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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 18<sup>TH</sup> MEETING OF THE MEDITERRANEAN AND BLACK SEA  
HYDROGRAPHIC COMMISSION**

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**1. Hydrographic Service: General**

An important milestone of the past months has been the approval by SHOM Board of its new targets and performance contract for the 2013-2016 period, which outlines main orientations and objectives in the forthcoming years. This work culminated in the Minister of Defence's visit to SHOM on the 14<sup>th</sup> of June.



**Fig.1:** Signing ceremony of SHOM's targets and performance contract for 2013-2016 (Brest - June 14<sup>th</sup> 2013).

*From left to right: SHOM's general director Ingénieur Général Bruno Frachon, Minister of Defence Jean-Yves Le Drian and Naval Chief of Staff Admiral Bernard Rogel, chairman of SHOM Board.*

SHOM's next commitments rely on France's National Maritime Strategy and Defence Policy, which are declined in different themes, in the scope of an national integrated policy :

- Environment protection
- Risk assessment and coastline management
- Knowledge, research and innovation
- Sustainable development of maritime and littoral economy
- Involvement in International and European policies
- Defence support



It is worth noting that in the meantime, a new prioritized 4-years survey plan for all the waters under French jurisdiction has been approved.



Fig.2a (left)/b (right): National Hydrographic Plan (NHP) for the 2013-2016

## 2. Surveys

### 2.1. Coverage of new surveys

Since the last meeting (June 2011), no extensive survey has been conducted in SHOM's MBSHC area of responsibility. However, several limited surveys have been achieved since 2011 such as:

- some routine checks performed by ships and launches in several ports along the French Mediterranean coasts,
- Two short surveys on port approaches in Lebanon (Zahrani and Tripoli) conducted in 2011,
- A limited survey performed in 2011 within the framework of a bilateral agreement between France and Morocco: harbours of Ksar Sghir and Tanger Ville.

Besides, further calibrations surveys by launches have been conducted in connection with Lidar surveys in the frame of Litto3D project (see next section for details).

## 2.2. LIDAR surveys

Since the last conference, the French Mediterranean coasts (except Corsica) were surveyed by Lidar technology, under Litto3D® project coordinated by the French National Geographic Institute (IGN) and SHOM. 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. It aims to provide a very high resolution Sea-Land digital terrain model (DTM) of metropolitan and overseas French coasts.

For more information please contact [litto3d@shom.fr](mailto:litto3d@shom.fr)

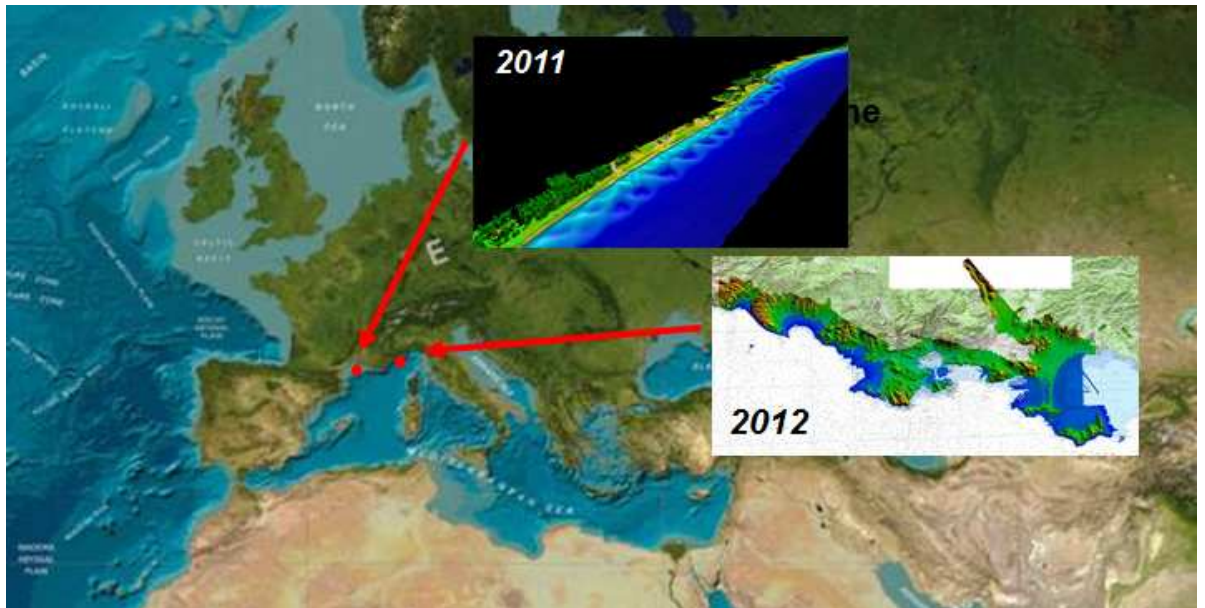


Fig.3: LIDAR surveys achieved in the region since 17<sup>th</sup> MBSHC.

(2011: Languedoc-Roussillon region; 2012: Provence-Alpes-Côte d'Azur region)

## 2.3. French Survey programme for the region

SHOM's survey planning for the area is detailed in the two figures hereafter, presenting the long-term objectives regarding the compliance with S-44 (fig. 3) and the 2013-2016 survey plan combined with existing surveys (fig.4): the survey programme for the Mediterranean area is composed of:

- coastal surveys in Corsica (main harbours approaches, anchor areas),
- survey work near Toulon (Southern part of île du Levant).

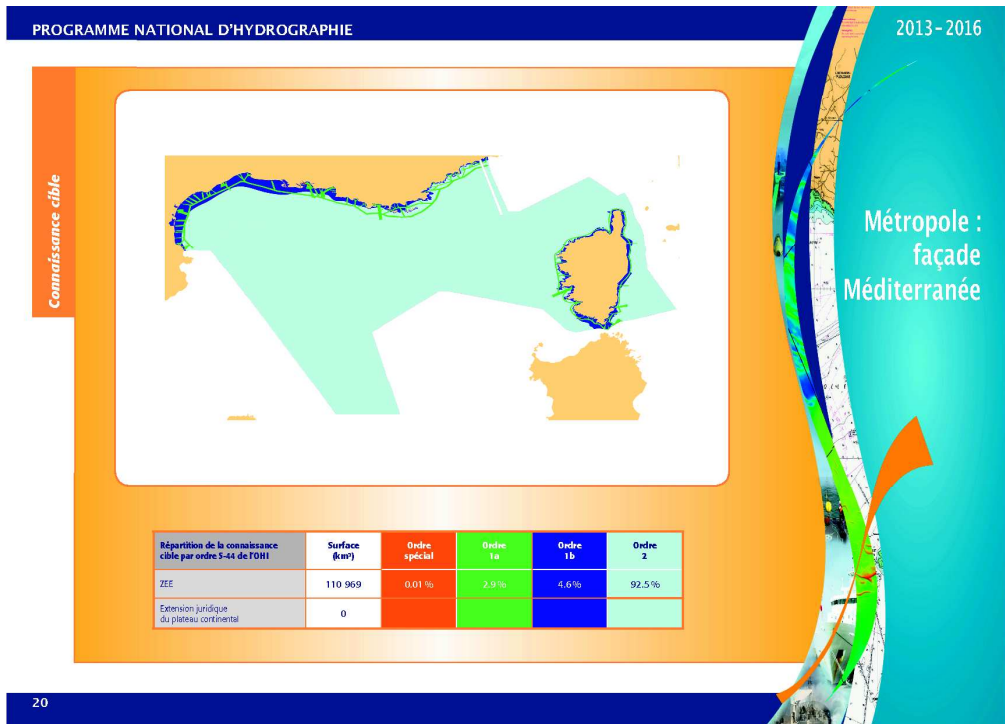


Fig.4: Long term objectives for the region (source: 2013-2016 NHP)

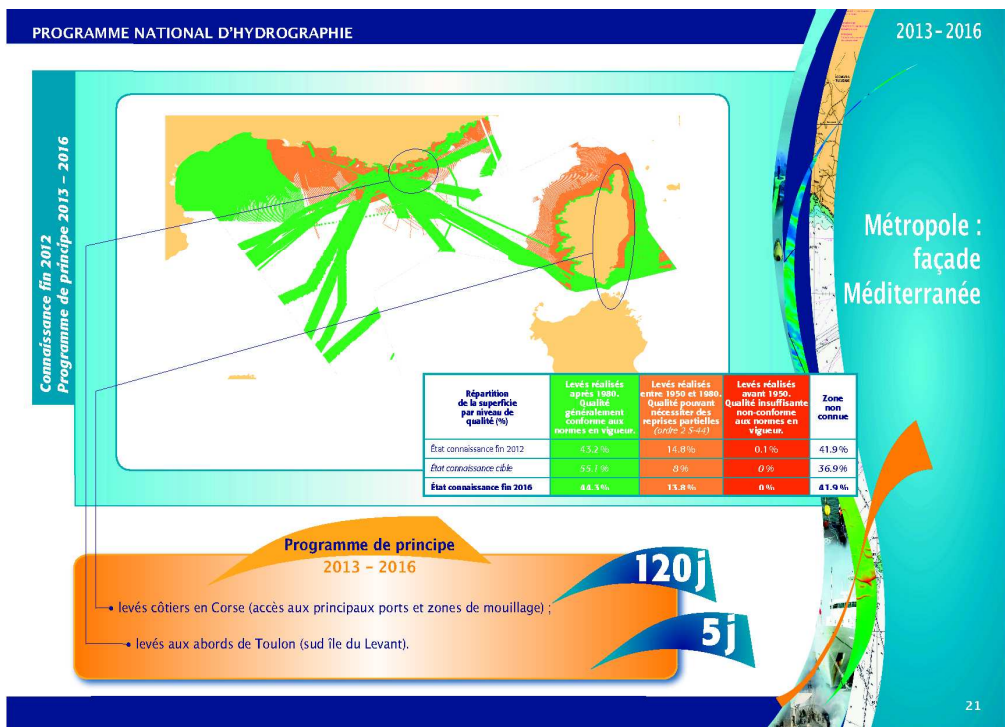


Fig.5: Existing surveys and survey planning for the 2013-2016 period (source: 2013-2016 NHP)

As requested by MBSHC during its 17th Conference (decision 20), information regarding the status of French hydrographic surveys has been transmitted to Spain.

#### 2.4. New technologies and /or equipment

NTR.

#### 2.5. New ships

NTR.

#### 2.6. Problems encountered

As many other IHO member states, France is tasked with 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 HOs, in its areas of charting responsibility, and has to insist to obtain communication of IHO-compliant data relevant to INT charts and nautical information.

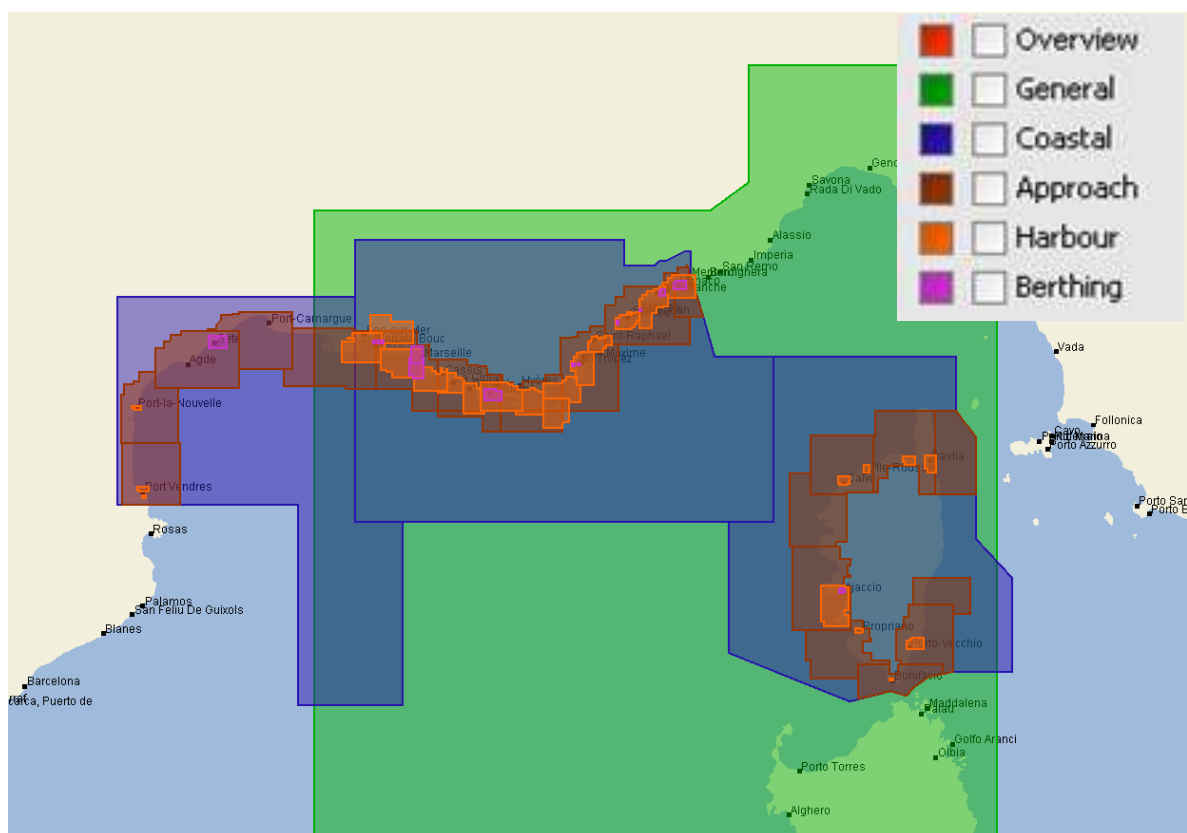
**In the interest of the maritime community, it is reminded that survey results should be communicated to the IHO recognised charting authority (in accordance with M-3 resolution 1/2006 and S-4 resolution A-402.1 and B-635.4).**

### 3. New charts & updates

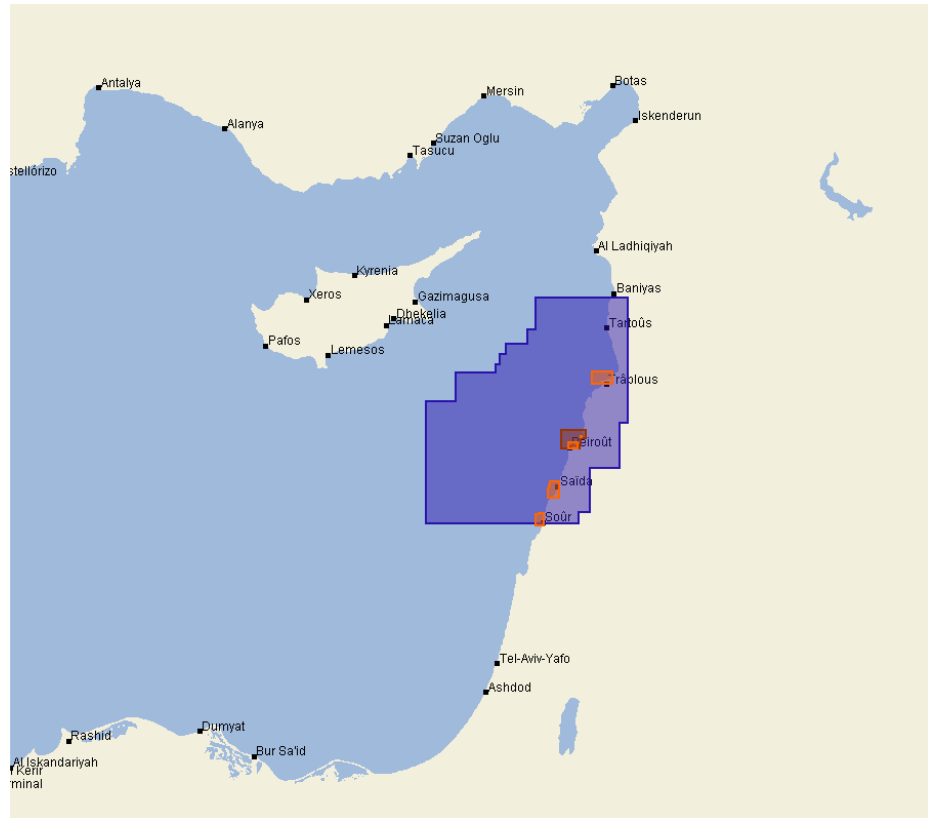
#### 3.1. ENCs

On the 1<sup>st</sup> of June 2013, SHOM had produced some 381 ENCs at an approximate rate of 40 per year. The full collection over French Metropolitan coasts should eventually reach a figure around 677 ENCs. In line with the WEND principles, France produces its small scale ENC cells as closely as possible to INT chart schemes. The French production plan is also compliant with IMO regulations on ECDIS mandatory carriage requirements.

The SHOM ENC coverage of the MBSHC area is depicted in the chartlets hereafter.



*Fig.6: SHOM's actual ENC Coverage over Western Mediterranean coasts.*



*Fig.7: SHOM's actual ENC Coverage over Eastern Mediterranean coasts.*

The cells produced since the last conference (June 2011) are as follows:

Number	New chart (NC) or new edition (NE)	Scale 1:	Title
FR474090	NE	50 000	<i>Rade d'Agay à la baie de Beaulieu</i>
FR670930	NE	10 000	<i>Rade de Toulon</i>
FR369510	NE	250 000	<i>De Fos-sur-Mer à Menton</i>
FR370080	NE	250 000	<i>Du Cap Cerbère à la Pointe de Beauduc</i>
FR370250	NE	250 000	<i>Ile de Corse</i>
FR57514C	NC	25 000	<i>Liban - Abords de Saida</i>
FR566840	NE	25 000	<i>Golfe et port de Fos-sur-Mer</i>
FR403360	NE	50 000	<i>Approches de Fos-sur Mer</i>
FR403330	NE	50 000	<i>Approches de Marseille</i>
FR369510	NE	250 000	<i>De Fos-sur-Mer à Menton</i>
FR270140	NE	1 000 000	<i>Des Iles Baléares à la Corse et à la Sardaigne</i>
FR566840	NE	25 000	<i>Port de Fos-sur-Mer</i>

It is worth mentioning that a new scheme of the usage band 3 ENC's has been established based on the paper chart limits (reducing 17 cells into 3 cells).

An overlap between a French ENC and an Italian ENC has been solved by the issue of new editions of the two ENC's.

The following cells are planned in 2013-2014 :

Number	Scale 1:	Title
FR468230	50 000	<i>Abords Sud de Bastia</i>
FR468550	50 000	<i>Du Phare d'Alistro à Solenzara</i>
FR67392A	5 000	<i>A - Port de Carry-le-Rouet</i>
FR67392B	5 000	<i>B - Port de Sausset-les-Pins</i>
FR67393A	5 000	<i>A - Port de Cassis</i>
FR66612A	7 500	<i>A - Port de La Ciotat</i>
FR66616A	7 500	<i>A - Bormes-les-Mimosas</i>
FR66616B	7 500	<i>B - Cavalaire-sur-Mer</i>
FR67282A	7 500	<i>A - Port d'Hyères (Port Saint-Pierre)</i>
FR67282B	7 500	<i>B - Port de Miramar</i>
FR67267B	10 000	<i>B - Sainte-Maxime</i>
FR66838A	7 500	<i>A - Port-Fréjus</i>
FR66838B	7 500	<i>B - Vieux Port - Saint-Raphaël</i>
FR66838C	7 500	<i>C - Port Santa-Lucia - Saint-Raphaël</i>
FR67200B	7 500	<i>B - Marina Baie des Anges</i>
FR67200C	7 500	<i>C - Port de Saint-Laurent-du-Var</i>
FR67205B	7 500	<i>B - Port de Cannes-Marina</i>
FR67205C	7 500	<i>C - Port de Cannes</i>
FR67205D	7 500	<i>D - Port Pierre Canto</i>
FR67205E	7 500	<i>E - Ports de Golfe Juan</i>
FR67205F	7 500	<i>F - Ports de Juan les Pins</i>

The status of ENC production in the area is:

Usage Band	Produced Cells	Planned Cells	%
<b>1</b>	0	0	/
<b>2</b>	1	1	100,0
<b>3</b>	4	4	100,0
<b>4</b>	20	22	91,0
<b>5</b>	31	82	56,6
<b>6</b>	12		
<b>Total</b>	68	109	62,4

### 3.2. ENC Distribution method

All French ENCs are distributed to End User Service Providers by PRIMAR RENC. FR is providing its support to the IC-ENC-PRIMAR Cooperation Committee working groups to develop a RENC-to-RENC cooperation concept.

### 3.3. RNCs

NTR.

### 3.4. INT charts

See next section for details.

The overall planning of SHOM for INT charts production in the region is as follows:

Scale	Produced INT charts	Planned INT charts	%
Small (<1/1 000 000)	1	1	100
Medium	5	5	100
Large (>1/100 000)	13	18	72
<b>Total</b>	19	24	79

### 3.5. National paper charts

Hereafter the charts produced since the last conference (June 2011):

National	INT	New chart (NC) or new edition (NE)	Scale 1 :	Title
6684	3192	NE	25 000	Golfe et Port de Fos ( <i>New regulation</i> )
6767	/	NE	50 000	De Fos-sur-Mer à Marseille ( <i>New regulation</i> )
7014	304	NE	1 000 000	Des îles Baléares à la Corse et à la Sardaigne ( <i>French ZEE</i> )
7390	3196	NE	10 000	Port de Marseille ( <i>New regulation</i> )
7391	/	NE	12 500	Abords Sud de Marseille - Des îles du Frioul à l'île de Jarre ( <i>New regulation</i> )
7392	3195	NE	25 000	Du Cap Couronne au Cap Croisette - Golfe de Marseille ( <i>New regulation</i> )

The following charts are planned in 2013-2015:

National	INT	New chart (NC) or new edition (NE)	Scale 1:	Title
7255	3606	NE	250 000	De El Ladhiqiyeh à Soûr
7514	3671	NE	25 000	Ports du Liban

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

NTR.

### 3.7. Problems encountered

NTR.

## 4. New publications & updates

### 4.1. New Publications

Since the last conference, the following publications have been issued :

Type	Nr	Title
IN	D4	Italy (Southeastern coast) – Adriatic Sea (2011)
LL	LB	The West Mediterranean (Northern Part) [2013]
RSX	91	Maritime Radionavigation (2012)



RSX	92.1	Maritime Radiocommunications – Vol. 1: Europe, Africa and Asia (2012)
RSX	92.4	Maritime Radiocommunications – Vol. 4: GMDSS (2011)
RSX	93	Radiocommunications for maritime traffic monitoring and pilotage (2012)
RSX	99	Radio Signals for boating, fishing and coastal navigation (2013)
DIV	135	Tide Table 2013 - Vol. 1 – French ports
DIV	135A	Tide Table 2013 - Vol. 2 – Overseas ports
DIV	145	Tide Table 2014 - Vol. 1 – French ports
DIV	145A	Tide Table 2014 - Vol. 2 – Overseas ports

IN: Sailing Directions; RSX: Radio Signals; LL: List of Lights; DIV: Miscellaneous

#### 4.2. Updated publications

NTR.

#### 4.3. Means of delivery

SHOM continues to increase the production of its digital nautical publications. From now, publications are still available in paper form but most of them are now available, by subscription, in digital format (weekly updated pdf files) on SHOM's online store which opened in June 2013 (<https://www.shom.fr/boutique/>).

On the other hand, SHOM launched in July 2013 a new MSI report service: this new website (<http://infonaut.data.shom.fr/>), accessible to all mariners, allows them to report directly any discrepancies between the field and SHOM's product.

#### 4.4. Problems encountered

NTR.

### 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 last C-55 update for the region is dated May 2010. A new Region H update has been sent to the IHB on August 26<sup>th</sup> 2013. The C-55 charting and surveying status values regarding Region F areas under SHOM responsibility are summed up in the following tables:

Survey status		Depth < 200m			Depth > 200m		
		A	B	C	A	B	C
F	France Méditerranée	95	4	1	95	5	0
	Monaco (Principauté de)	100	0	0	100	0	0

Charting status		Small (<1 M)			Medium (1M < / < 100 000)			Large (> 100 000)			Metric	WGS84
		A	B	C	A	B	C	A	B	C		
F	France - Méditerranée	100	0	100	100	0	100	80	0	83,6	100	100
	Monaco (Principauté de) <sup>1</sup>	100	0	100	100	0	100	100	0	100	100	100

Fig. 8: C-55 update values for survey status (top table) and charting status (down table)

<sup>1</sup> Data provided by France according to FR-MC Technical Agreement signed on September 19th 2005.

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

### 7.1. Training received, needed, offered

**Morocco:** France has implemented with Morocco a transfer of hydrographic and cartographic responsibilities mechanism, based on training programmes, consulting and including practical experience at sea. An agreement has been signed in January 2008 for the period 2008-2013. Since the last conference, the following trainings have been completed:

Course	Year	Student
Cat.B Hydrographic course (18 months)	2011 - 2012	1
	2012 - 2013	1
Cartographic training course (9 months) (officer and petty-officer)	2010 - 2011	2

**Algeria:** An Algerian naval forces petty-officer has completed SHOM's category B hydrographic training course at the end of July 2011.

Initial training capabilities provided by SHOM are described in its yearly report available on [www.shom.fr](http://www.shom.fr).

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

**Morocco:** In the frame of the bilateral agreement signed in 2008 between France and Morocco, SHOM, a limited survey of the harbours of Ksar Sghir and Tanger Ville has been performed in 2011.

**Tunisia:** A draft agreement for chart coproduction and distribution is under consideration by Tunisia.

For the countries benefiting from SHOM support to meet the hydrographic services requirements spelled out by the SOLAS convention, France fosters 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

Main tide gauge networks in the Mediterranean Sea (RONIM from SHOM, and other partners) are available on the REFMAR tide gauge webportal, operated by SHOM (<http://refmar.shom.fr>), together with the necessary metadata. When possible, raw data are available in near real time. RONIM tide gauges data are also available on the IOC sea level facility website.

Since the last MBSHC conference, SHOM has installed two new radar tide gauges with real time transmission in Port Ferréol and Port-La-Nouvelle that contribute to tsunami and storm surge warning systems.

IGN, University of La Rochelle and SHOM are working together to recover, digitize and analyse sea level paper records from GLOSS Marseille observatory dating back from 1885. This work is expected to deliver information on last century sea level rise along the French Mediterranean coast.

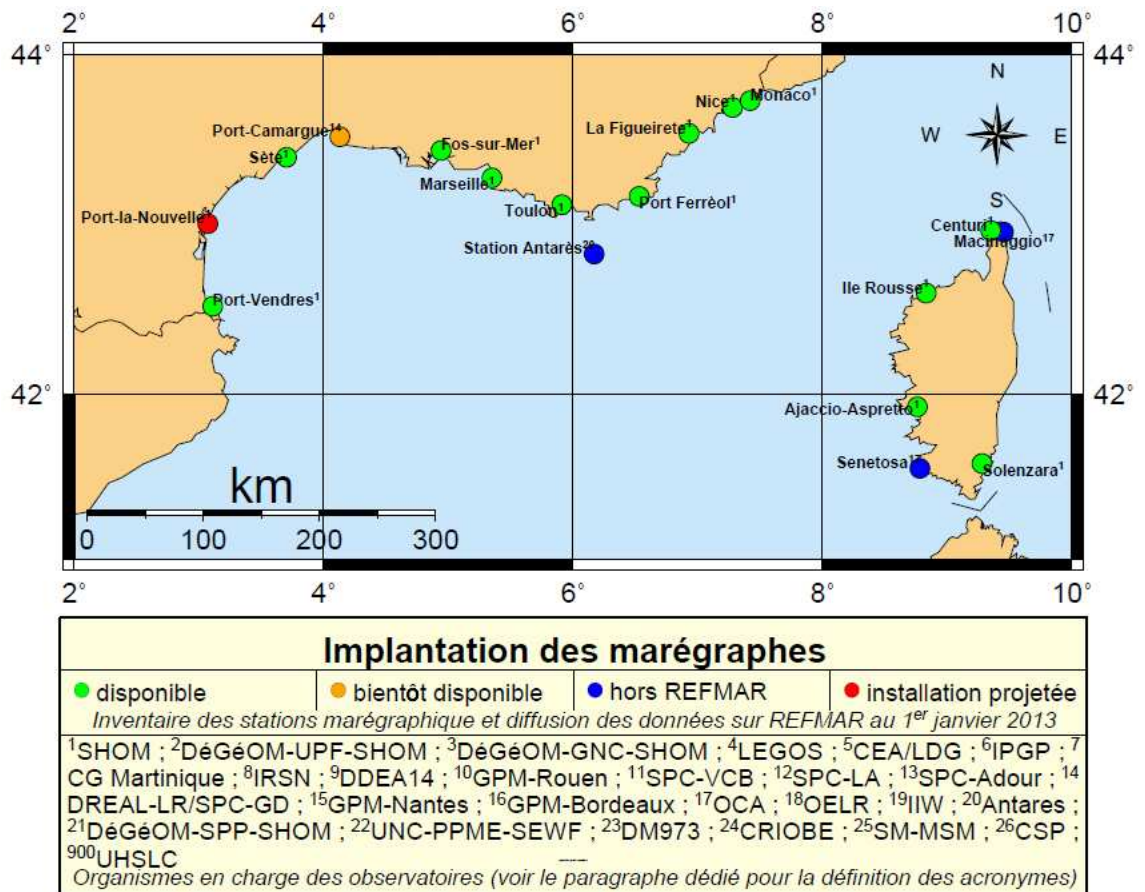


Fig.9: French tide gauges in the Mediterranean Sea.  
Green dots are already available on REFMAR website and blue dots are still under progress.

SHOM is encouraging French tide gauge owners to upgrade the quality of their instruments using radar sensors rather than pressure sensors and developing real time transmissions.

In June 2013, SHOM organized a special meeting “REFMAR days” on sea level to exchange on tide gauge instruments, data quality and research results on tide modelling, tsunamis and storm surges warning. Mainly French people have attended to this event, as well as some participants from countries in Northern and Western Africa.

### 8.3. New equipment



SHOM released an edition of its tidal prediction software SHOMAR (for 150 metropolitan France harbours and more than 1 000 overseas and abroad harbours): Each SHOMAR edition is usable for 2 years. The current version 2013 January 1st, is valuable up to 2014 December, 31st. SHOMAR software is compatible with various Windows® operating systems such as NT, 2000, XP, Vista and Seven.

In 2012, SHOM's smartphone application for tide predictions has been launched for IOS and Android. The user can choose a port, ask for tide predictions 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 tide predictions for selected ports. A new version of the application, including 2013 tide predictions, has been released last March.



#### **8.4. Problems encountered**

NTR.

### **9. Other activities**

#### **9.1. Meteorological data collection**

NTR.

#### **9.2. Geospatial studies**

NTR.

#### **9.3. Disaster prevention**

- **Tsunami :**

Fourteen SHOM tide gauges are contributing to Tsunami warning in the Mediterranean Sea by broadcasting their sea level data in real time through GTS (Global Telecommunication System) and also by delivering them directly to the French National Warning Center (CENALT) operated by CEA.

SHOM participates every year to the French reporting at the North Eastern Atlantic and Mediterranean Sea Warning System Intergovernmental Coordination Group under Unesco (NEAMSTWS). French TWS has been delivering official Tsunami Watch messages since July 2012 for North East Atlantic and Western Mediterranean Sea regions.

A lack of real time contributing tide gauge stations on the coasts of Northern Africa is still reported. Those gauges are missing for an efficient regional tsunami warning system.

- **Coastal flooding :**

Tide gauges real time transmission can be used for Tsunami warning as well as coastal flooding warning. In France, the French Meteorological office (Météo-France) has been operating a storm surge warning system in collaboration with SHOM since October 2011. Joint efforts are undertaken to improve storm surge modelling at the coastline using observations, tide predictions, atmospheric pressure and wind forecasts. A large scale interannual mean sea level oscillation in the Western Mediterranean Sea is observed, but still not well understood.

- **Oil spills:**

NTR.

#### **9.4. Environmental protection**

NTR.

#### **9.5. Astronomical observations**

NTR.

#### **9.6. Magnetic/Gravity surveys**

NTR.

#### **9.7. MSDI Progress**

Since 2007 SHOM has undertaken the construction of a spatial data infrastructure through the INFRAGEOS-H® project which has since then 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 has been launched with the ENTREPOT® project. 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 or vertical reference information.

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

- Hydrographic databases migration to the new systems is nearly achieved as tide, submarine cables, wrecks, bathymetry and administrative limits are currently managed in SHOM SDI. The migration of the last two layers (landmarks and beacons) will take place in September.
- Most products have their metadata written and available on the French geocatalogue ([www.geocatalogue.fr](http://www.geocatalogue.fr)), and the metadata working group created in 2012 is spreading 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 European directive INSPIRE.

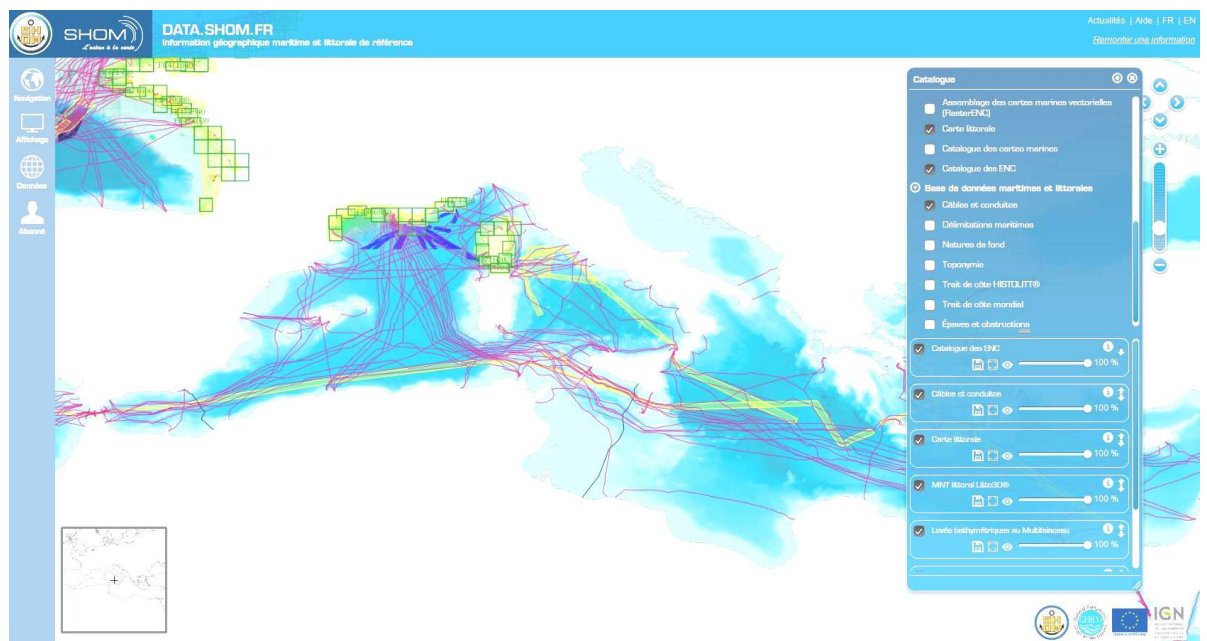


Fig.10: SHOM's data portal (data.shom.fr)

Two additional services have recently been added to this portal:

- a nautical information feedback service ([infonaut.data.shom.fr](http://infonaut.data.shom.fr)) which allows all users to send back to SHOM any information concerning depth, wrecks, coastlines, buoys, ....
- a dynamic cartographic environment ([cartodyn.data.shom.fr](http://cartodyn.data.shom.fr)) which allows all users to create their own maps taking benefit from data.shom.fr tools and data.

A detailed description of the portal functions and contents is available on SHOM website (<http://www.shom.fr/les-services-en-ligne/portail-datashomfr/>). Data available on that portal are organised according to the following topics listed below: *tides, tidal currents, bathymetry, cartography, maritime and littoral databases.*

## 9.8. International

France, represented by SHOM, is either member or associate member in 9 hydrographic commissions amongst the 15 organized by the IHO members states.

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
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 (associate member)
NSHC		✓	North Sea Hydrographic Commission
RSAHC		✓	ROPME Hydrographic Commission (associate member)
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)

Since the last MBSHC conference, SHOM has kept on contributing the dialogue between European Hydrographic Offices and the European Commission's DG-Mare, which resulted in the signature of a Memorandum of Understanding between the IHO and the EC at the opening day of the XVIIIth International Hydrographic Commission held in Monaco in April 2012. Since then, SHOM has remain active, coordinating for instance responses on EC's consultation about its Green Paper on Marine Knowledge 2020, or more recently by supporting with other nations the build-up of an IHO-EU network during the last IRCC conference in Wollongong (Australia).

## 10. Conclusions

The future IHO-EU network should be made aware of the hydrographic stakes in the region. Co-ordination with other multilateral organizations would foster leveraging of resources.

