



PORTUGAL

NATIONAL REPORT

14TH MEETING OF THE EASTERN ATLANTIC HYDROGRAPHIC COMMISSION

Cadiz, Spain
18th – 20th October 2016

INSTITUTO HIDROGRÁFICO

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IHPT | Head of the Hydrography Division
2016-10-18

- **THE HYDROGRAPHIC OFFICE**
- **SURVEYS, CHARTS AND NAUTICAL PUBLICATIONS**
- **MARITIME SAFETY INFORMATION**
- **CAPACITY BUILDING**
- **OCEANOGRAPHIC ACTIVITIES**
- **COLLABORATION WITH OTHER COUNTRIES**
- **OTHER ACTIVITIES**

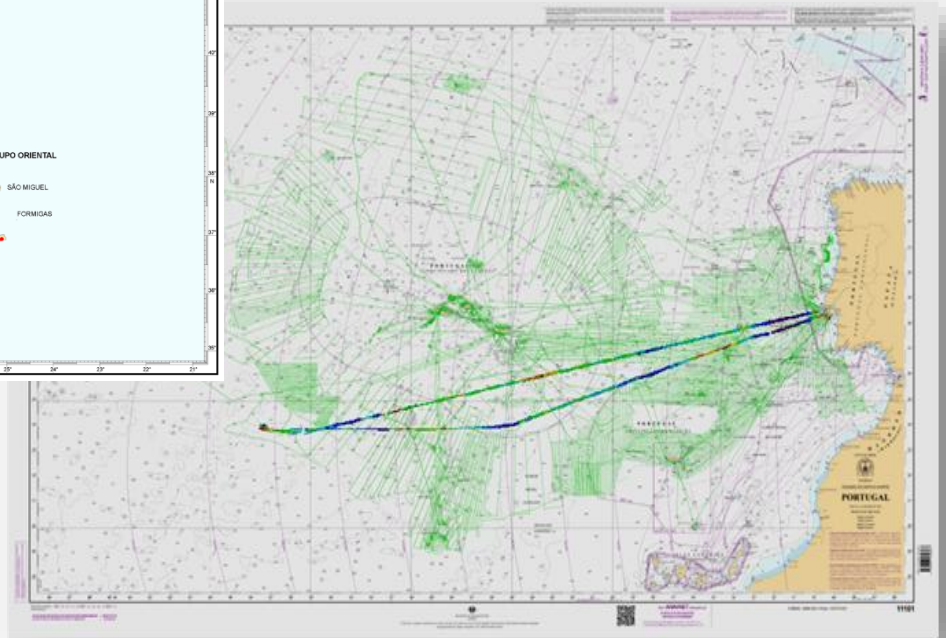
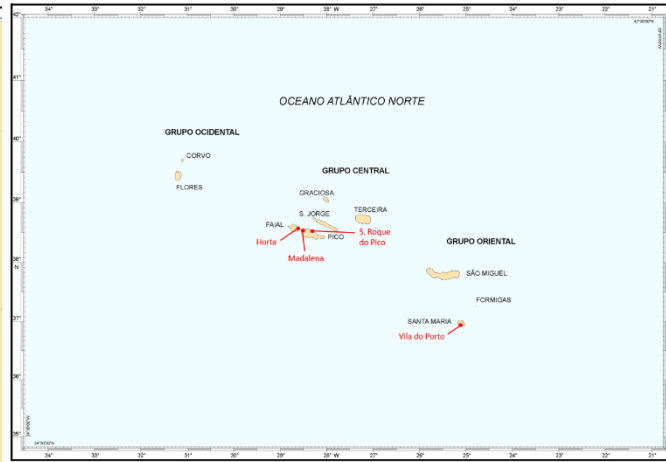
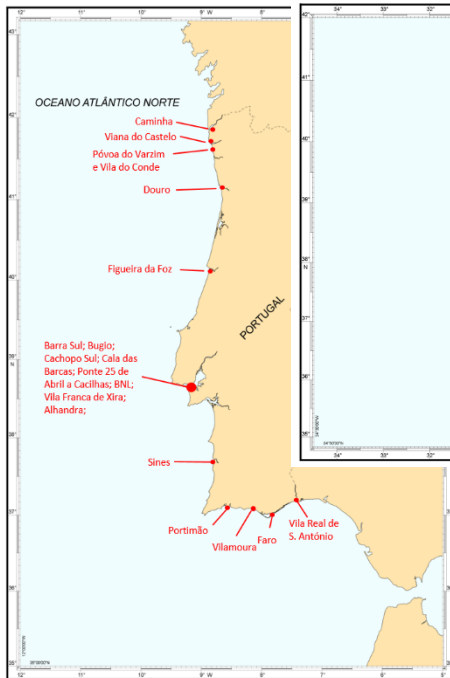
Part of the Navy | Hydrographic Office | State Laboratory

Ensuring activities related to science and techniques of the sea, with a view to their military application. Contribute to the country's development (science and protection of the marine environment).



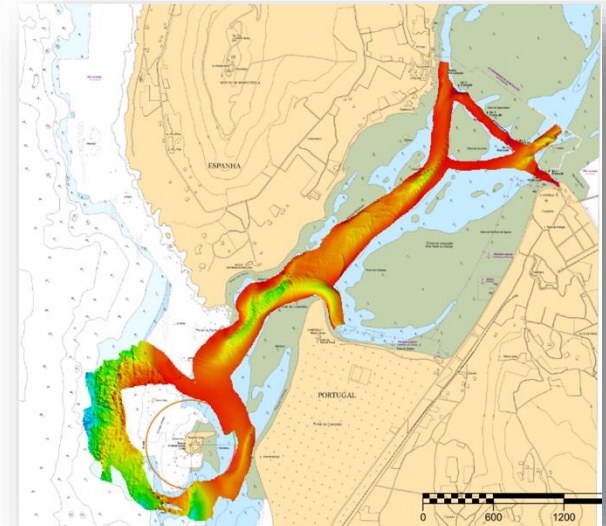
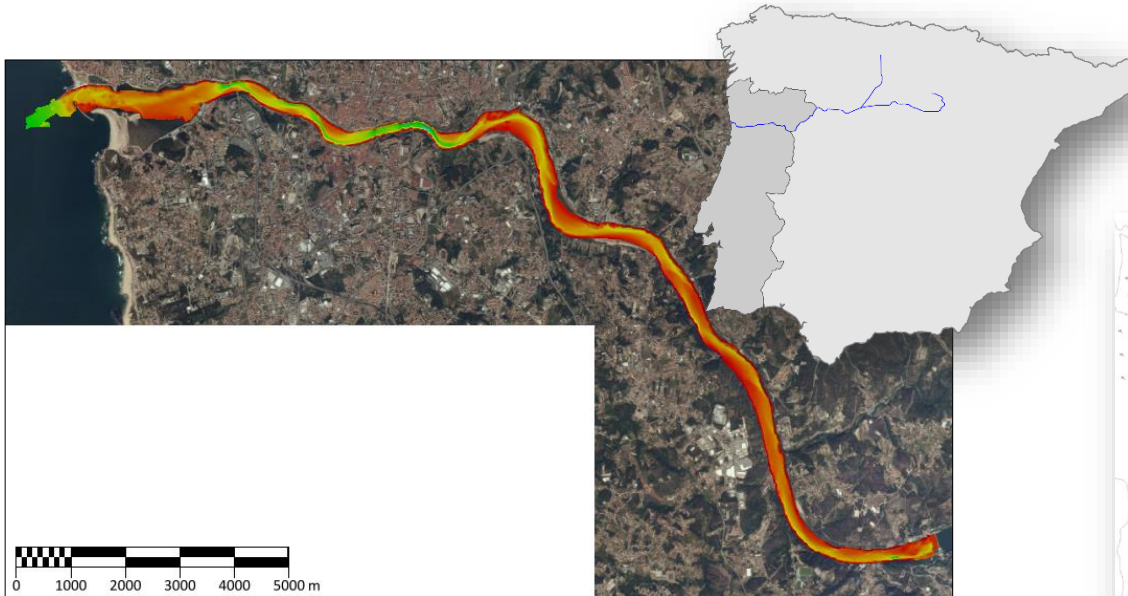
Areas of hydrographic surveying, nautical cartography, safety of navigation, operational oceanography, geology and chemistry of the marine environment.

- Continental Portugal and Azores Archipelago: 26 hydrographic surveys were realized in harbours and their approaches (left).
- Oceanic hydrographic ships, from the Portuguese Navy, were employed on surveys for the project related to the proposal of extension of the Portuguese continental shelf (right).



River Douro

IHPT finished the hydrographic survey, with about 210 Km, of the River Douro waterway



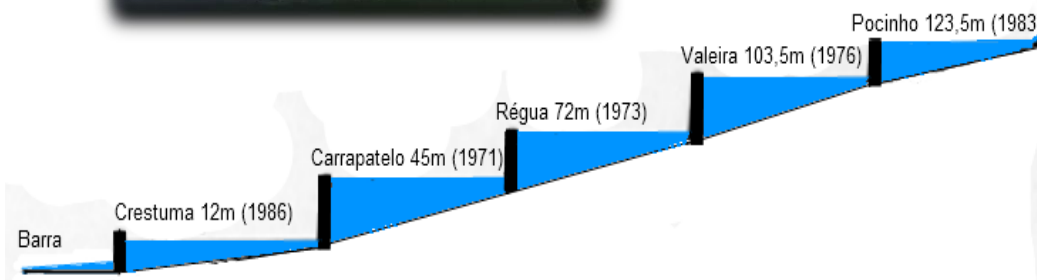
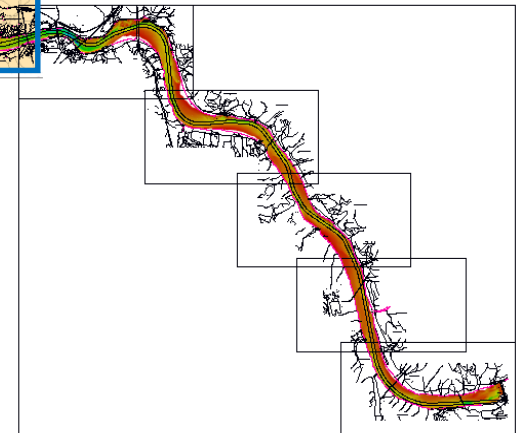
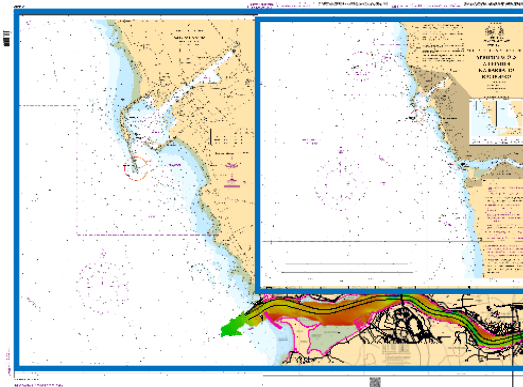
River Minho

A collaborative survey was carried out, involving survey teams of IHPT and IHM (Spain), at the River Minho's mouth. During the survey the difference between the Chart Datum (PT-SP) was determined.

River Douro

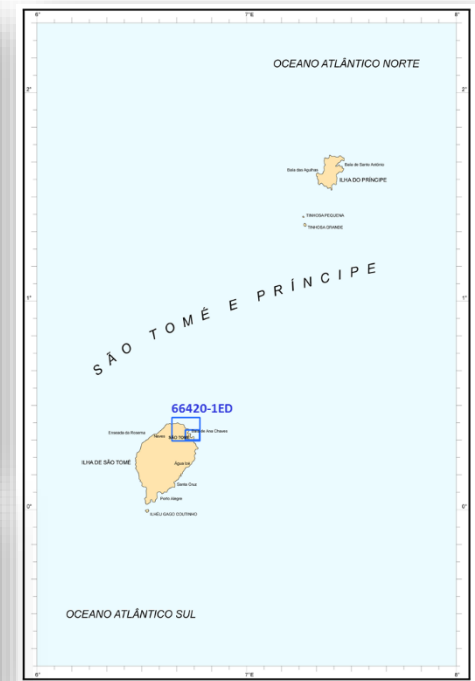
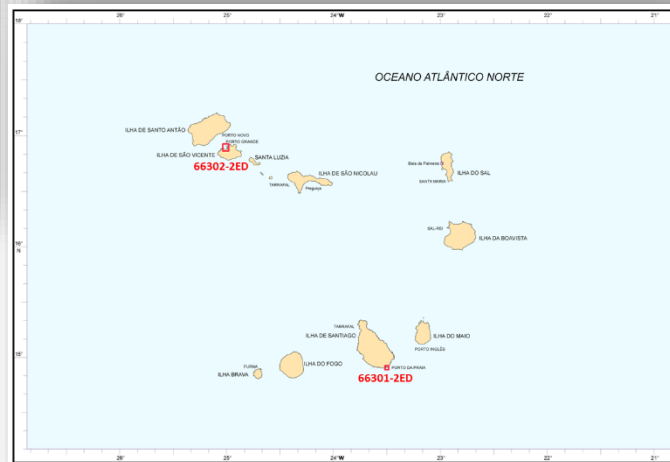
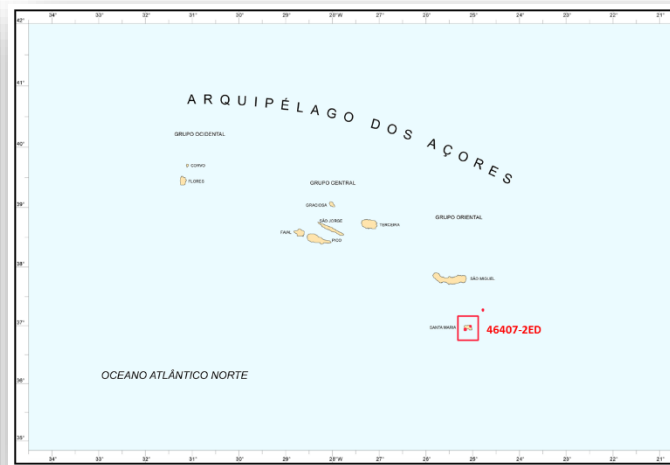
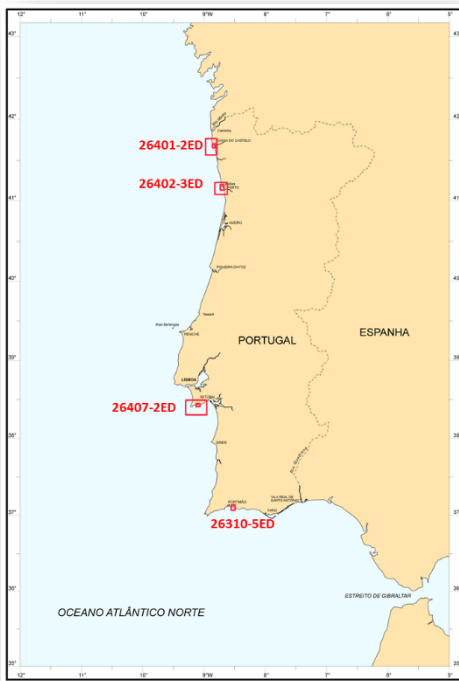
Project related with the production of NC and ENC of all Portuguese section of the River Douro. This section of the river has five locks and very intense tourism and recreation navigation.

DOURO'S INLAND WATERWAY 2020



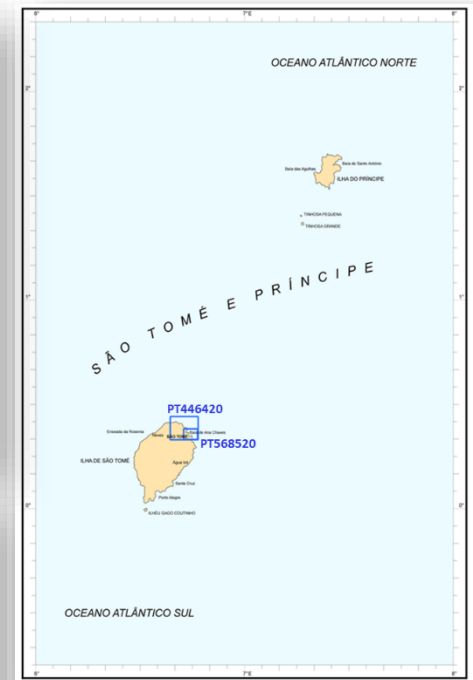
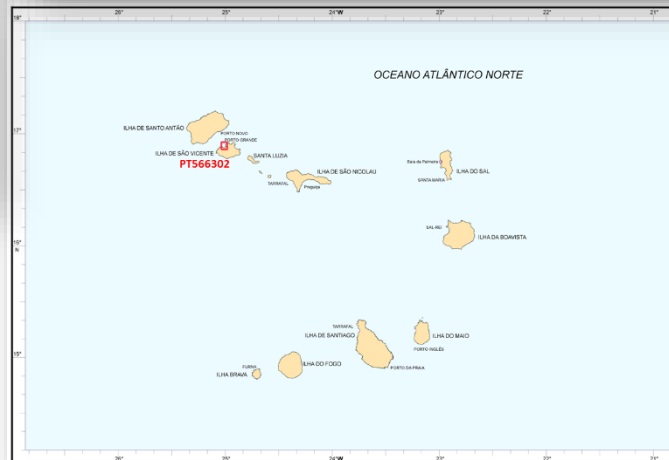
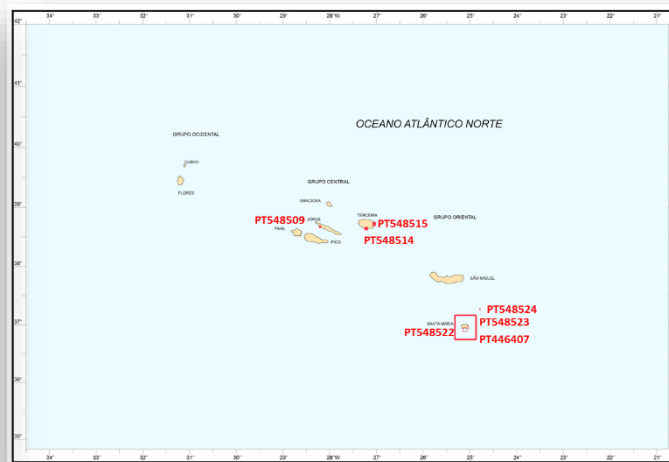
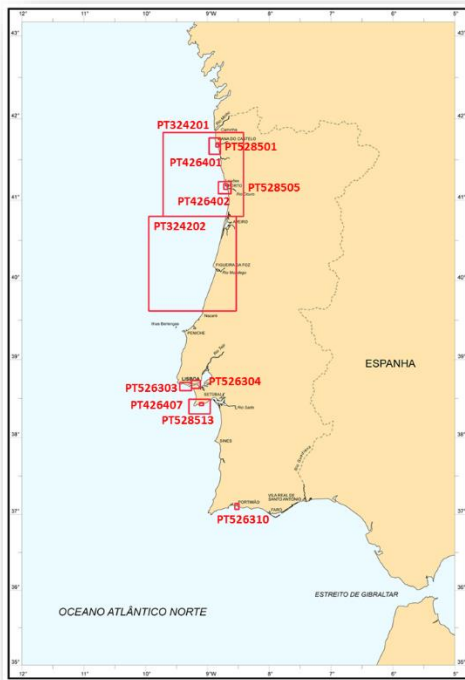
Nautical Chart

Since the last EAtHC meeting, IHPT published 1 new chart (in blue) and 8 new editions (in red).



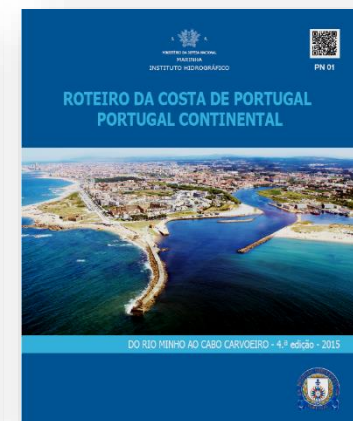
Electronic Navigational Chart

Since the last EAtHC meeting, IHPT published 2 new cells (in blue) and 21 new editions (in red).



- Nautical Charts and Publications Catalogue, 12th edition, 2014.
- Sailing Directions – from Rio Minho to Cabo Carvoeiro, 4th edition, 2015.
- 10Z01 Symbols, Abbreviation and Terms used on Charts, 3th edition, 2015.
- Maritime Buoyage System Table, 2nd edition, 2015.
- Annual Group of Notices to Mariners, 2015 and 2016.
- International Signals Code , 5th edition, 2016.

IHPT also publishes, annually, the Tide Table for the Portuguese Speaking Countries, which includes the main harbors of Angola, Cape Verde, Guinea Bissau and S. Tomé and Príncipe.

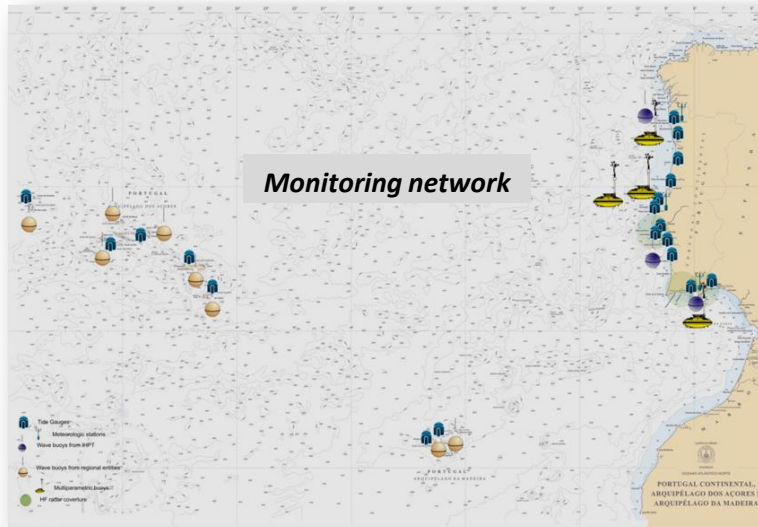


- IHPT, as the **national coordinator for the Maritime Safety Information**, provides a 24h service of Navigational Warnings, in cooperation with the NAVAREA II coordinator.
- **NAVTEX** (English and Portuguese) | transmitted from Penalva Station (near Lisbon), São Miguel Island (Azores Archipelago) and from Porto Santo Island (Madeira Archipelago).
- **Group of Notices to Mariners** | it's monthly published and covers all navigation charts and publications of Portugal, Angola, Cape Verde, Guinea-Bissau and São Tomé e Príncipe, and is also available on the IHPT web site.
- **ANAVNET** | IHPT on-line application at <http://www.anavnet.hidrografico.pt> provides either entire NtM publications or single NtM affecting individual documents, allowing in any case consultation and printing; Also allows consultation of warnings broadcasted by any of the Portuguese NAVTEX stations (coastal and local warnings).
- **GMDSS** | coverage not completed.
- **DGPS broadcast stations** and **AIS coastal stations** | coverage completed in Continental Portugal and in Azores and Madeira Archipelagos.

ANGOLA | IHPT had contacts with the Angolan Hydrographic Office, related to the future collaboration between IHPT and IHSMA, that may include formation in hydrography and cartography.



- IHPT is running, presently, a comprehensive network of 17 tide gauges, 7 wave and multi-parametric buoys, 3 coastal weather stations and 5 HF radar systems superficial currents and waves - **System of Monitoring and Operational Forecast of the Portuguese EEZ.**

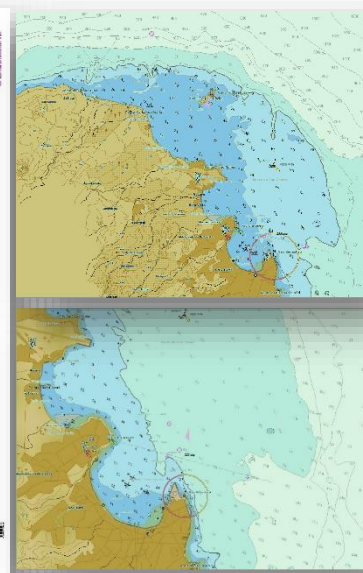
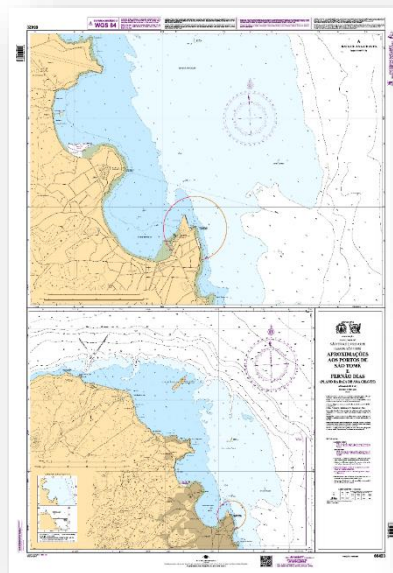
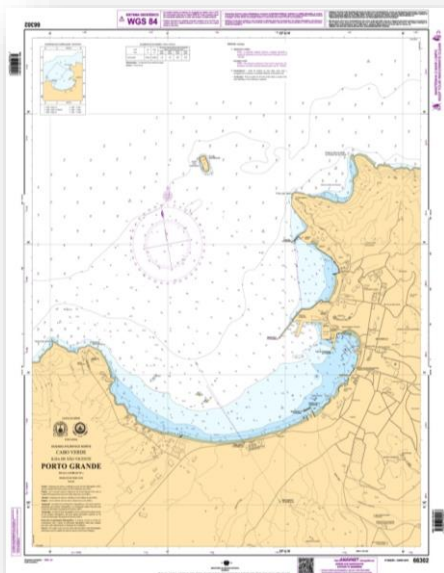


<p>na Agitação marítima</p> <p>na agitação marítima Wave forecast + Ver mais</p>	<p>na Navegação de Recreio</p> <p>na navegação de recreio Wave forecast for sailing + Ver mais</p>
<p>no Surf</p> <p>no surf para Portugal e Angola Wave & surf forecast for Portugal and Angola + Ver surf para Portugal + Ver surf para Angola</p>	<p>na arte-xêvega</p> <p>na "arte-xêvega" Wave forecast for arte-xêvega boats + Ver de Espinho à Praia da Vieira + Ver da Costa de Caparica ao Espichel</p>
<p>nos Portos e Aproximações</p> <p>nos portos e aproximações Wave forecast at harbour entrance + Ver mais</p>	<p>nas Praias</p> <p>nas praias Wave forecast for the beach + Ver mais</p>

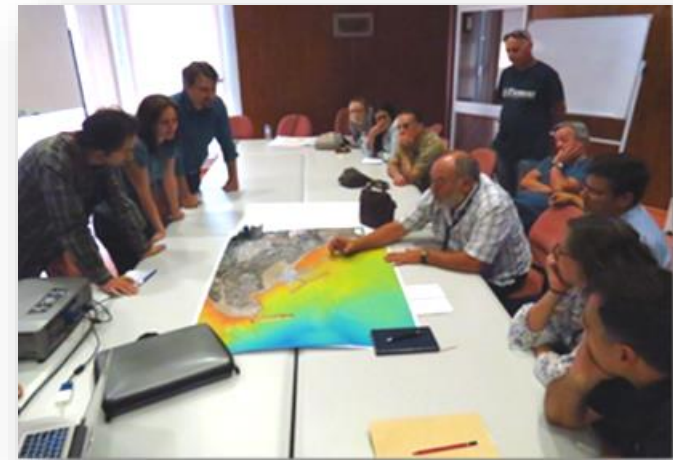
- The **operational forecast system "Qual é a tua Onda?"** displays sea state forecasts and other information. Available to the general public on the IHPT web portal, organized into usability sectors, such as surf, recreational navigation and fisheries.

CAPE VERDE | IHPT executed hydrographic and topographic surveys in São Vicente and Santiago islands. New editions of NC PT66301 and PT66302 were published.

SÃO TOMÉ AND PRÍNCIPE | new ENC were published PT466420 “Approaches to São Tomé and Fernão Dias Harbours” and PT568520 “Ana Chaves Bay”. This were produced based on the new NC PT66420, that replaced the older one published in 1958.

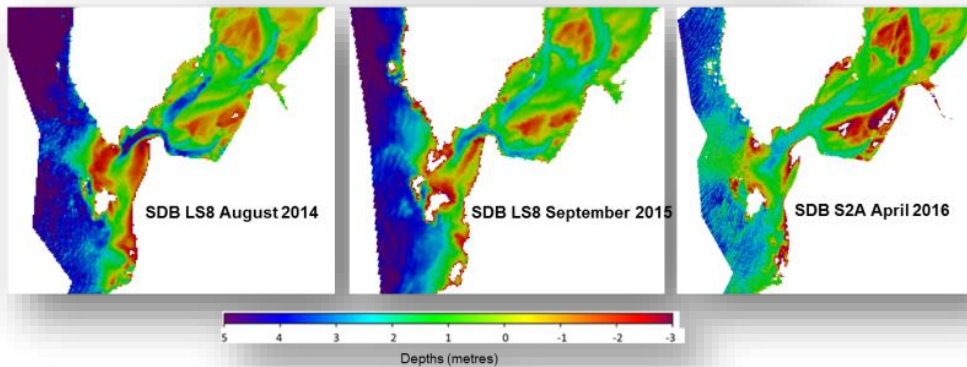


- **Courses in Hydrography** | IHPT School of Hydrography and Oceanography provides Specialization Courses in Hydrography (FIG/IHO Category A and B).
 - 2015/2016, course CAT. A, 4 militaries of the Portuguese Navy and 6 civilians (one Brazilian).
 - In 2015 and in 2016, IHPT received delegations of military students from the Angola Navy Academy, for training in safety of navigation and introduction to hydrography and nautical chart production.
 - 2016/2017, course CAT. B, 4 militaries of the Portuguese Navy and 5 officers of the Directorate of Hydrography and Navigation of the Angolan Navy.

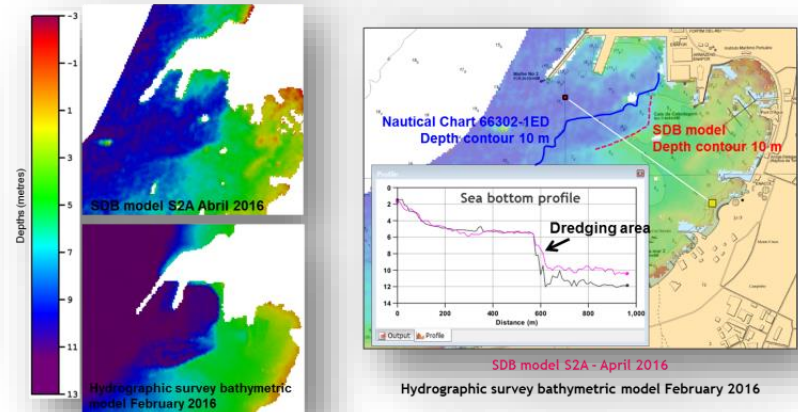


Satellite Derived Bathymetry | IHPT has been performing some studies in SDB, from multispectral satellite images for shallow-waters, using LANDSAT 8 and SENTINEL-2A images. For now, the goal of assess bathymetry through SDB methodologies is not to directly produce nautical charts, but rather to evaluate the amount of changes since the last survey.

Time series - Barra de Caminha bathymetric evolution



SDB detecting sea bottom changes due to dredging



Thank you for your attention!

