 2010, 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:

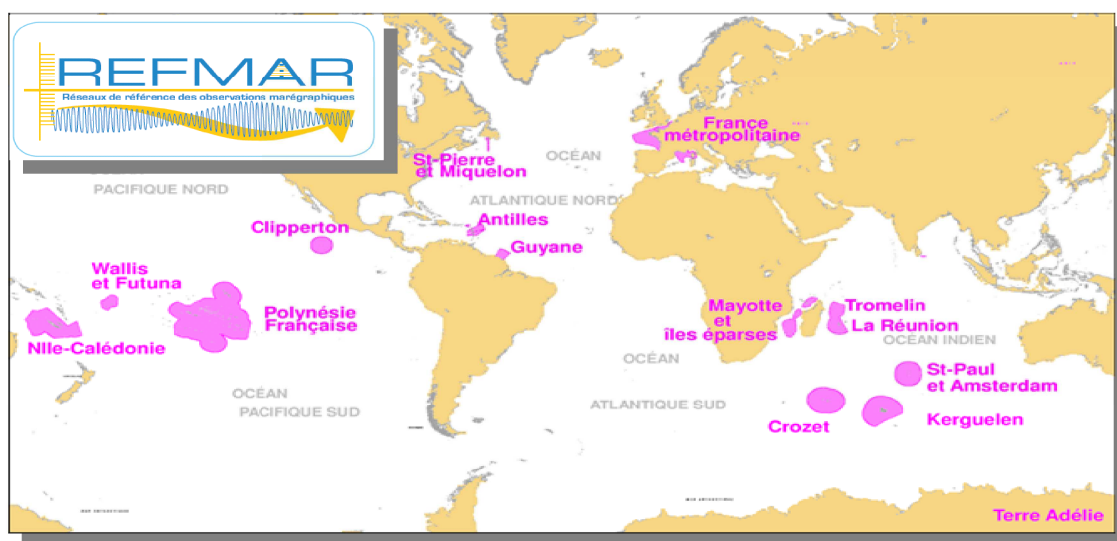


Fig.8: SHOM's REFMAR global coverage.



SHOM edition of the tidal prediction software SHOMAR (for 150 metropolitan France harbours and more than 1 000 overseas and foreign harbours). Each SHOMAR edition is usable for 2 years. The current version 2013 January 1st, is valuable up to 2014 December, 31st. SHOMAR exploitation system is efficient on Windows® NT, 2000, XP, Vista and Seven.

In 2012, the new SHOM smartphone application for tide predictions has been released for both IOS and Android terminals. The user can choose a port, ask for tide predictions for that port and display the tide graph or moon phase.

For offshore users who do not have access to Wifi or 3G network, it is possible to pre-download the one-year tidepredictions for selected ports.



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).



France has four tide gauges in *La Pointe des Galets* and *Sainte-Marie (La Réunion)*, *Dzaoudzi (Mayotte)* and *Toamasina* (East coast of Madagascar). As part of the real-time SHOM tide gauge network named RONIM, they are currently transmitting real time measurements to the tsunami warning centres, through the Global Telecommunication System (GTS) and the meteorological satellite Meteosat9.

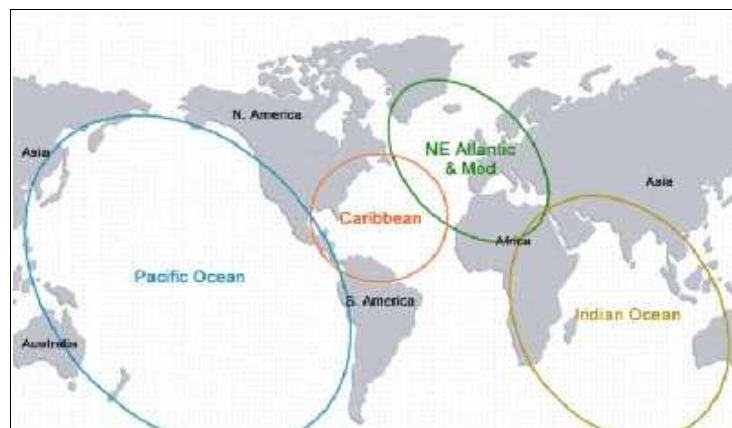


Fig.9: Cooperation areas on tsunami warning system (source COI ; UNESCO).

In addition, SHOM also provides regularly technical supports on the IOC tide gauge in Djibouti harbour. A levelling of the benchmark and a Quality control of the data was carried out by SHOM surveyors in June 2012.

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.

In case of a disaster, the point of contact at SHOM is Cdr Bertrand Menanteau.

His division can be reached 24/7 by the following means:

- fax: +33 298 221 665

- 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

SHOM undertook the construction of a spatial data infrastructure in 2007. The first step is managed by INFRAGEOS-H® project which aims at procuring an interoperable database management system, providing better access to optimised hydrographic geo-referenced databases and improving information processing. To do so, INFRAGEOS-H® project has been dealing with the evolution of the hydrographic databases, and paved the way to metadata management and view web services. Late 2011, a second SDI step is defined with ENTREPOT® project. Launched in 2011, its objectives are to identify and distribute non-navigational products and their metadata through a portal based on web services. This platform also intends to provide specific services like dynamic cartography, vertical reference change....

At this stage, the SDI construction has reached the following results:

- Hydrographic databases migration to the new systems is partially achieved as tide, submarine cables and wrecks are currently managed in SHOM SDI. What is more, 90% of the bathymetric surveys have also been migrated to the SDI ;
- A first set of metadata sheets has been written and is available on the French geocatalogue (www.geocatalogue.fr). To go further, a metadata working group has been created to spread the metadata good practices at SHOM ;
- Last January, SHOM opened its maritime and coastal geographic information portal which offers a large set of view and download services at <http://data.shom.fr>. All the services are compliant with the european INSPIRE directive.

The portal is also described on SHOM website (<http://www.shom.fr/les-services-en-ligne/portail-datashomfr/>).

The SDI construction remains active with the development of new web services to be provided in 2013, and the extension to all SHOM thematics. The aim is to achieve a full SDI organization as shown on the following diagram.

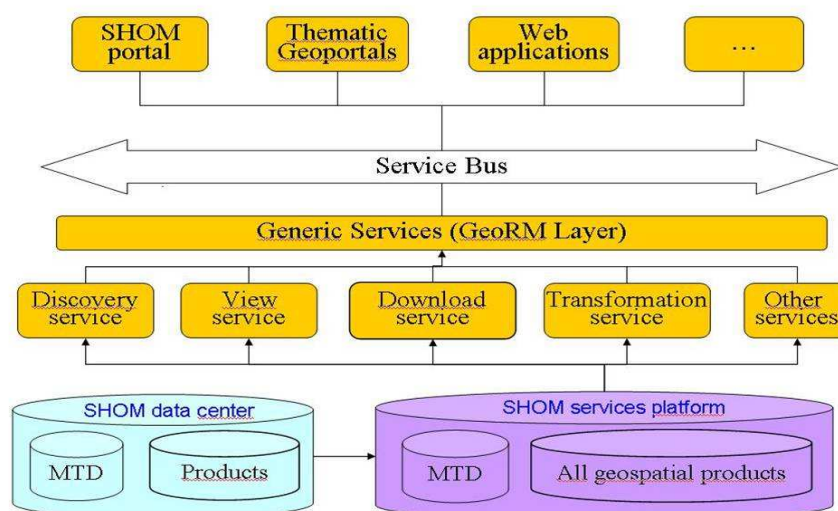


Fig.10: INFRAGEOS project framework.

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
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		✓	Inter-Regional Coordination Committee
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

The actual economic context make National Hydrographic Organisations even more keen to reconsider their way of gathering data with efficiency, not only in the scope of navigation safety, but in support of maritime economy like with maritime boundaries.

It will radically influence the approach of capacity building projects within the region. In that way, SHOM, side by side with the IHO, continuously thrives to reinforce international cooperation for the security of mariners and the capacity building of hydrographic services worldwide.