



# **PORTUGAL NATIONAL REPORT**

To the

12<sup>th</sup> Meeting of the

Eastern Atlantic Hydrographic Commission

Lisboa, Portugal

14<sup>th</sup> – 16<sup>th</sup> November 2012

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## **INTRODUCTION**

This report describes the main technical activities and developments at the Portuguese Hydrographic Institute (IHPT) during the period from November 2010 to November 2012. It was elaborated in order to be presented to the 12<sup>th</sup> Conference of the EAthC, and covers the following areas: Hydrography, Cartography, Information Technologies and GIS, Marine safety, IBCEA project and Technical Assistance and Training.

### **1- HYDROGRAPHIC OFFICE**

The most relevant information is presented in Annex A.

### **2- SURVEYS**

Hydrographic surveys within IHPT are carried out mainly with multibeam systems but singlebeam echosounders still being used. Positioning is obtained using GPS (Differential or RTK/OTF mode).

IHPT has five multibeam echosounder systems (MBES): two portable systems for shallow waters (KONGSBERG EM 3002) on the Hydrographic Brigades, one for coastal waters (KONGSBERG EM 710) and two for deep waters (KONGSBERG EM 120) on the hydrographic ships NRP "D. Carlos I" and NRP "Almirante Gago Coutinho".

During the last two years, most of the hydrographic surveys to update of the cartographic products have been focused on the Portuguese continental coastal. During the mentioned time fifteen hydrographic surveys were realized in harbours and their approaches, such as: canal of Armona, Caminha and Vila Praia de Ancora, Figueira da Foz, Póvoa de Varzim and Vila do Conde, Douro and Leixões, Viana do Castelo, Ericeira, BNL and Cacilhas, Passo da Barra Sul of Lisbon harbour, Golada do Bugio, Setúbal and Funchal in the Madeira Archipelago.



Fig. 1 – Hydrographic Surveys realized in Portugal Continental between 2011 and 2012

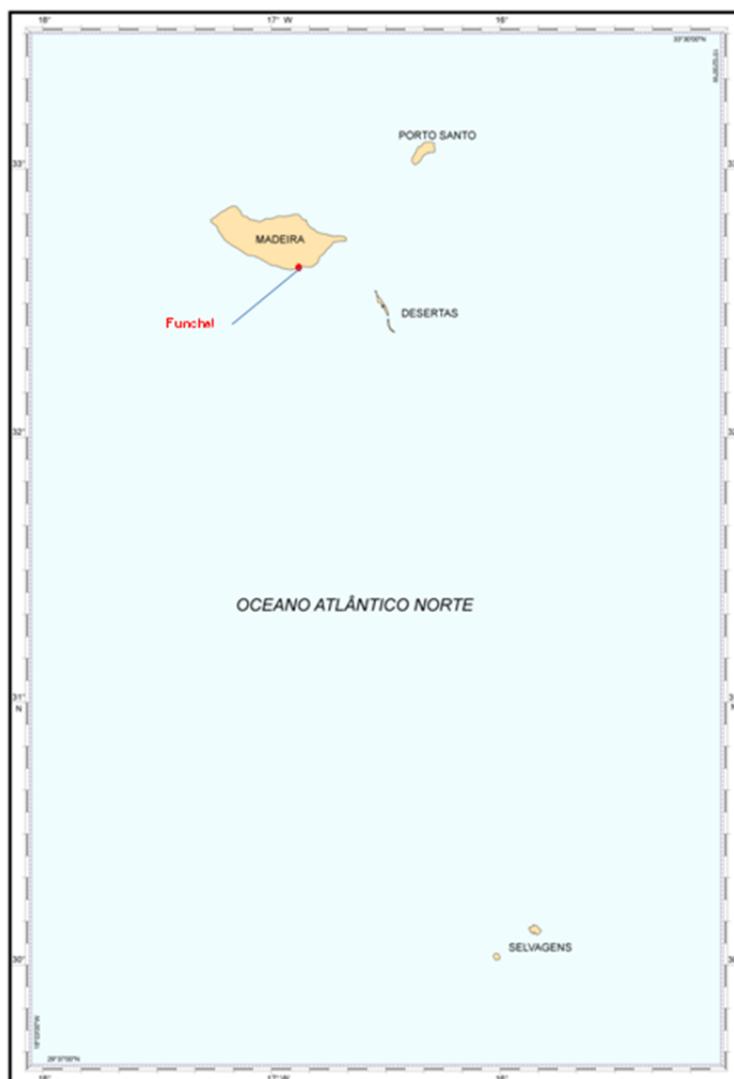


Fig. 2 – Hydrographic Surveys realized in Madeira Archipelago Jan/Feb 2011

Both hydrographic ships “D. Carlos I” and “Almirante Gago Coutinho” were employed on surveys for the project of the Extension of the Portuguese Continental Shelf and on other projects related with the environmental studies, geophysics and dynamic characterization and coastal protection. In those surveys, hydrographic and topographic integrated methods were used and, in some cases, seismic geological methods and sediment and water chemical analysis were included.

The in-house Hydrographic Data Warehouse (HDW), using an ORACLE database management system, continues to be uploaded with all the bathymetric data collected.

### **3- NEW CHARTS AND UPDATES**

Actually both the paper chart and the Electronic Navigational Chart (ENC) production are done with two different processes. The first one recurs to a Computer Assisted Cartography system (CAC), used since mid 2004 and the charts are stored in digital files, which are then used for the ENC production. The second process is based in our cartographic database, CARIS – Hydrographic Production Database (HPD), which allows a full integration of the cartographic production, to produce both paper charts and ENC cells. This system is already implemented and will be the unique cartographic production system in the near future.

IHPT continues producing nautical charts for special purposes, such as: charts to support fisheries, charts for pleasure crafts and special charts for training purposes. All those charts are in accordance with IHO specifications and were very well accepted from end users.

IHPT continues using the Print-on-Demand (PoD) system to print the nautical charts, as well as their sub products, until the end of 2012 is expected that all paper charts of the Portuguese folio will be in the PoD print.

Paper charts published since the last meeting, covering areas of the Commission, are depicted in the following figures:

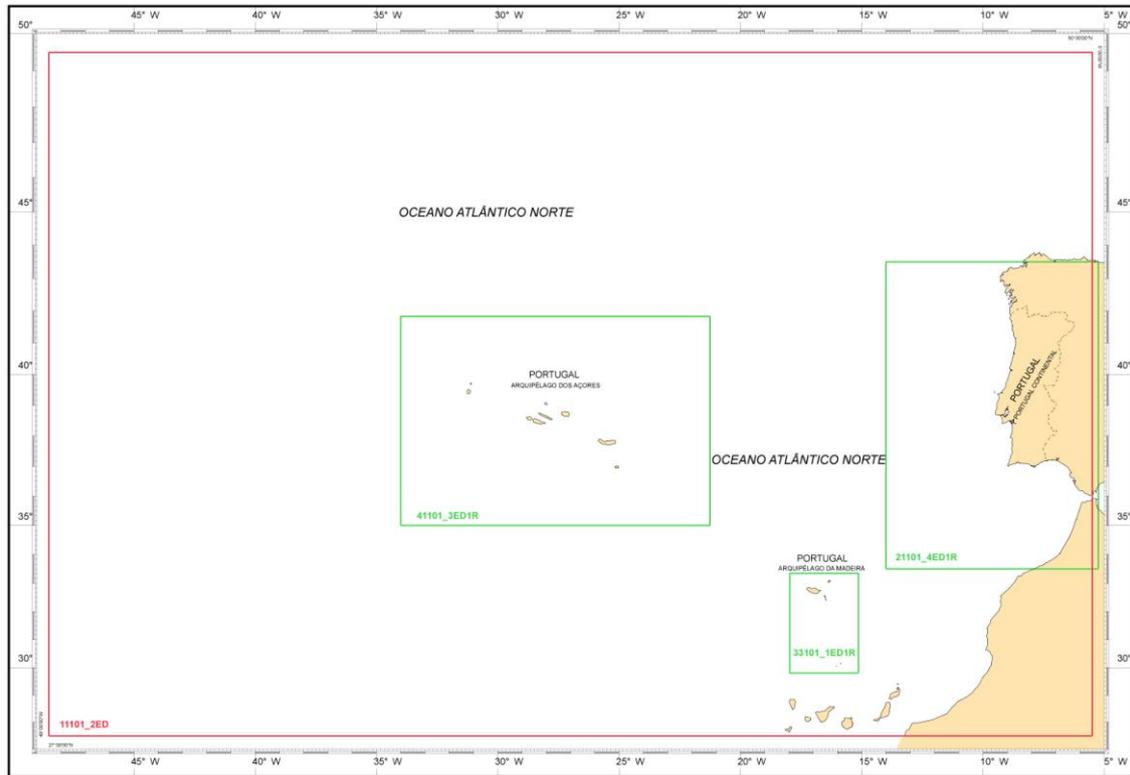


Fig. 3 – New editions in Portugal Continental, Açores Archipelago and Madeira Archipelago

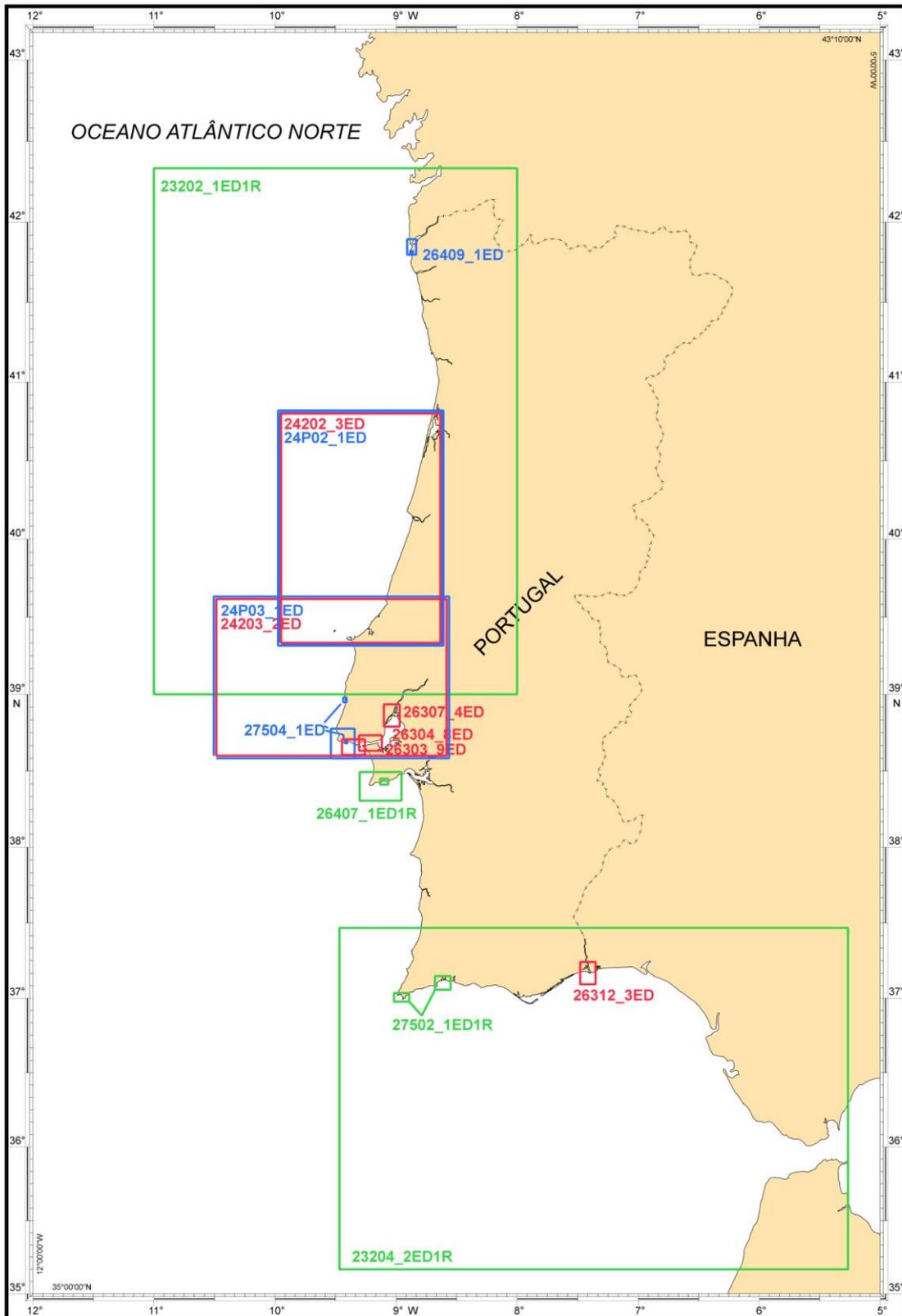


Fig. 4 – New editions in Portugal Continental

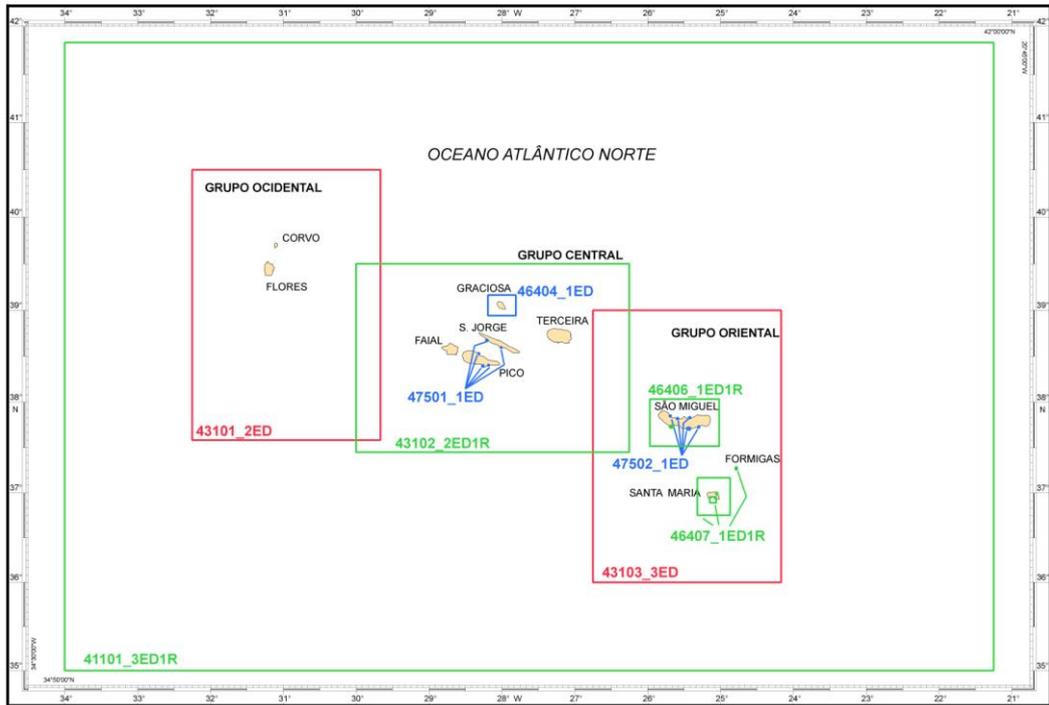


Fig. 5 – New charts and new editions in Açores Archipelago

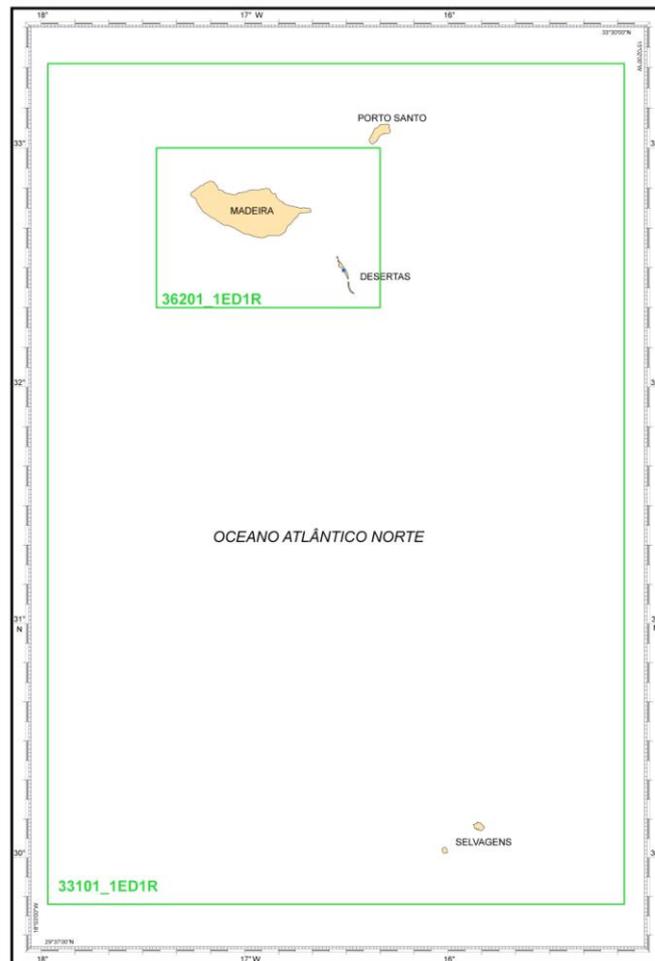


Fig. 6 – New editions in Madeira Archipelago.

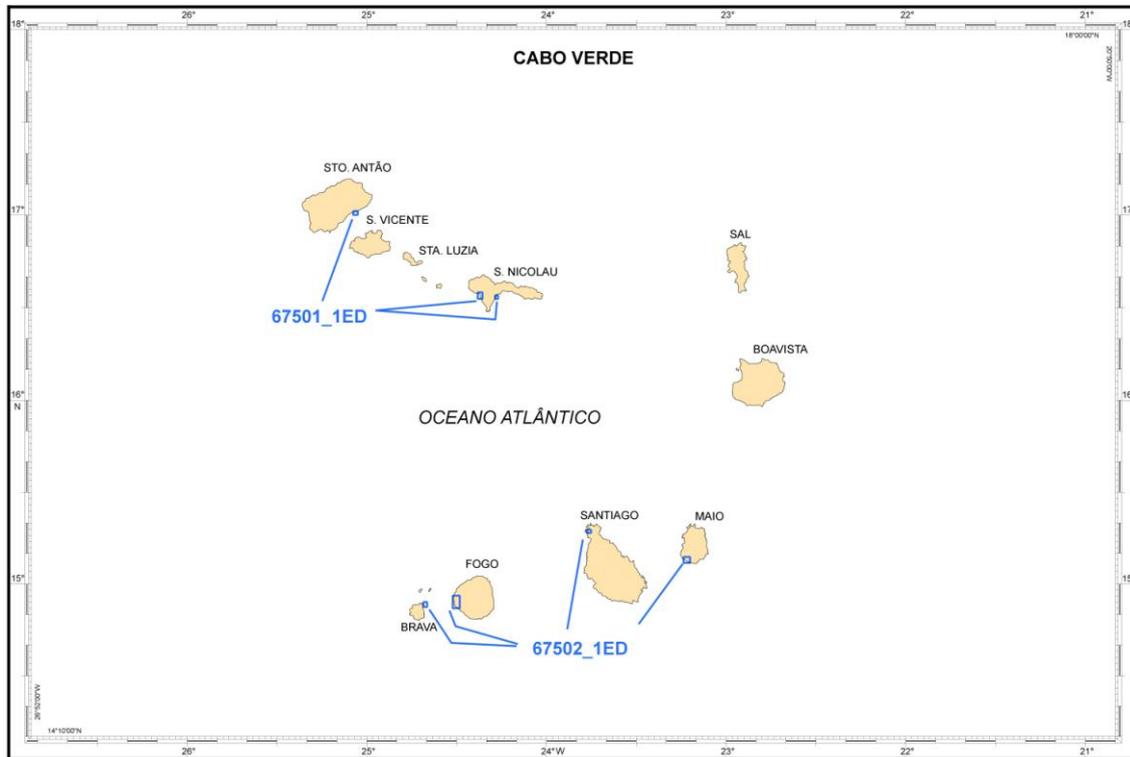


Fig. 7 – New charts in Cape Verde Archipelago

All the IHPT new charts and new editions are bilingual (Portuguese and English) and follow the INT specifications, whether or not they belong to the INT series. A list of the paper charts produced by the IHPT since 2011 is presented in Annex B.

IHPT ENC cells format is S-57/Edition 3.1. Each ENC is broadly equivalent to a paper chart both in terms of its area of coverage and its content.

IHPT is a member and participates actively in the works of the International Centre for ENCs (IC-ENC), including their Technical Experts Working Groups. Presently, 74 Portuguese ENC cells are available for distribution through IC-ENC, covering all the oceanic and coastal waters of Portugal, as well as the main harbours and their approaches.

In 2010, IHPT completed the entire folio of 74 ENCs that can be classified according to the following navigational purposes:

NP1 Overview	NP2 General	NP3 Coastal	NP4 Approaches	NP5 Harbour
1	3	11	18	41

Furthermore, Portugal produced 10 ENC's from the area of Cape Verde, classified according to the following navigational purposes:

NP2 General	NP5 Harbour
1	9

Since the last meeting, were produced 9 new ENC's (in red), and 11 new editions (in blue) depicted in the following figures:

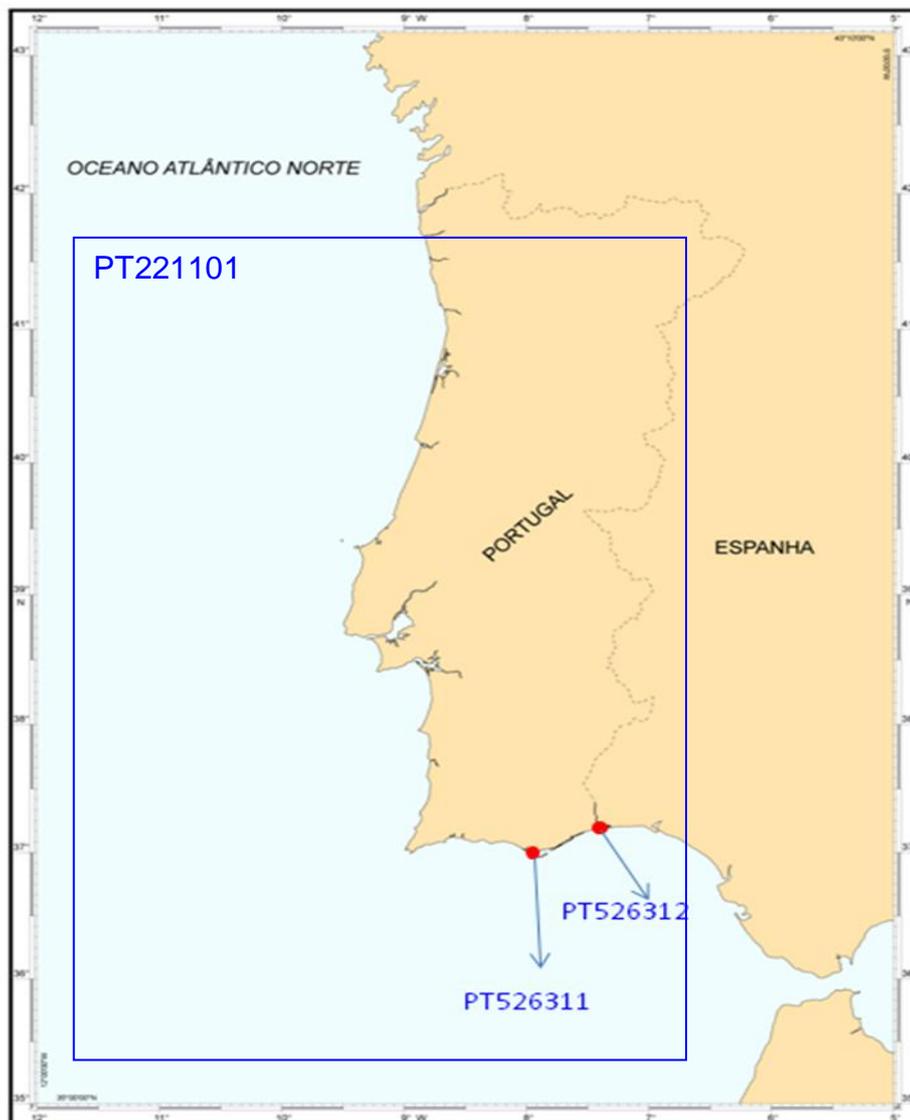


Fig. 8 - New ENC editions in Portugal Continental

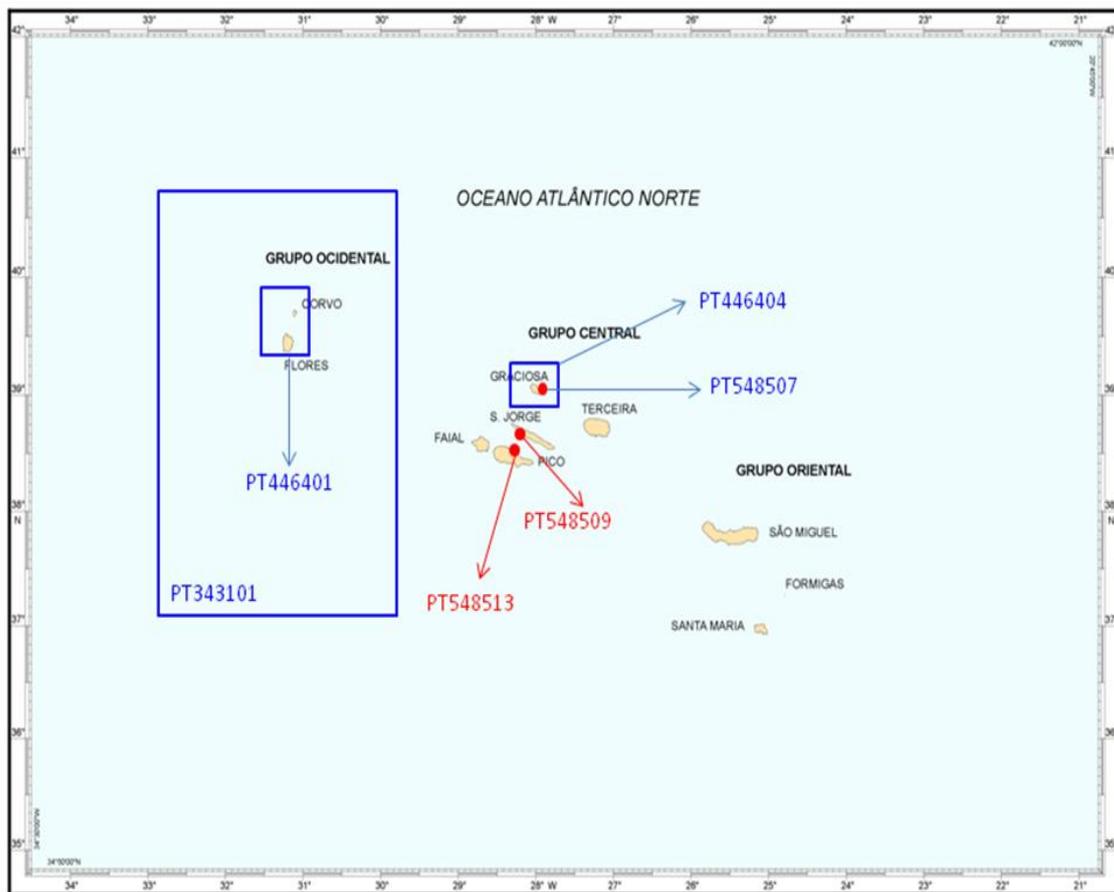


Fig. 9 - ENCs – New ENCs and new editions in Açores Archipelago

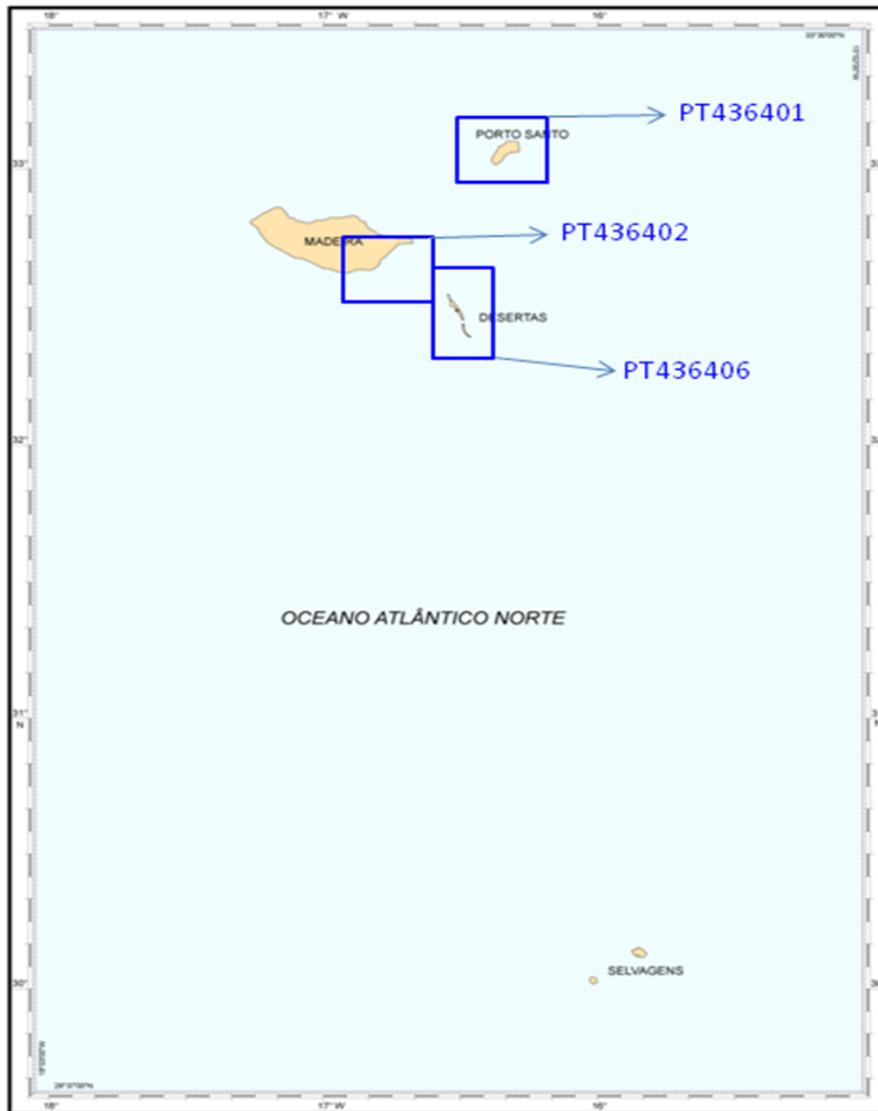


Fig. 10 – New ENC editions in Madeira Archipelago

In 2010 has completed the full ENC coverage of the Portuguese area of responsibility.

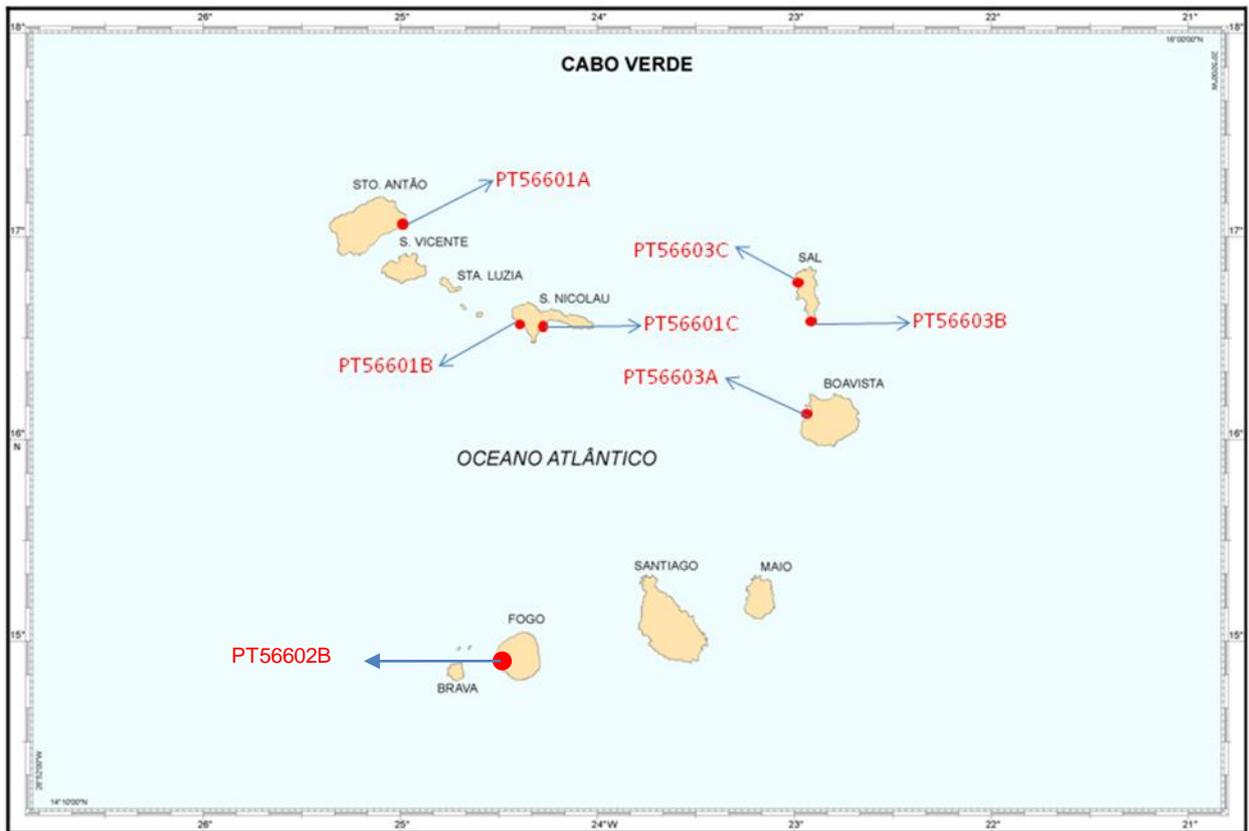


Fig. 11 – New ENCs in Cape Verde Archipelago

A list of the ENC cells produced by IHPT during the report's period is presented in Annex B.

The issuing of Notices to Mariners (NtM) which affect the paper charts and the corresponding ENC updates is one of the main works of the IHPT cartographic production teams due to the human resources required.

#### **4- NEW PUBLICATIONS AND UPDATES**

Since November of 2010, IHPT published the following nautical publications:

- Annual Group of Notices to Mariners (2011);
- Annual Group of Notices to Mariners (2012);
- Sailing Directions of Portugal – Azores Archipelago – “Arquipélago dos Açores” – Volume I and II – 3rd Edition (2010);
- List of Lights, Buoys, Beacons and Fog Signals – Portugal Volume I - 9th edition (2011);
- List of Lights, Buoys, Beacons and Fog Signals – Cape Verde Volume I – 1st

edition (2011);

- Maritime Buoyage System and other Aids to Navigation – 3<sup>rd</sup> edition (2012).

Annually, the IHPT also publishes the Tide Tables for the main harbours of Continental Portugal and of the Archipelagos of Açores and Madeira. During the last years some of the tidal constituents continued to be recalculated using more recent tidal observations. In 2002 IHPT started a project to automate the tidal stations, in order to provide remote access to their data from the IHPT web site.

## **5- MARTIME SAFETY INFORMATION**

IHPT, as the national coordinator for the Maritime Safety Information, provides a 24h service of Navigational Warnings, in cooperation with the NAVAREA II coordinator.

NAVTEX broadcast is made both in English and Portuguese and it is transmitted from Monsanto (Lisbon) and from Horta (Azores Archipelago) stations. Madeira Archipelago NAVTEX will be established in the near future.

The GMDSS coverage is yet not completed due to some delays on the establishment of the Digital Selective Call capability, which are expected to be solved in a 2013.

Monthly the IHPT publishes a Group of Notices to Mariners, containing all the permanent, preliminary, and temporary warnings in force for the corresponding period. This information, covering all navigation charts and publications of Portugal, Angola, Cape Verde, Guiné and São Tomé e Príncipe, is also available on the web site.

IHPT built a friendly on-line application – ANAVnet, supported by robust and secure databases, capable of providing either entire NtM publications, or single NtM affecting individual documents; allowing in any case consultation and printing, including entire correction pages of nautical publications and graphical annexes to glue on charts.

ANAVnet allows consultation of warnings broadcasted by any of the Portuguese NAVTEX stations (coastal and local), both in Portuguese and English languages.

Regarding the Broadcast Stations (BS) from the national differential GPS network (DGPS), the Continental Portugal component consists of two DGPS BS, with redundancy and integrity monitoring, located at Cape Carvoeiro and Sagres. There are also two BS in the Portuguese Archipelagos: One in the Açores Archipelago (Horta station) and another one in Madeira Archipelago (Porto Santo station).

AIS coastal stations are operational since the summer of 2006 both in Açores and Madeira Archipelagos and for the continental coast of Portugal in 2009 as part of the coastal VTS network managed by the Instituto Português e dos Transportes Marítimos.

## **6- C55**

Updates are listed in Annex C.

## **7- CAPACITY BUILDING**

The IHPT continues to compute and publish annually the Tide Tables for the Portuguese Speaking African Countries, including, within the EAthC area, Cabo Verde, Guiné-Bissau and S. Tomé e Príncipe.

During the report's period, under the existing Cooperation Agreement Portugal – Cape Verde, IHPT produced Two Nautical Charts and seven ENC's from Cape Verde;

In February of 2012 an IHPT officer integrated the IHO EAthC/CHAthO team that did a Technical Visit to the Guiné-Bissau in the scope of the Capacity Building program.

## **8- OCEANOGRAPHICS ACTIVITIES**

### **a. GEBCO/ IBCEA**

The IBCEA Sheet 1.02 (Portugal - Archipelago of Madeira) still in the phase of bathymetric information compilation at the scale of 1:250000.

The compilation of IBCEA Sheet 1.07 (Cabo Verde) was not initiated yet.

### **b. Tide Gauge Network**

The Portuguese tide gauge network consists of 22 tidal stations spread over continental Portugal, Açores and Madeira Archipelagos. Most of the stations belong to the IHPT which is in charge of the installation, maintenance and data

collection (some with cooperation of harbor authorities). Cascais and Lagos stations are property of the Portuguese Geographic Institute and Horta and Angra do Heroísmo tidal stations have gauges installed by the Department of Fisheries of the Açores University, although IHPT also collects and processes the data from these stations. The Portuguese tide gauge network has installed the following tide gauge technologies: radar (17 stations with VegaPuls and Krohne gauges), acoustic (3 stations with Next Generation Water Level Measurement Systems) and also pressure (from Druck and LevelTroll) and float and stilling well gauges (from A.OTT). Annex D depicts the Portuguese tide gauge network.

Portugal is a member of the Global Sea Level Observing System (GLOSS) contributing with sea level data from Cascais, Ponta Delgada, Lajes das Flores and Funchal. As a GLOSS member, mean sea level data is regularly sent to the Permanent Service for Mean Sea Level (PSMSL) based in Liverpool at the UK National Oceanography Centre.

Sea level data is now being stored in a new database, "TIDE", developed during 2011. "TIDE" allows the storage of sea level heights, mean sea levels, tide predictions, harmonic constants and tidal levels, along with the corresponding metadata. Data from stations in real time is directly sent to this database.

## **9- OTHER ACTIVITIES**

### **a. Information technologies and GIS**

IHPT has several portals at Internet and Intranet (hidrografico.pt) presenting information about its organization, main activities, products offered and specific geo-spatial on-line data.

Notices to Mariners and Navigational Warnings issued by the IHPT are also available at IHPT Internet portal ANAVNet, as well as general information on the Portuguese Nautical Charts and Nautical Publications.

Databases and related applications are being developed using ORACLE spatial. They include not only hydrographic and cartographic applications but also environmental and coastal management products. The basis of these is IDAMAR (Geographic Spatial Data Infrastructure for the Marine Environment).

IDAMAR is a SDI for the marine environment under development at IHPT and deals with technical and scientific data within IHPT. The main IDAMAR's development objectives are to improve the internal production processes and to support the operational, planning and strategic decision-making. Its core are several Spatial database that are explored in several ways producing tables, charts, web pages and reports, and feeding several GIS packages.

The use of geo-spatial data has been improved with the OGC standards employment and two portals were dedicated to provide the information.

This SDI is also being used to support IC-ENC by providing a world ENC availability catalogue (independent of maker or distributor) to support the mariners.

In more recent years IHPT has improved data safeguard by the use of Virtualization Technology which allows much more flexibility on servers and workstations management or deployment.

Document archiving has also been improved by the use of digital catalogues accessed through local network.

IHPT also reorganized its Historical Cartographic paper charts using digitalization and indexing it use with GIS technology. All technical reports has been digitized and put into a database.

## **b. Courses in Hydrography**

IHPT School of Hydrography and Oceanography provides Specialization Courses in Hydrography (FIG/IHO Category A and B). During the period of this report attended the courses the following students:

- 2010/2011 – Cat. B - 4 militaries of the Portuguese Navy;
- 2011/2012 – Cat. A - 5 militaries of the Portuguese Navy and 3 civilians (one Spanish);
- 2012/2013 (ongoing) – Cat. B - 3 militaries of the Portuguese Navy and 3 Portuguese civilians;

# ANNEX A

## HYDROGRAPHIC OFFICE GENERAL INFORMATION PORTUGAL (PORTUGUESE REPUBLIC)

<b>INSTITUTO HIDROGRAFICO</b> <b>Rua das Trinas – 49</b> <b>1249-093 LISBOA</b>	
<b>Department of which the Hydrographic Office is part</b> <i>Ministère dont dépend le Service Hydrographique Ministerio del que depende el Servicio Hidrográfico</i>	Ministry of National Defense – Navy.
<b>Principal functions of the H.O. -</b> <i>Attributions principales du S.H. Principales funciones del S.H.</i>	Hydrographic Surveys, Analogue and Digital Nautical Charts, Sailing Directions, Lights and Radio Signals Lists, Notices to Mariners (monthly), Immediate Navigational Warnings, Tide Tables, Tidal Currents, Magnetic Compass Certification and Adjustment. Aids to Navigation Plans. DGPS, AIS projects. Oceanography. Provision of geophysical and environmental information for scientific and defense issues
<b>National day - Fête nationale – Fiesta nacional</b>	10 June
<b>Telephone :</b> <b>Fax :</b> <b>E-mails :</b> <b>WEB site:</b>	+ 351 21 094 3000 + 351 21 094 3299 <a href="mailto:dirgeral@hidrografico.pt">dirgeral@hidrografico.pt</a> <a href="mailto:dirtecnica@hidrografico.pt">dirtecnica@hidrografico.pt</a> <a href="mailto:hidrografia@hidrografico.pt">hidrografia@hidrografico.pt</a> <a href="http://www.hidrografico.pt">http://www.hidrografico.pt</a>
<b>Date of establishment and Relevant National Legislation –</b> <i>Date de fondation et législation nationale concernée – Fecha de establecimiento y Leyes nacionales dereferencia</i>	22 September 1960 • Territorial Sea: Law n° 34/2006 • Baseline: Laws n° 2130/66 and 495/85 • EEZ: Laws n° 34/2006, n° 119/78 and n° 52/85
<b>Name and rank of the Director or Head -</b> <i>Nom et grade du directeur – Apellidos y graduación del Director</i>	Vice-admiral Agostinho Ramos da Silva, General Director
<b>Tonnage – Tonelaje</b>	2011 = 1,334,011
<b>Total Budget - Budget total – Presupuesto Total</b>	8 million Euros
<b>Staff employed - Effectifs – Plantilla</b>	For details, consult the WEB site: <a href="http://www.hidrografico.pt">http://www.hidrografico.pt</a>
<b>N° of charts published - Nombres de cartes publiées –</b> <i>N° de cartas publicadas</i>	224
<b>N° of INT charts published – Nombres de cartes INT publiées - N° de cartas INT publicadas.</b>	33
<b>N° of ENC cells published – Nombres de cellules ENC publiées - N° de células ENC publicadas.</b>	74
<b>Type of publications produced (e.g. Tide Tables, Sailing Directions, List of Lights etc.) – Type de publications produites (par ex: Tables des marées, Instructions nautiques, Livres des Feux, etc. - Tipo de publicaciones producidas (por ej: Tablas de mareas, Derroteros, Libros de Faros etc.)</b>	<ul style="list-style-type: none"> <li>- Catalogue of Charts and Nautical Publications;</li> <li>- Catalogue of Nautical Charts of Portugal;</li> <li>- Tide Tables – Volume I – Portugal;</li> <li>- Tide Tables – Volume II – African Portuguese Speaking Countries;</li> <li>- List of Radio Aids and Services;</li> <li>- List of Lights – Volume I – Portugal;</li> <li>- List of Lights – Volume II – African Portuguese Speaking Countries;</li> <li>- Sailing Directions – Continental Portugal – Volumes I to III;</li> <li>- Sailing Directions – Azores Archipelago;</li> <li>- Sailing Directions – Madeira Archipelago;</li> </ul>

	- Sailing Directions - Angola and São Tomé e Príncipe Ports Pilot; - Sailing Directions - Cabo Verde – Volumes I to V; - Sailing Directions (Pleasure Craft) – Continental Portugal (Portuguese/English);		
<b>Surveying vessels/ Aircraft – Bâtiments</b> <i>hydrographiques/aéronefs – Buques</i> <i>hidrográficos/ Aeronaves</i> <b>Almirante GAGO COUTINHO</b> <b>D. CARLOS I</b> <b>ANDRÓMEDA</b> <b>AURIGA</b> <b>ATLANTA</b> <b>CORAL</b> <b>FISÁLIA</b>	<b>Displacement</b>  2285 2285 245 245 38.7 38.7 38.7	<b>Date Launched</b>  1985 1989 1985 1987 1981 1981 1981	<b>Crew</b>  49 49 24 24 3 3 3
<b>Other information of interest – Autres informations utiles - Otra información de interés.</b>	IHPT School of Hydrography and Oceanography provides Hydrography and Oceanography FIG/IHO category A and B courses.		

## ANNEX B

### Nautical and Electronic Navigational Charts Published by Portugal since 2011

Since the last Meeting, INT charts published covering areas of the Commission are listed in the following table:

<b>NAUTICAL CHARTS</b>					
Number		Title	Scale 1:	Issue	
National	INT			National	INT
21101	1081	Cabo Finisterre a Casablanca	1 000 000	4 <sup>th</sup> Abr 2002	Fev 2012
33101	1921	Arquipélago da Madeira	350 000	1 <sup>st</sup> Nov 2003	Mai 2012
41101	1089	Arquipélago dos Açores	1 000 000	3 <sup>rd</sup> Jun 2000	Jun 2011
23202	1810	Cabo Silleiro ao Cabo Carvoeiro	350 000	1 <sup>st</sup> Abr 2001	Mai 2012
24202	1814	Aveiro a Peniche	150 000	3 <sup>rd</sup> Dez 2011	-
24203	1815	Nazaré a Lisboa	150 000	2 <sup>nd</sup> Abr 2012	-
26303	1875	Baía de Cascais e Barras do Rio Tejo (Porto de Lisboa)	15 000	9 <sup>th</sup> Mai 2012	-
26304	1876	Porto de Lisboa (de Paço de Arcos ao Terreiro do Trigo)	15 000	8 <sup>th</sup> Mai 2012	-
26307	1879	Rio Tejo (de Sacavém a Vila Franca de Xira)	15 000	4 <sup>th</sup> Out 2011	-
		A – De Alhandra a Vila Franca de Xira	15 000		
36201	1919	Ilha da Madeira e Ilhas Desertas	100 000	1 <sup>st</sup> Dez 2002	Jul 2012
43101	1892	Arquipélago dos Açores – Grupo Ocidental	300 000	2 <sup>nd</sup> Ago 2011	
43102	1893	Arquipélago dos Açores – Grupo Central	300 000	2 <sup>nd</sup> Jul 1999	Jun 2011
43103	1894	Arquipélago dos Açores – Grupo Oriental	300 000	3 <sup>rd</sup> Dez 2011	-
46406	1890	Ilha de São Miguel	100 000	1 <sup>st</sup> Ago 2001	Jul 2012
		A – Porto de Ponta Delgada	10 000		

Since the last Meeting, national paper charts published covering areas of the Commission are listed in the following table:

<b>NAUTICAL CHARTS</b>					
Number		Title	Scale 1:	Issue	
National	INT			National	INT
11101	-	Portugal Continental, Arquipélago dos Açores e Arquipélago da Madeira	2 500 000	2 <sup>nd</sup> Jun 2012	-

26312	-	Barra e Porto de Vila Real de Santo António	15 000	3 <sup>rd</sup> Mai 2011	-
26407	-	Sesimbra	40 000	1 <sup>st</sup> Jun 2002	Nov 2011
		A – Porto de Sesimbra	7 500		
26409	-	Caminha a Vila Praia de Âncora	40 000	1 <sup>st</sup> Dez 2011	-
		A – Vila Praia de Âncora	5 000		
27502	-	Portos e Enseadas (Costa Sul – Zona Oeste)		1 <sup>st</sup> Jul 1999	Set 2012
		A – Enseadas de Belixe, Sagres e Baleeira	15 000		
27504	-	Portos e Enseadas (Costa Oeste – Zona Centro)		1 <sup>st</sup> Dez 2010	-
		A – Cascais	30 000		
		B – Baía de Cascais	7 500		
46404	-	Ilha Graciosa	50 000	1 <sup>st</sup> Jan 2011	-
		A – Santa Cruz	5 000		
		B – Folga	5 000		
47501	-	Portos das Ilhas de São Jorge e do Pico		1 <sup>st</sup> Dez 2010	-
		A – Calheta (Ilha de São Jorge)	5 000		
		B – Velas (Ilha de São Jorge)	5 000		
		C – São Roque (Ilha do Pico)	5 000		
67501	-	Portos das Ilhas de Santo Antão e de São Nicolau		1 <sup>st</sup> Jul 2011	-
		A – Porto Novo	5 000		
		A – Tarrafal	5 000		
		B – Preguiça	7 500		
67502	-	Portos das Ilhas Brava, Fogo, Santiago e Maio		1 <sup>st</sup> Mar 2012	-
		A – Furna	7 500		
		B – Vale de Cavaleiros	10 000		
		C – Tarrafal	5 000		
		D – Porto Inglês	10 000		
46407	-	Ilha de Santa Maria e Ilhéus das Formigas		1 <sup>st</sup> Mar 2000	Set 2012
		Ilha de Santa Maria	75 000		
		A – Porto de Vila do Porto	7 500		
		B – Baía de São Lourenço	7 500		
		Ilhéus das Formigas	7 500		
47502	-	Portos da Ilha de São Miguel		1 <sup>st</sup> Nov 2010	-
		A – Capelas	5 000		
		B – Rabo de Peixe	5 000		

	<b>C – Porto Formoso</b>	5 000		
	<b>D – Vila Franca do Campo</b>	7 500		
	<b>E – Ribeira Quente</b>	5 000		

Since the last Meeting, other charts (fisheries charts) published covering areas of the Commission are listed in the following table:

<b>NAUTICAL CHARTS</b>					
Number		Title	Scale 1:	Issue	
National	INT			Edition	
<b>24P02</b>	-	<b>Aveiro a Peniche</b>	150 000	1 <sup>st</sup> Dez 2011	-
<b>24P03</b>	-	<b>Nazaré a Lisboa</b>	150 000	1 <sup>st</sup> Jan 2012	-

<b>ELECTRONIC NAVIGATIONAL CHARTS</b>						
Number	NC	UB	Title	Edition	Date	
PT 221101	21101	2	PORTUGAL CONTINENTAL – MONTE DE S. GYAN A AYAMONTE	2	FEB12	
PT 343101	43101	3	ARQUIPELAGO DOS AÇORES – GRUPO OCIDENTAL	3	JAN12	
PT 436401	36401	4	ARQUIPELAGO DA MADEIRA – ILHA DO PORTO SANTO	3	NOV11	
PT 436402	36402	4	ARQUIPELAGO DA MADEIRA – PONTA GORDA À PONTA DE S. LOURENÇO	4	JAN11	
PT 436406	36406	4	ARQUIPELAGO DA MADEIRA – ILHAS DESERTAS	2	FEB11	
PT 446401	46401	4	ARQUIPÉLAGO DOS AÇORES – ILHA DAS FLORES E ILHA DO CORVO	3	NOV11	
PT 446404	46404	4	ARQUIPÉLAGO DOS AÇORES – ILHA GRACIOSA	2	JUL11	
PT 526311	26311	5	BARRA E PORTOS DE FARO E OLHÃO	3	FEB11	
PT 526312	26312	5	BARRA E PORTOS DE VILA REAL DE SANTO ANTÓNIO E AYAMONTE	2	NOV11	
PT 528505	26402	5	PORTO DE LEIXÕES E BARRA DO RIO DOURO	5	JAN12	
PT 548507	46404	5	ILHA GRACIOSA – PORTO DE VILA DA PRAIA	2	JUL11	
PT 548509	47501	5	ILHA DE S. JORGE – PORTO DAS VELAS	1	DEC10	
PT548513	47501	5	ILHA DO PICO – PORTO DE S. ROQUE	1	DEC10	
PT 56601A	67501	5	ARQUIPÉLAGO DE CABO VERDE – ILHA DE SANTO ANTÃO – PORTO NOVO	1	JAN12	
PT 56601B	67501	5	ARQUIPÉLAGO DE CABO VERDE – ILHA DE SÃO NICOLAU – PORTO DO TARRAFAL	1	JAN12	
PT 56601C	67501	5	ARQUIPÉLAGO DE CABO VERDE – ILHA DE SÃO NICOLAU – PORTO DA PREGUIÇA	1	JAN12	

PT 56602B	67502	5	ARQUIPÉLAGO DE CABO VERDE – ILHA DO FOGO – PORTO DE VALE CAVALEIROS	1	OCT11
PT 56603A	67503	5	ARQUIPÉLAGO DE CABO VERDE – ILHA DA BOAVISTA – PORTO DA BAÍA DA PALMEIRA	1	APR11
PT 56603B	67503	5	ARQUIPÉLAGO DE CABO VERDE – ILHA DA BOAVISTA – BAÍA DE SANTA MARIA	1	APR11
PT 56603C	67503	5	ARQUIPÉLAGO DE CABO VERDE – ILHA DO SAL – PORTO DE SAL REI	1	APR11

# ANNEX C

## UPDATES TO C55

### Status of Hydrographic Surveys

		<b>A</b>	<b>B</b>	<b>C</b>
<b>Portugal (Continental Portugal)</b>	depths < 200 m	100	0	0
	depths > 200 m	99	0	1
<b>Portugal (Madeira Archipleago)</b>	depths < 200 m	65	0	35
	depths > 200 m	66	1	33
<b>Portugal (Açores Archipelago)</b>	depths < 200 m	60	40	0
	depths > 200 m	55	1	44

### Status of Nautical Charting

		<b>A</b>	<b>B</b>	<b>C</b>
<b>Portugal (Continental Portugal)</b>	Offshore passage / Small	100	0	100
	Coastal passage / Medium	100	0	100
	Approaches Ports / Large	100	0	100
<b>Portugal (Madeira Archipleago)</b>	Offshore passage / Small	100	0	100
	Coastal passage / Medium	100	0	100
	Approaches Ports / Large	100	0	100
<b>Portugal (Açores Archipelago)</b>	Offshore passage / Small	100	0	100
	Coastal passage / Medium	100	0	100
	Approaches Ports / Large	100	0	100

The other items have no changes.

# ANNEX D

## Portuguese Tide Gauge Network

