

SWPHC12-06b

Paris, the 25<sup>th</sup> of October N° 016 SHOM/DMI/REX/NP

# FRENCH NATIONAL REPORT TO THE 12<sup>TH</sup> MEETING OF THE SOUTH WEST PACIFIC 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 forecoming 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, chaimran 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



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SERVICE HYDROGRAPHIQUE ET OCEANOGRAPHIQUE DE LA MARINE

DIRECTION DES MISSIONS INSTITUTIONNELLES ET DES RELATIONS INTERNATIONALES

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- 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 previous SWPHC conference in February 2012, SHOM conducted a great number of surveys, mainly dedicated to improve and update hydrographic knowledge in the framework of the SHOM's long term commitment in its overseas territories, especially in French Polynesia and New Caledonia waters.

Collecting nautical information in its overseas territories is a fundamental task, scheduled in close relation with local governmental authorities in the frame of a prioritized survey plan. Those works are conducted in support of both the local authorities, pilots, fishermen, mining operators and defense counterparts.

More precisely, SHOM conducted the following surveys:

# In New Caledonia and its vicinity:

Several surveys of ports, bays, natural harbours, recommended routes and passages have been performed, mainly inside the lagoon (fig. 3 to 8).



Fig.3: Surveys achieved in New Caledonia waters and its vicinity



Fig.4: Survey work achieved in Nakéty Bay.



 $\underline{Fig.5:}$  Survey work achieved for the recommended route towards Sarcelle/Ile des Pins.



Fig.6: Survey work achieved in Chateaubriand Bay and Wé harbour (Lifou island).



Fig.7: Survey work achieved for the extension of the recommended route from Belep islands towards Grand Passage.



Fig.8: Survey work achieved for the N'Go Baie access.

## In French Polynesia:

Several surveys have been conducted in Tahiti (Phaeton harbour and Teahupoo area), Moorea (Gump tide observatory leveling), Bora-Bora (Lidar calibration survey)) and Huahine (Bourayne harbour access survey) in the Society Islands (fig. 9 and 10).

SHOM also participated to the SHOMPOL Campaign onboard N/O Atalante in order to survey outside slope of the Society Archipelapo reefs (fig. 11).



Fig.9: Survey work achieved around Tahiti.



Fig.10: Survey work achieved around Bora-Bora and Huahine islands.



Fig.11: N/O Atalante MBES survey - SHOMPOL campaign - Society Islands in French Polynesia

## 2.2. LIDAR surveys

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 Litto<sub>3</sub>D® 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 georeferenced 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 <u>litto3d@shom.fr</u>

## 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 for New Caledonia, French Polynesia and Wallis et Futuna waters (fig. 12) and the 2013-2016 survey plan combined with existing surveys for those three areas (fig.13): the survey programme for the area is composed of:

## • New Caledonia:

Prioritized survey works defined by the hydrographic commission of New Caledonia, in the frame of the cooperation in hydrography between French state and the government of New Caledonia (convention related to competences transfert, signed on March 2012).

## • French Polynesia:

Survey works in lagoon waters (using deployable equipment) and opportunity surveys.

## • Wallis et futuna:

Survey works in lagoon waters (using deployable equipment) and opportunity surveys.



<u>Fig.12:</u> (top to bottom) Long term objectives for New Caledonia, French Polynesia and Wallis et Futuna waters (source: 2013-2016 NHP)



<u>Fig.13:</u> (top to bottom) Existing surveys and survey planning for the 2013-2016 period related to New Caledonia, French Polynesia and Wallis et Futuna waters (source: 2013-2016 NHP)

## 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 1th of October 2013, SHOM had produced some 390 ENCs at an approximate rate of 40 per year. The full collection should eventually reach a figure of the order of 900 ENCs. The SHOM ENC coverage of the SWPHC area is depicted in the following chartlets.



Fig.14: ENC coverage over New Caledonian waters.



Fig.15: ENC coverage over French Polynesian.



Fig.16: ENC coverage over Wallis et Futuna.

Hereafter are listed the ENCs produced since the last SWPHC co	onference:
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Number	Scale 1:	Title	Comment					
Nouvelle-Calédonie								
FR676430	10 000	Port de Nouméa	New edition					
FR473200	60 000	De Koumac à Poum						
FR57320A	25 000	Mouillage de Poum						
FR470110	60 000	De la Presqu'île Neuméni à la Baie de Ouinné						
FR473750	60 000	De Poya à Koné						
FR470510	60 300	Du récif Colnett au grand récif Mengalia						
FR469490	60 000	Abords de Thio - Cap Bégat à la Passe de Thio						
FR56985B	20 000	Mouillage de Théoudié						
FR56985A	20 000	Mouillage de Karembé						
FR57320B	20 000	Abords de Paagoumène						
FR569860	20 000	Baie de Yaté						
FR565400	25 000	Saint Vincent						
FR466870	60 000	Abords de Nouméa	New edition					
FR469850	60 000	De Paagoumène à Ouaco						
FR471670	60 000	De la baie de Saint-Vincent à la coupée						

		Mara			
FR57073A	20 000	Baie de Nakéty et anse de Lavaissière			
FR57073C	20 000	Kouakoué			
FR471680	60 000	De la baie de Bourail à la coupée du cap Goulvain			
FR565890	60 000	Cap Dumoulin			
FR57073D	20 000	Combi			
FR565530	20 000	Baie de Kouaoua			
FR57073E	25 000	Port-Bouquet			
FR57073F	20 000	Ouinné			
FR565540	20 000	Baie de Chasseloup - Anse de Vavouto			
FR473130 60 000		De la passe de Koné à la Coupée de l'Alliance			
Polynésie fr	ançaise				
FR667170	10 000	Phaeton			
FR565250	25 000	Phaeton			
FR462830	30 000	Tahaa			
FR368760	100 000	Wallis			
FR568760	20 000	Wallis - accès à Mata Utu et Halola			
FR266910	578 000	De Hao à Fangatau			
FR266920	574 000	Des îles Tuamotu aux îles Gambier			
FR562810	12 000	Partie sud de Tahaa			

Hereafter are listed the ENCs planned for 2014/2015:

Number	Scale 1:	Title	Comment			
Nouvelle-C	alédonie					
FR468270	60 000	Du Mont Dore à Port-Boisé - Passes de Mato et de Uatio	New edition			
FR476450	30 000	Canal de La Havannah et Canal Woodin	New edition			
FR477550	60 000	De Ponérihouen au Cap Dumoulin				
FR57755A	15 000	Baie de Poro				
FR57755B	15 000	Baie de Ugué				
FR477560	60 000	De Touho à Ponérihouen				
FR57756A	15 000	Accès à Touho				
Polynésie f	rançaise					
FR273700	1 500 000	De Mururoa à Ducie Island				
FR273470	1 500 000	De l'Archipel des Tuamotu aux Iles Australes				
FR474660	20 000	Bora-Bora				
FR574660	6 500	Passe Teavanui				

The status of ENC production in the area is:

Usage Band	Produced Cells	Planned Cells	%
1	1	1	100%
2	10	12	83%
3	6	23	26%
4	30	68	44%
5	40	150	260/
6	14	150	30%
Total	101	254	40%

## 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 RENC Harmonization sub-group to develop a RENC-to-RENC cooperation concept.

3.3. RNCs

NTR.

#### 3.4. INT charts

See next section for details.

Here is the overall plan of SHOM for INT chart production:

Scale	<b>Produced INT charts</b>	Planned INT charts	%
Small (<1/1 000 000)	7	7	100
Medium	0	0	N/A
Large (>1/100 000)	6	10	60%
Total	13	17	76%

## 3.5. National paper charts

Hereafter are listed the charts produced since the last SWPHC conference:

National	INT	Scale 1 :	Title
6554	/	20 000	Baie Chasseloup - Anse Vavouto
6687	6883	60 000	Abords de Nouméa - Passes de Boulari et de Dumbéa
6876	/	100 000	Iles Wallis - Accès à Mata Utu et Halalo
7313	/	60 000	De la passe de Koné à Ouaco
7318	/	60 000	De Poum à l'Île Pam
7375	/	60 000	De la Passe de Poya à la Passe de Koné

The charts listed below are planned in 2013 / 2014:

National	INT	Scale 1:	Title
6827	6882	60 000	Du Mont Dore à Port-Boisé - Passes de Mato et de Uatio
7466	6955	20 000	Bora Bora (to replace 6002)
7645	6898	30 000	Canal de La Havannah et Canal Woodin
7755	/	60 000	De Ponérihouen au Cap Dumoulin
			(to replace 3475 / 6528 / 6529)
7756	/	60 000	De Touho à Ponérihouen
			(to replace 6537 / 6852)
7758	/	40 000	Îles Belep - Îles Pott et Art - Îles Daos du Nord

## 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:

- New edition regarding lights was released in 2013: L.C. (Title: Océan Atlantique (Est) -Océan Indien (Ouest) - Océan Pacifique).
- Sailing directions K 10 and IN K 11 (2008 editions) were updated in 2013.
- With respect to maritime radiocommunications and broadcast stations, publication 93 (Maritime radiocommunications for traffic surveillance and pilotage) was updated in 2012.

## 4.2. Updated publications

NTR.

## 4.3. Means of delivery

SHOM continues to increase the production of its digital nautical publications. 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.

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 (<u>http://infonaut.data.shom.fr/</u>), accessible to all mariners, allows them to report directly any discrepancies between the field and SHOM's product.

## 4.4. Problems encountered

An important regulation corpus has been developed for the establishment and use of ENCs 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

In SWPHC area, SHOM has delegated his national coordinator functions to two maritime authorities, the first in New-Caledonia (Commander of the maritime zone for Nouméa, operational organism : MRCC NOUMEA for regions in NAVAREA X and XIV areas), and the secund in French Polynesia (Commandant de la zone maritime Polynésie Française, operational organism : MRCC Papeete, for region in NAVAREA XIV area).

Hereafter are listed the coordinates of those authorities:

Area	Phone number	Fax number	Email address
New Caledonia	+687 292 332	+687 292 303	mrcc.nc@lagoon.nc
French Polynesia	+689 541 615	+689 423 915	mrccpapeete@mail.pf

## 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 L update has been sent to the IHB on August 26<sup>th</sup> 2013. The C-55 charting and surveying status values regarding Region L areas under SHOM responsibility are summed up in the following tables:

	Survey status	Depth < 200m Depth > 200m						
	Survey status	Α	В	С	Α	В	С	
	Polynésie française	17	38	45	11	2	87	
L	Wallis et Futuna - France	86	0	14	0	1	99	
	Nouvelle Calédonie - France	9	21	70	2	3	95	

Charting status		Small (<1 M) Medium (1M < / < 100 000)						Large (> 100 000)			Motrie	WC SOA
		Α	В	С	А	В	С	А	В	С	weinc	VVG504
	Polynésie française	100	0	100	33	0	73,91	58	0	25,58	100	96
L	Wallis et Futuna - France	100	0	NA	100	0	NA	75	0	100	100	100
	Nouvelle Calédonie - France	100	0	100	100	0	42,86	70	0	63,16	100	100

Fig. 17: C-55 update values for survey status (top table) and charting status (down table)

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

## 7.1. Training received, needed, offered

NTR.

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

On 22<sup>nd</sup> March 2012 was signed a convention between the State and the Government of New-Caledonia, dealing with the coordination and responsibilities in the field of hydrography and maritime cartography between the Parties.

Another Convention of 22 March 2012 between the State, the Government of New-Caledonia and SHOM implements this coordination in the field of hydrography, from an operational point of view.

# 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 of the sea level and the management and issue of the resulting 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. 18: C-55 update values for survey status (top table) and charting status (down table)

Since the last conference, several installation or maintenance work have been carried out.

## New Caledonia

Tide gauges have been installed in Maré as part of the tsunami warning network. Seamarks controls have been performed. Maintenance of the existing tide gauges in the network in Nouméa/numbo, Ouinné and Hienghène has also been performed (fig. 19).



Fig. 19: Tidal gauges network covering New Caledonia and its vicinity.

## **French Polynesia**

Maintenance of the existing tide gauges in the Pacific permanent network xas conducted in Tubuai, Rangiroa, Huahine, Vairao and Papete, and the installation of new ones in Rikitea, and in Makemo in Tuamotu Archipelago (fig.20).



Fig. 20: Tidal gauges network covering French Polynesia waters.

Work is in progress in New Caledonia, Wallis and Futuna and French Polynesia to enhance SHOM's permanent tide gauges performances by enabling real-time data transmission, and to increase the network coverage in appropriate locations.

In French Polynesia, SHOM is involved in the development of the tsunami alert system, under the leadership of the CEA and the University of French Polynesia, and with the participation of other partners such as CNES, Météo-France and BRGM.

In June 2013, SHOM organized a special meeting "REFMAR days" on sea level to exchange on tide gauge instruments, data quality an 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 Androïd. 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 :

SHOM contributes to the development of the tsunami warning system for the Pacific ocean. The importance of the expansion of the real-time SHOM tide gauge network named RONIM is recognised as a key component. SHOM currently acts as the French national coordinator of sea level measurements, due to its national responsibility to conduct surveys, to maintain RONIM and to make and distribute the official tidal predictions. This network is recognized as an important tool for coastal operational oceanography, risk assessment, studies on the evolution of the mean sea level, etc.

France may have Navy ships in the SWPHC 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 ICETA Jean-Christophe Rosada. His division can be reached 24/7 by fax +33 298 221 665 or email coord.navarea2@shom.fr

#### • 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. This system is to be extended on overseas territories, where a strong swell warning is already in place by Météo-France (fig. 21).



Fig. 21: Strong swell warning system over French Polynesia waters (source: météo-france).

Joint efforts are undertaken to improve storm surge modelling, including at the coastline using observations, tide predictions, atmospheric pressure and wind forecasts.

• 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 (<u>www.geocatalogue.fr</u>), 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. 22).



Fig.22: SHOM's data portal (data.shom.fr)

Two additional services have recently been added to this portal:

- a nautical information feedback service (<u>infonaut.data.shom.fr</u>) which allows all users to send back to SHOM any information concerning depth, wrecks, coastlines, buoys, ....
- a dynamic cartographic environment (<u>cartodyn.data.shom.fr</u>) 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 (<u>http://www.shom.fr/les-services-en-ligne/portail-datashomfr/</u>). 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 member states.

Name	Chair / Vice chair	Member	Observations
CBSC		$\checkmark$	Capacity Building Sub-Committee
CSPCWG		$\checkmark$	Chart Standardisation and Paper Chart Working Group
DIPWG		$\checkmark$	Digital Information Portrayal Working Group, former CSMWH
DPSWG		✓	Data Protection Scheme Working Group
DQWG		✓	Data Quality Working Group -Last meeting in 1996
EAtHC	$\checkmark$	✓	Eastern Atlantic Hydrographic Commission
FC		$\checkmark$	Vice-chairman of Finance Committee
GEBCO		~	Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of Oceans (GEBCO
HCA		$\checkmark$	Hydrographic Commission on Antarctica
HDWG	$\checkmark$	$\checkmark$	Hydrographic Dictionary Working Group
HSSC		~	Hydrographic Services and Standards Committee, formerly known as the Committee on Hydrographic Requirements for Information Systems (CHRIS)
IRCC		$\checkmark$	Inter Regional Coordination Committee
MACHC		$\checkmark$	MESO American & Caribbean Sea Hydrographic Commission

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

MBSHC		$\checkmark$	Mediterranean and Black Seas Hydrographic Commission
MSDIWG		$\checkmark$	Marine Spatial Data Infrastructure Working Group
NIOHC		$\checkmark$	North Indian Ocean Hydrographic Commission (associate member)
NSHC		$\checkmark$	North Sea Hydrographic Commission
RSAHC		$\checkmark$	ROPME Hydrographic Commission (associate member)
SAIHC		$\checkmark$	Southern Africa and Islands Hydrographic Commission
SNPWG		$\checkmark$	Standardisation of Nautical Publications Working Group
SWPHC		$\checkmark$	South-West Pacific Hydrographic Commission
TSMAD		$\checkmark$	Transfer Standard Maintenance and Application Development
TWLWG	$\checkmark$	$\checkmark$	Tidal and Water Level Working Group
WEND		$\checkmark$	Wold-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 SWPHC 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

As part of the responsibility sharing process in the field of hydrography between the State and the Government of New Caledonia initiated in 2012, France strongly supports New-Caledonia's Government to become an Observer, in the SWPHC, in accordance with paragraph 2, d, (iv) of the SWPHC's Statutes.