# hidrográfico / marinha · portugal





#### SUMMARY

#### Surveys

- Cartographic production
- Nautical Publications
- Safety of Navigation
- Capacity Building/Cooperation
- Education & Training



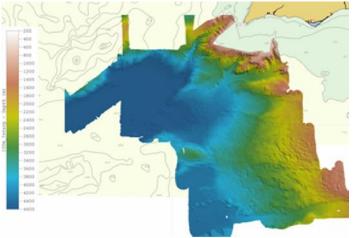


#### 2 Oceanic hydrographic ships



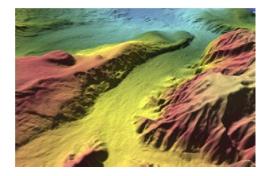
hidrográfico

narinha•portugal



#### Multibeam systems:

- Deep waters (kongsberg em 120/122)
  - 2 Systems (depths 50 11,000 m)
- Medium depths (кондявега ем 710)
  - I System (depths 3 2,000 m)









#### 2 Coastal hydrographic ships and several survey launches







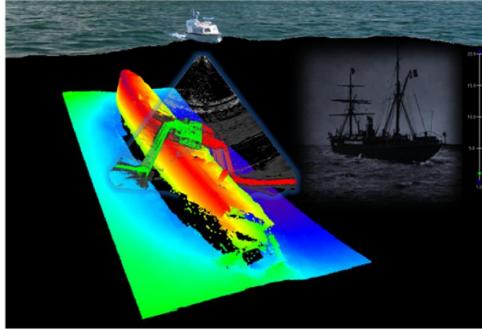






## SURVEYS

- Shallow waters
  - 2 multibeam systems (KONGSBERG EM 3002)
  - I multibeam system (KONGSBERG EM 2040C)
  - Bathymetric sonar (KONGSBERG GeoSwath 500 Plus)







## SURVEYS



#### Mater Colum Acros mastro amarração mastro cabo de amarração cabo de amarração do cabo de amarração

Water Column Acoustic Reflectivity

#### Multi Vessel Profiler

00





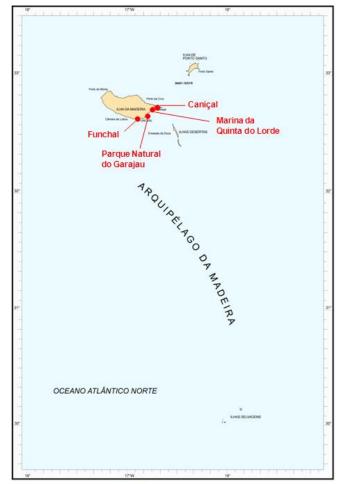




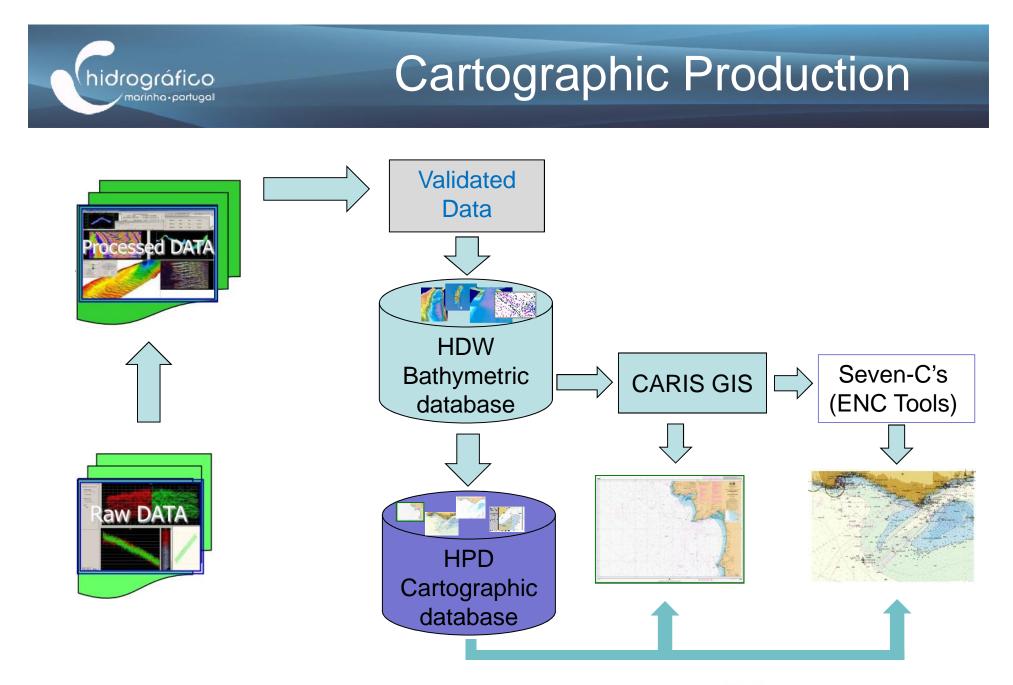
hidrográfico

marinha•portugal

17 Hydrographic surveys in harbours and approaches.

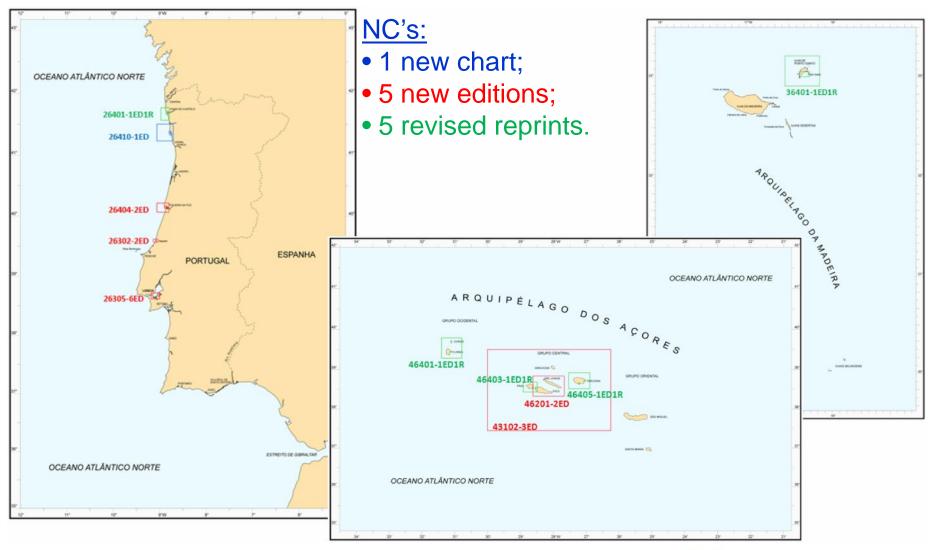








#### Nautical Charts



Conhecer o mar para que todos o possam usar



hidrográfico

marinha.portugal

#### Print-on-Demand (PoD)



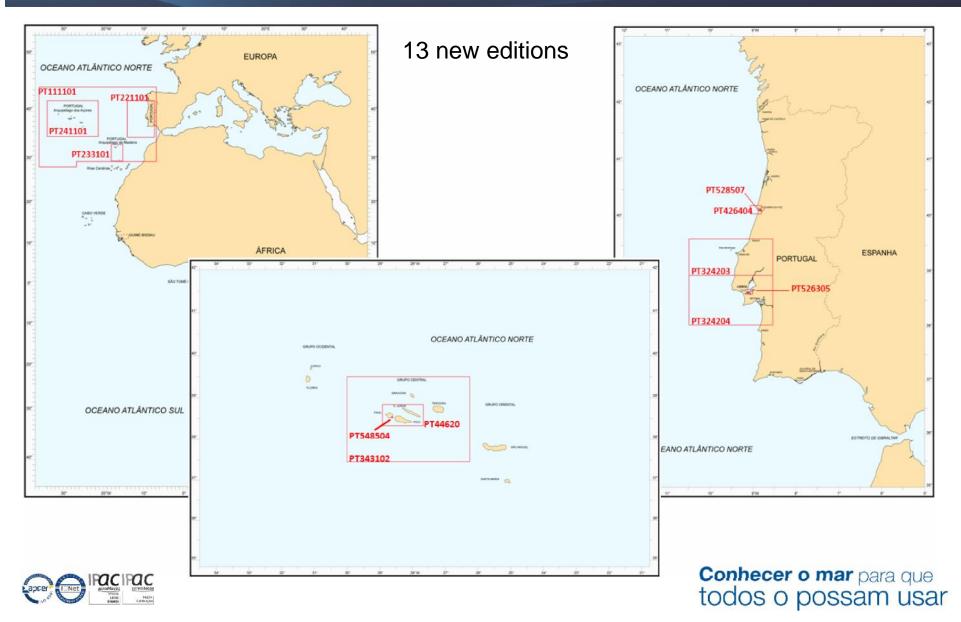


All paper charts of the Portuguese folio are on PoD.





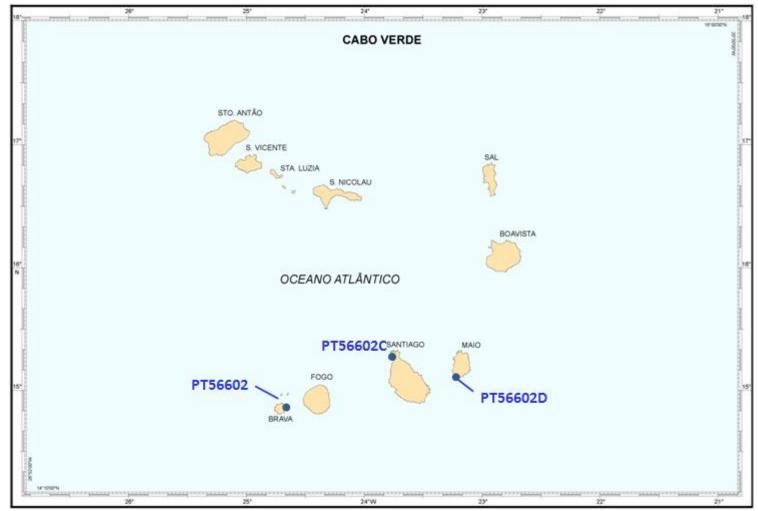
#### **Electronic Navigational Charts**





#### **Electronic Navigational Charts**

3 new ENC's

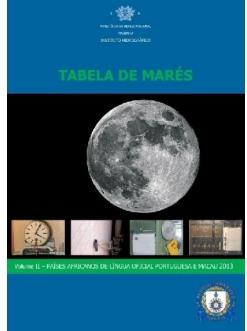






#### **Nautical Publications**

- Annual Group of Notices to Mariners (2013);
- Annual Group of Notices to Mariners (2014);
- List of Lights, Buoys, Beacons and Fog Signals Portugal Volume I 10<sup>th</sup> edition (2013);
- List of RadioBeacons and Services Volume I 6<sup>nd</sup> edition (2013);
- Maritime Buoyage System and other Aids to Navigation 3<sup>rd</sup> edition (2013);
- Nautical Communications Table 1<sup>st</sup> edition (2013);
- Maritime Buoyage System Table 1<sup>st</sup> edition (2013);
- Tide Tables (Cape Verde, Guinea-Bissau, Sao Tome and Principe, Angola and Mozambique main harbours).

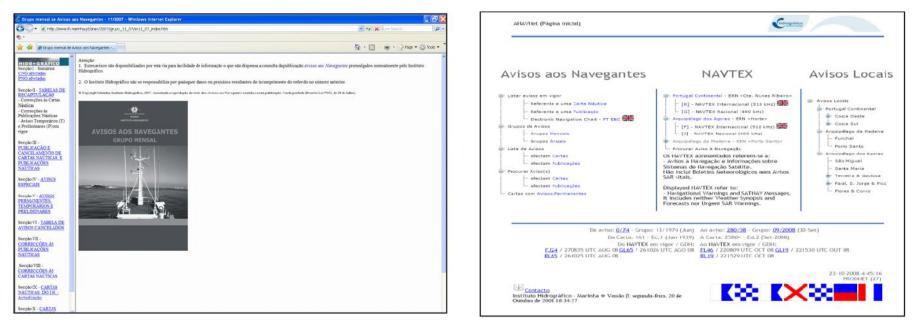






## Safety of Navigation

- NAVTEX broadcast English/Portuguese (3 stations Continental Portugal, Azores and Madeira archipelagos)
- Notices to Mariners available on IHPT website in PDF
- ANAVnet provides NtM publications or single NtM affecting specific documents and NAVTEX navigational warnings







## **Capacity Building**

- IHPT produced three ENCs from Cape Verde.
- Hydrographic surveys and new editions of the Nautical Charts and ENC's of the following harbours:
  - Porto de Palmeira Ilha do Sal;
  - Porto de Porto Novo Santo Antão;
  - Porto de Vale de Cavaleiros Ilha do Fogo;
  - Porto da Furna Ilha Brava.





#### Collaboration

IHPT and IHM (Spain) have a collaboration project.

Two joint hydrographic surveys:

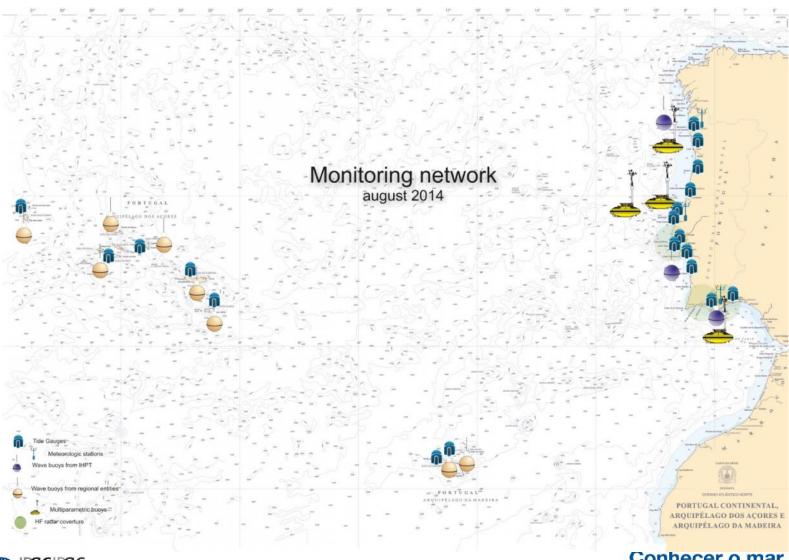
- Guadiana River small survey vessels;
- Lisbon Canyon with 3 hydrographic ships.











Enterna Contractor Contractor



## Information technologies & GIS

#### Previsões disponíveis



na agitação marítima Wave forecast <u>+ Ver mais</u>



no surf para Portugal e Angola Wave & surf forecast for Portugal and Angola + Ver surf para Portugal + Ver surf para Angola



na navegação de recreio Wave forecast for sailing <u>+ Ver mais</u>



na arte-xávega de Espinho à Praia da Vieira da Costa de Caparica ao Espichel G

na "arte-xávega" Wave forecast for arte-xávega boats + Ver de Espinho à Praia da Vieira + Ver da Costa de Caparica ao Espichel



nos portos e aproximações Wave forecast at harbour entrance <u>+ Ver mais</u>



nas praias Wave forecast for the beach <u>+ Ver mais</u>





### **Education & Training**

#### School of Hydrography and Oceanography

Provides Specialization Courses in Hydrography (FIG/IHO/ICA Category A and B) taught in Portuguese.

2012/2013 – Cat. B - 3 petty officers and 3 civilians.
2013/2014 – Cat. A – 5 officers and 3 civilians, one Spanish.
2014/2015 (about to start) - Cat. B - 3 petty officers and 1 civilian. IHPT also expected 6 students from Angola and 2 from Morocco.





## **Education & Training**

Since 1	1979
---------	------

hidrográfico

marinha · portugal

	Portugal
Militaries	120
Civilians	27
Subtotal:	147

Mozambique	24
Angola	19
Guinea-Bissau	7
Tunisia	4
S. Tome and Principe	4
Cape Verde	3
Morocco	2
Macao (China)	2
Spain	2
Subtotal:	67
TOTAL	214



# hidrográfico marinha.portugal