International Colaborative European Projects

CDR José Alberto de Mesquita Onofre

27 de maio 2017

Summary

- Project RAIA
- Project TRADE
- Project CoReSyF
- Project *Mapping of the Portuguese Sea*

RAIA

Oceanic Observatory of the Iberian Margin and the Littoral

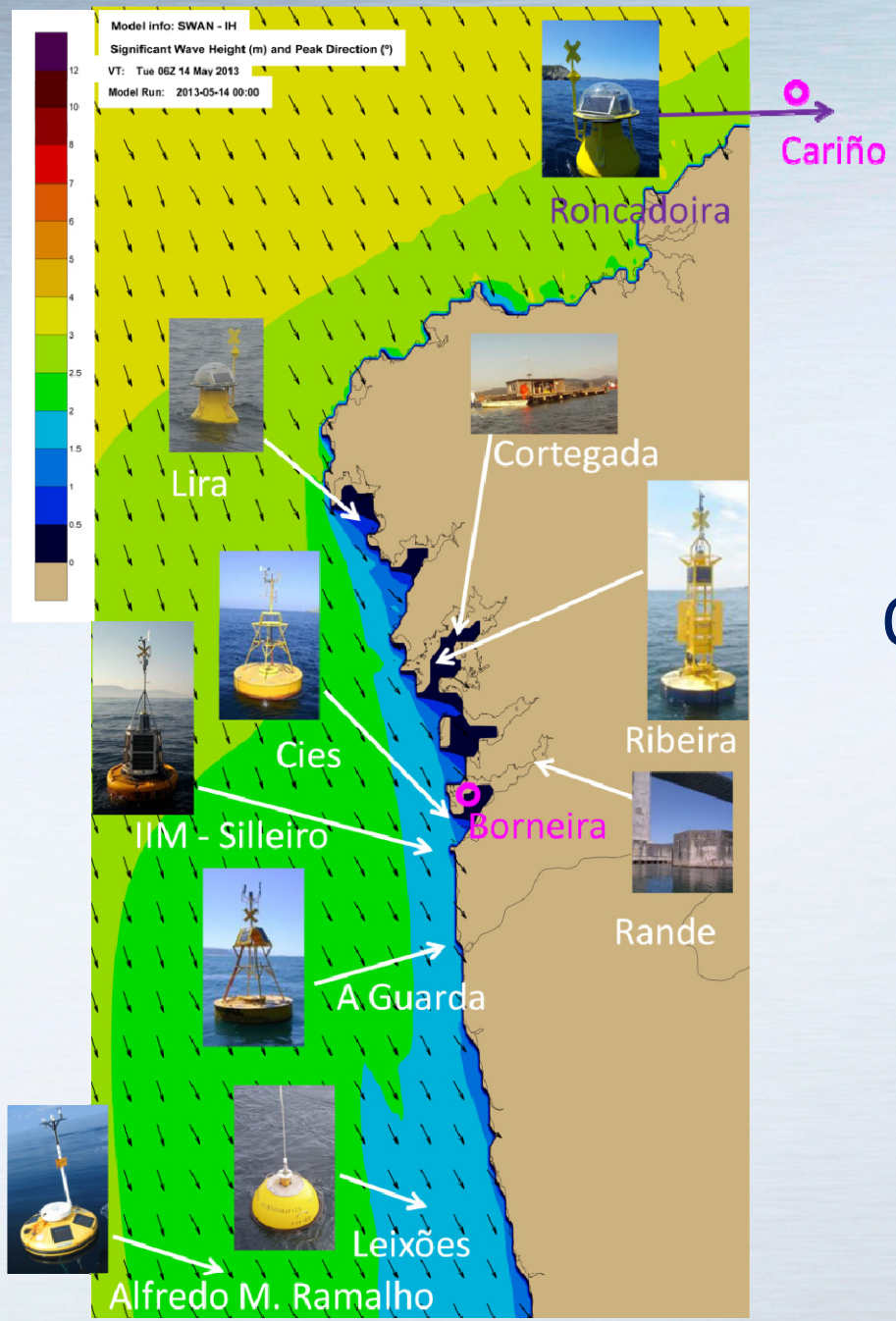
http://www.marnaraia.com

Twitter: #marnaraia

RAIA Observatory

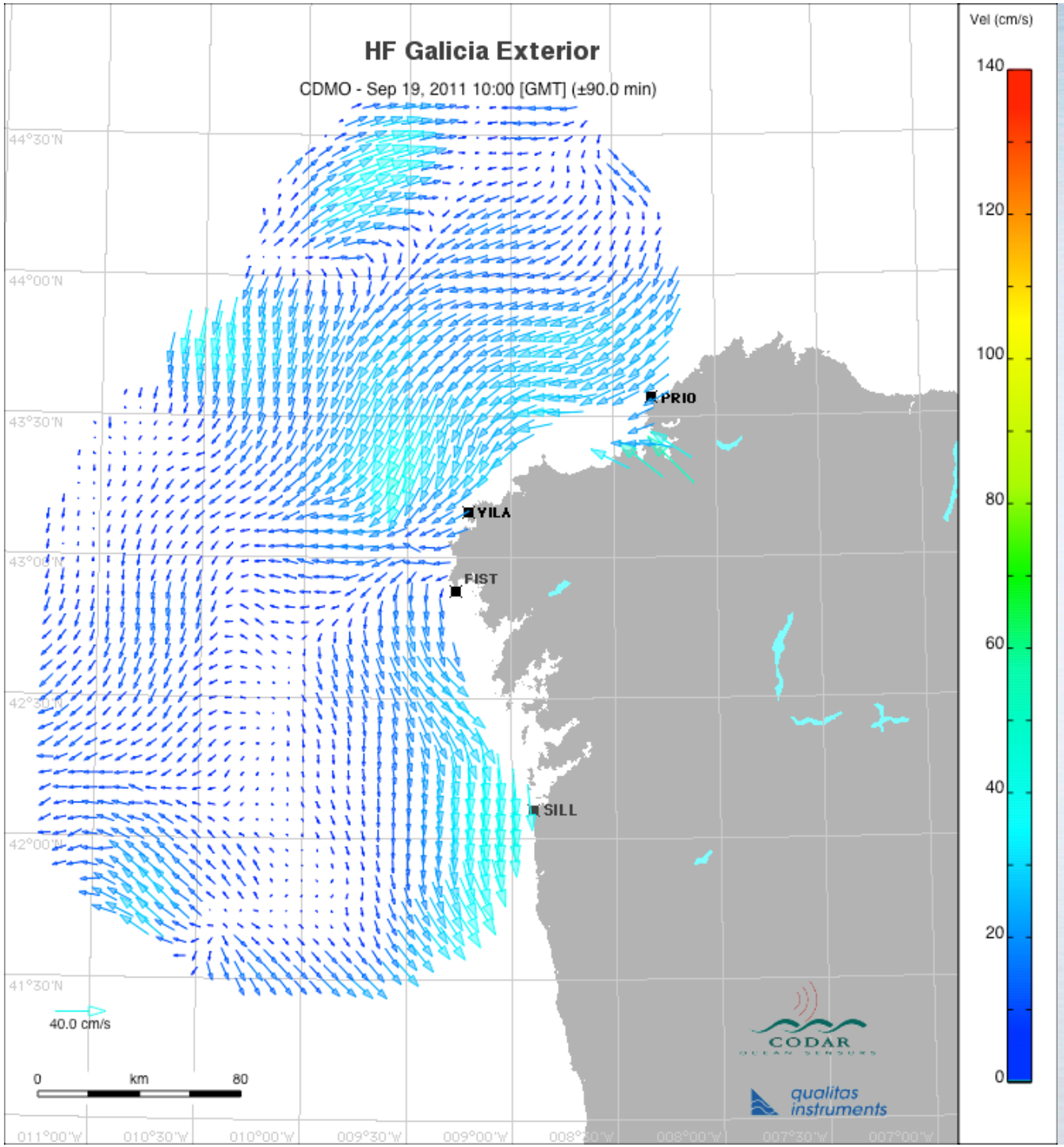
- Growing need of trustworthy meteo-oceanographic information (EuroRegion Galicia - North-of-Portugal)
- 13 R&D institutions, mainly operational (INTERREG-POCTEP)
- Coastal observational network (met-ocean buoys, HF Radars, tide gauges, met-stations) www.marnaraia.com
- Operational forecast system: (circulation, sea-and-swell, ecology) www.marnaraia.com
- Constant technological and modelling innovation
- RAIA provides a set of products and operational services to the society (beach users, fishermen's organizations, shellfish and barnacle collectors, yachting, surf, marine renewable energy).

Project Raia



RAIA

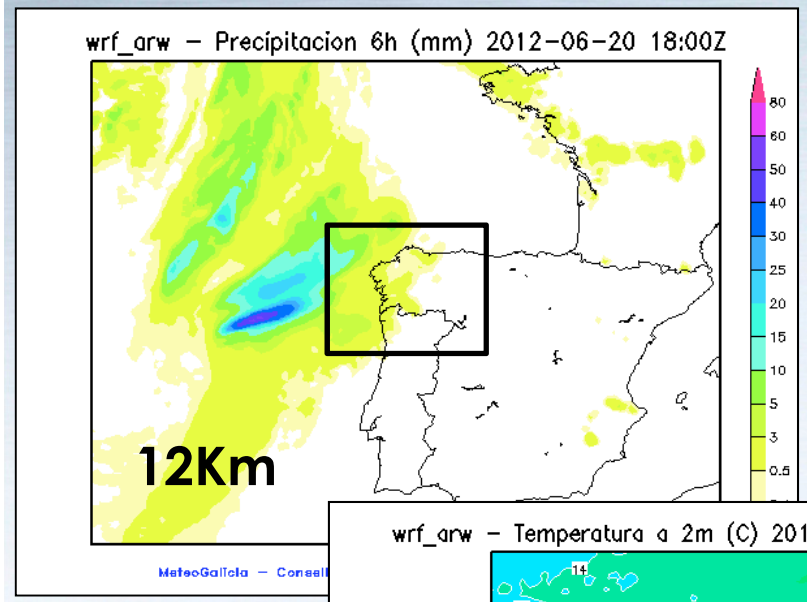
Observation Network

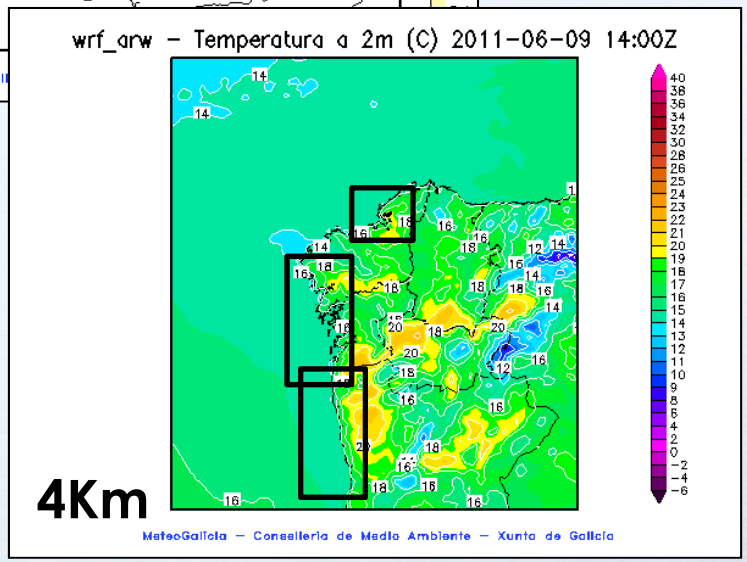


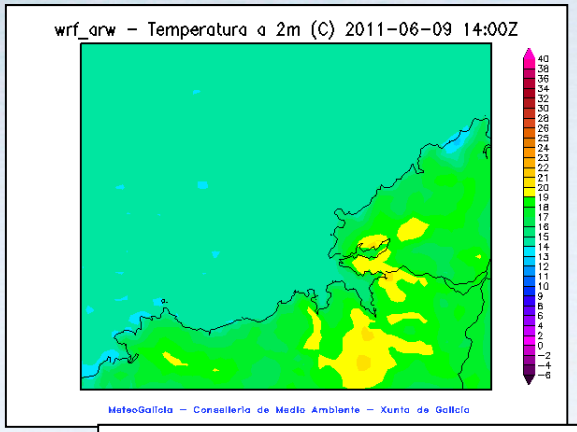
Project Raia

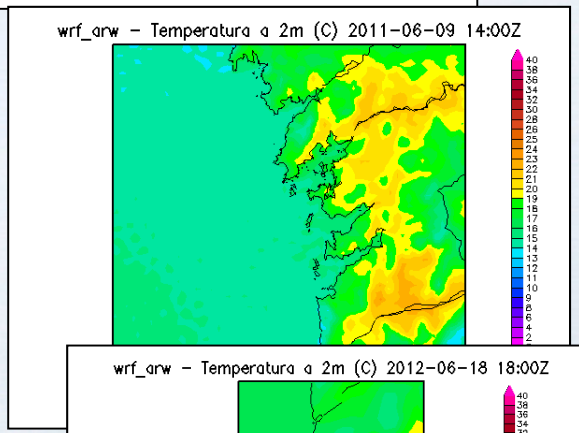
HF Radar

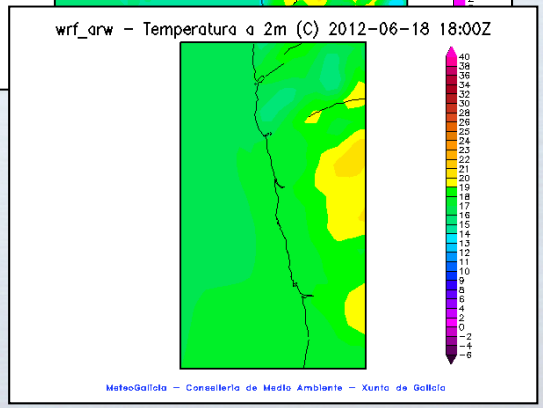
WRF Meteorological Model





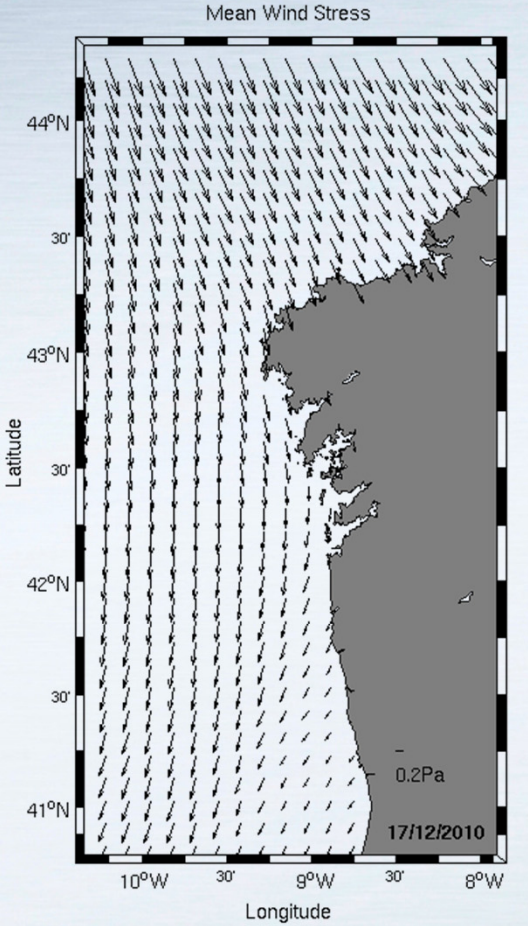


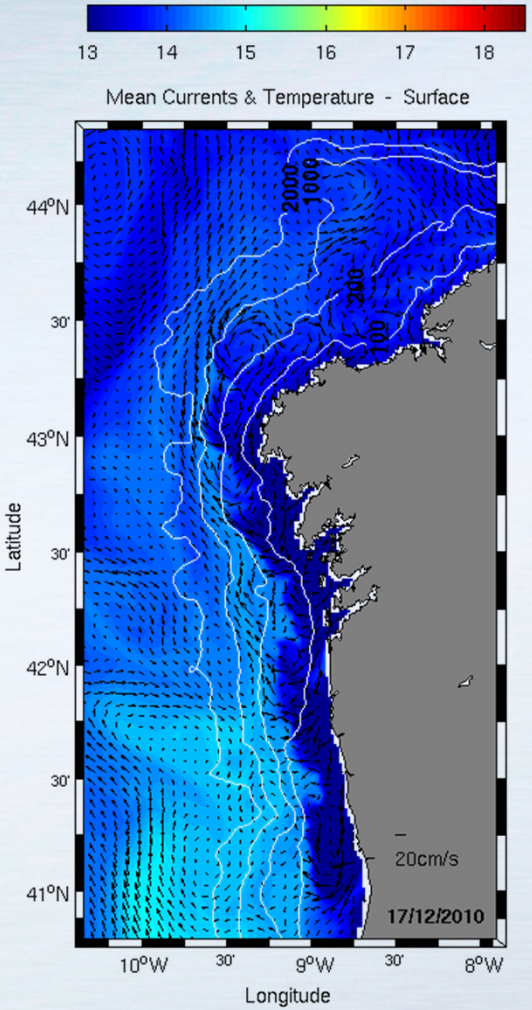


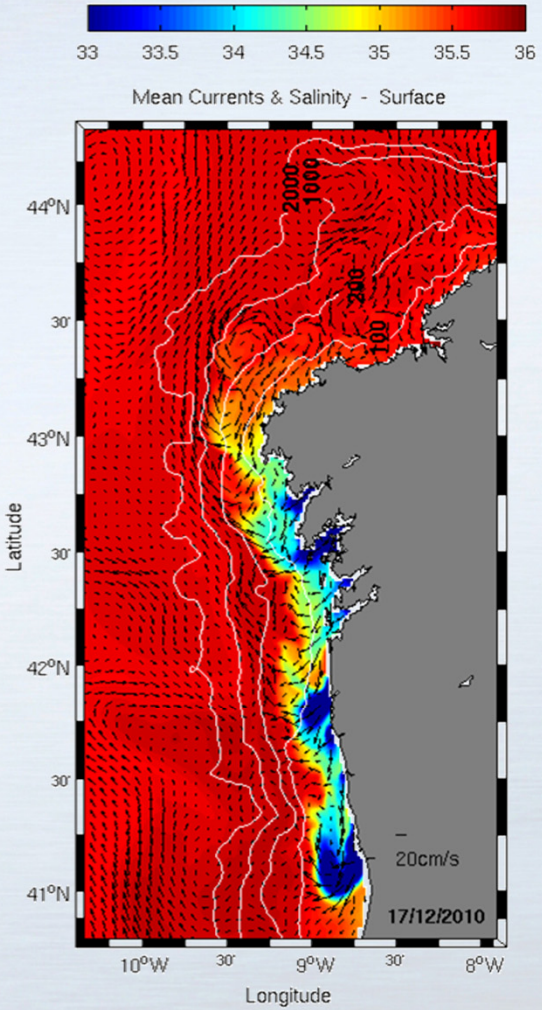


Project Raia

ROMS







Project Raia

WIBM HYCOM model

1´resolution

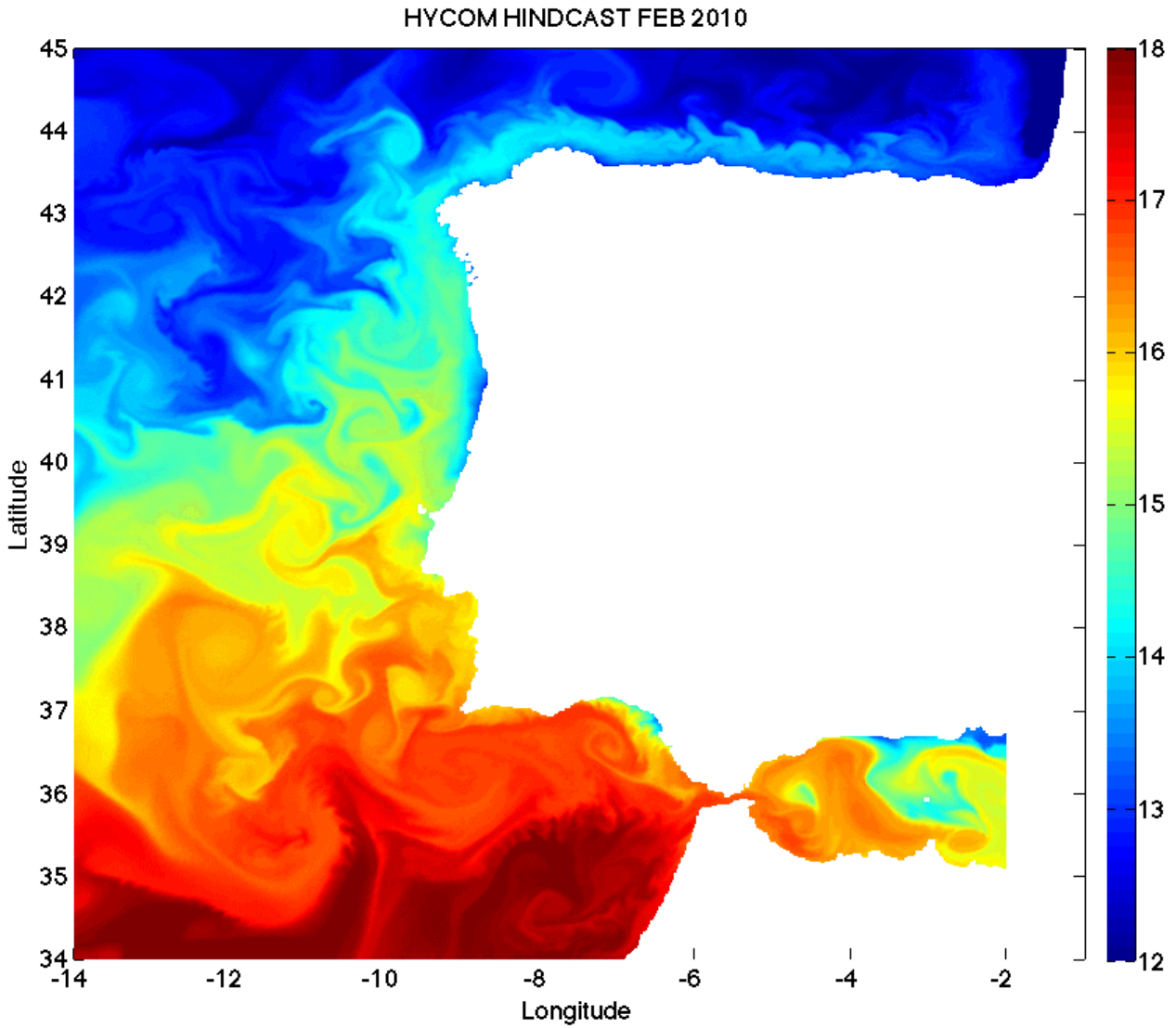
32 hybrid layers

8 tidal constituents

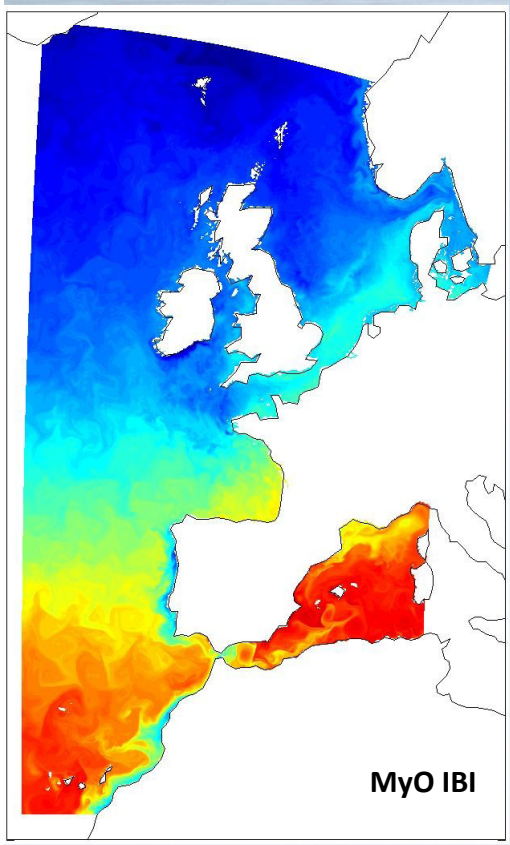
5 days forecast

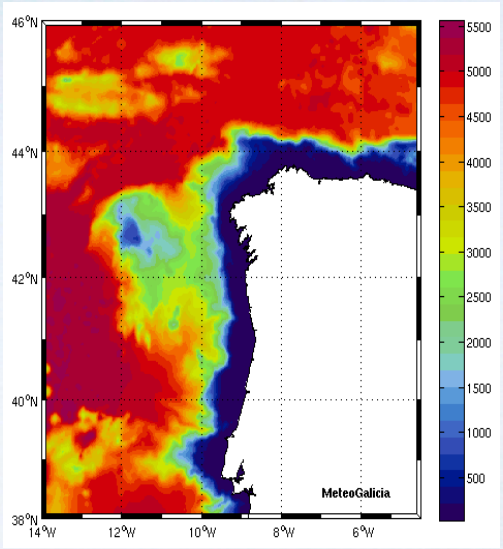
MERCATOR forcing (1 day)

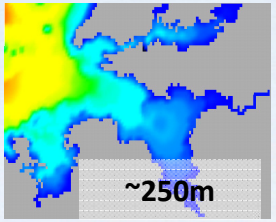
ECMWF forcing (6h)

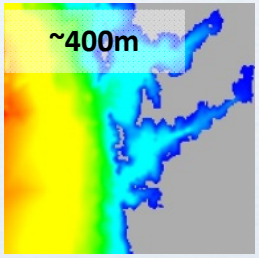


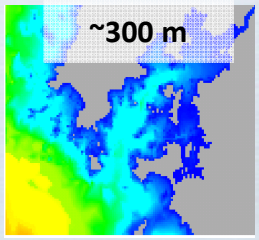
ROMS → Rías







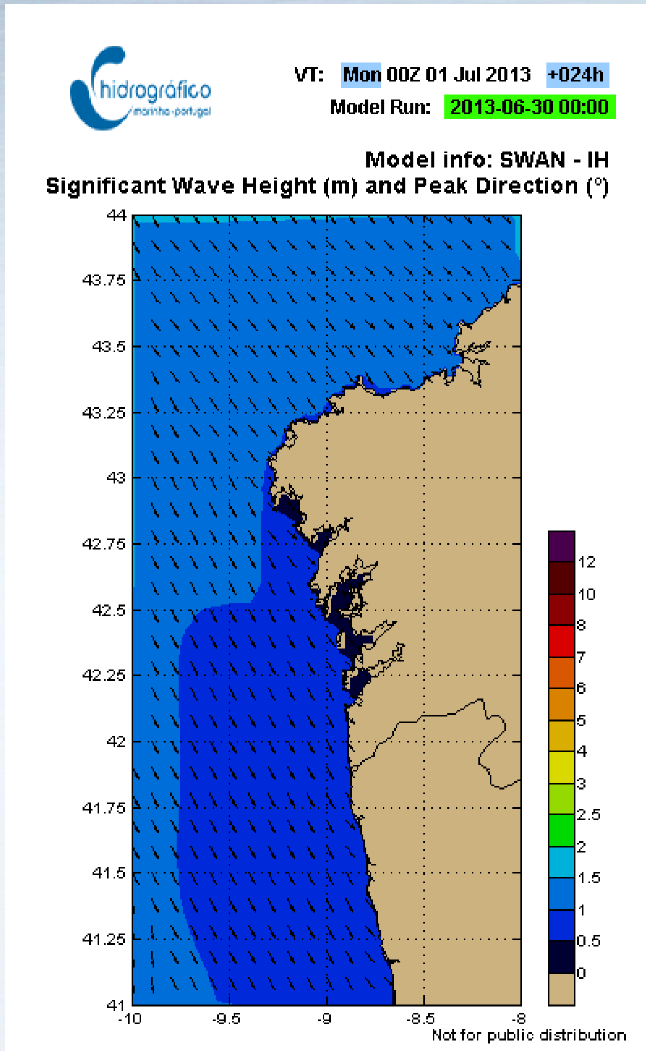


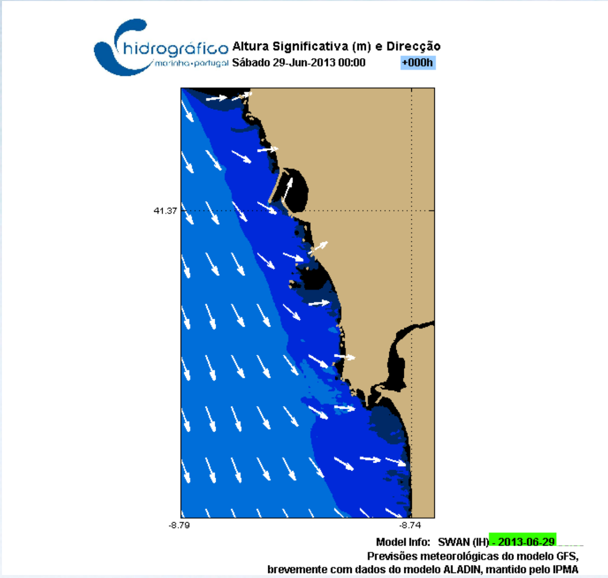


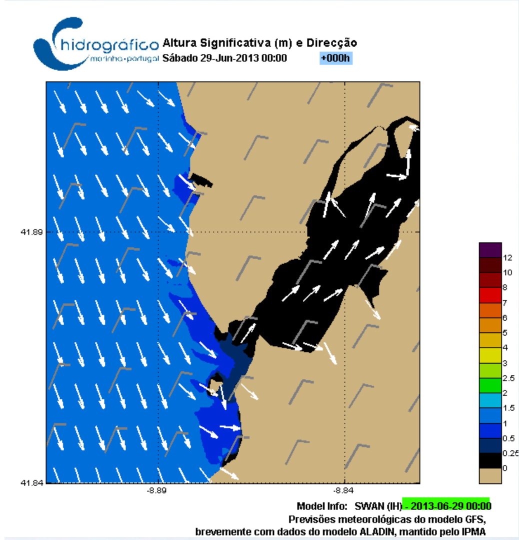
•Meteo Forcing - WRF 4km or 1,3km

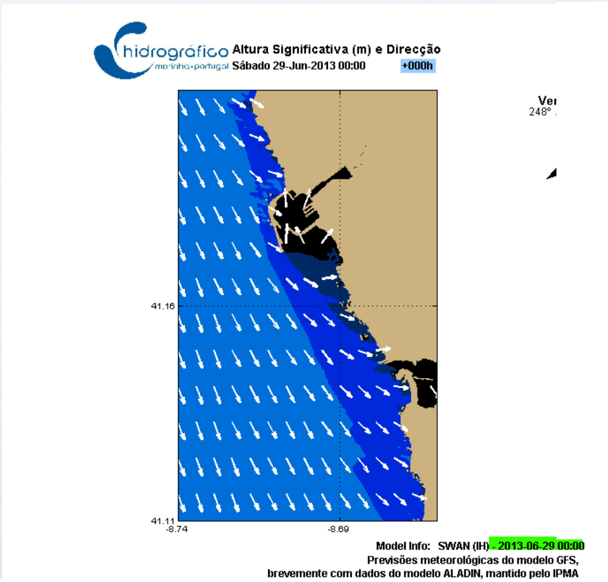
Project Raia

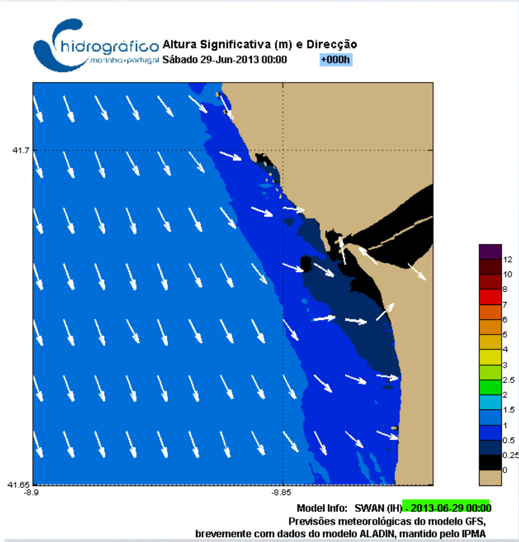
SWAN





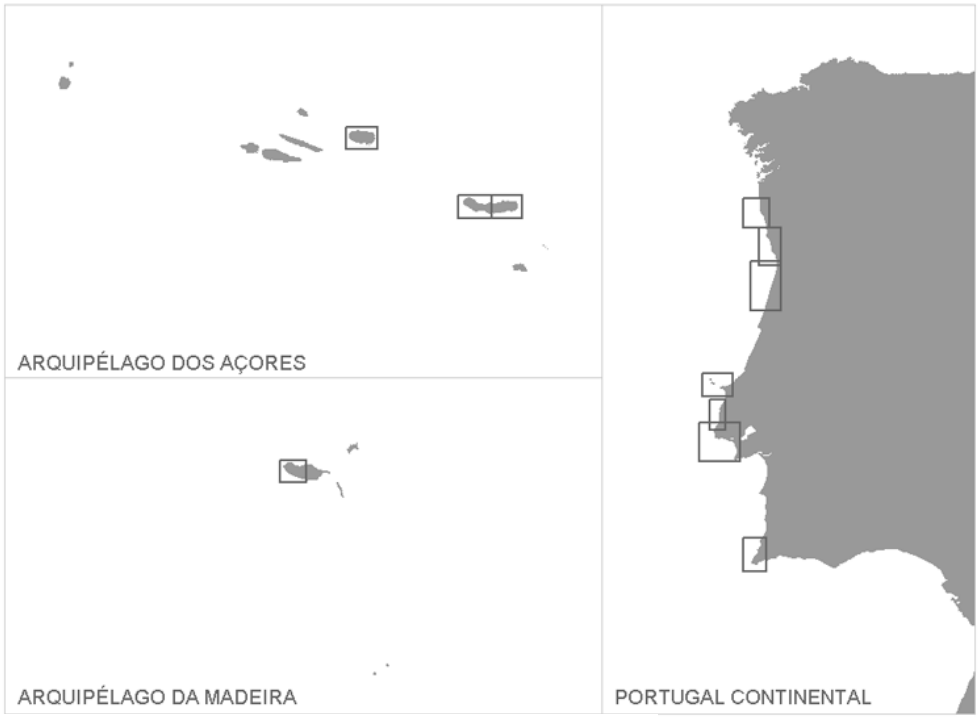


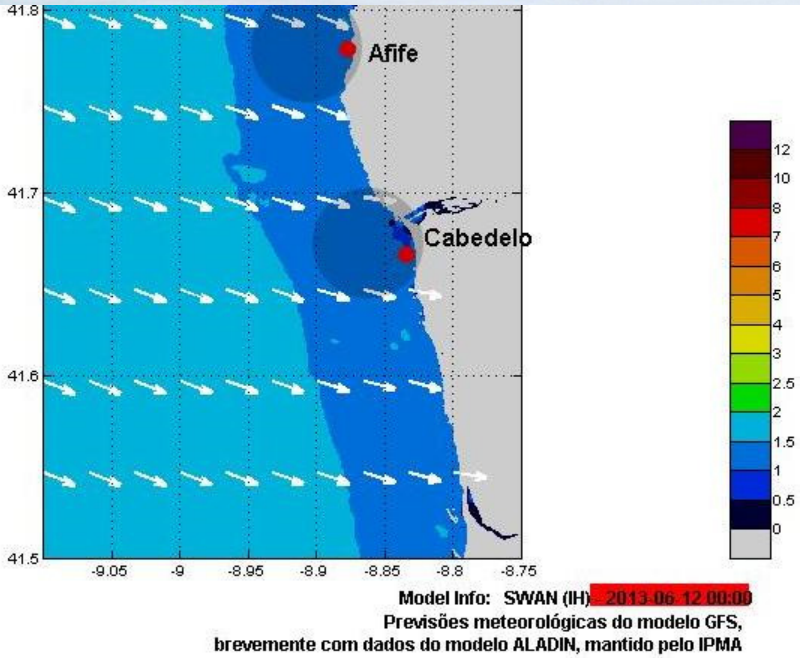


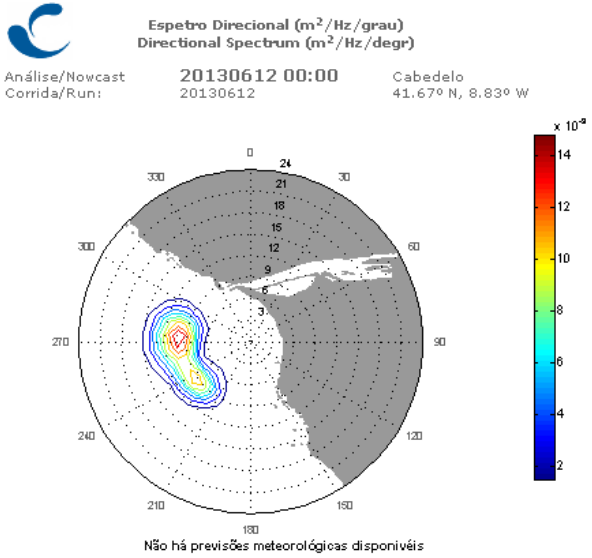


Project Raia

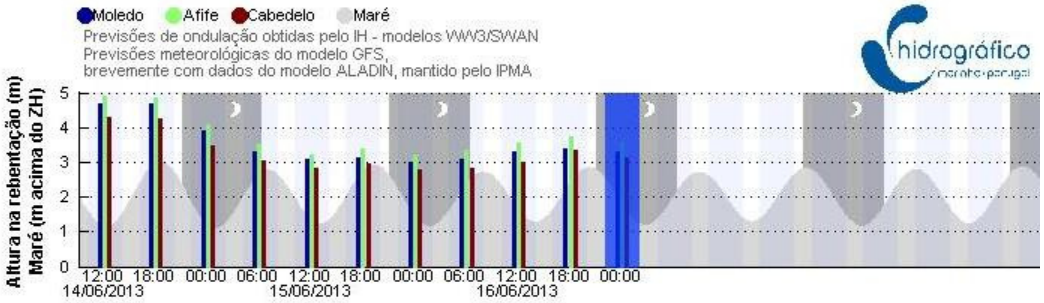
Project Raia – Surf Forecast







O gráfico apresenta valores da previsão da altura de rebentação das ondas, para cada uma das praias assinaladas no mapa



Vento	dir vel	9nós	7nós	5nós	7nós	9nós	10nós	5nós	3nós	8nós	6nós	8nós
Moledo	Tp	11s	11s	11s	10s	10s	10s	10s	10s	9s	10s	9s
	IQS	★★	★★	★★	★	★	★	★	★	★	★	★
Afife	Tp	11s	11s	11s	10s	10s	10s	10s	10s	9s	10s	9s
	IQS	★★★	★★	★★	★★	★★	★	★	★★	★	★	★
Cabed.	Tp	11s	11s	10s	10s	10s	10s	10s	10s	9s	10s	9s
	IQS	★★	★★	★★	★★	★	★	★	★	★	★	★

Project Raia – Kite Surf Forecast

meteogalicia | hidrográfico

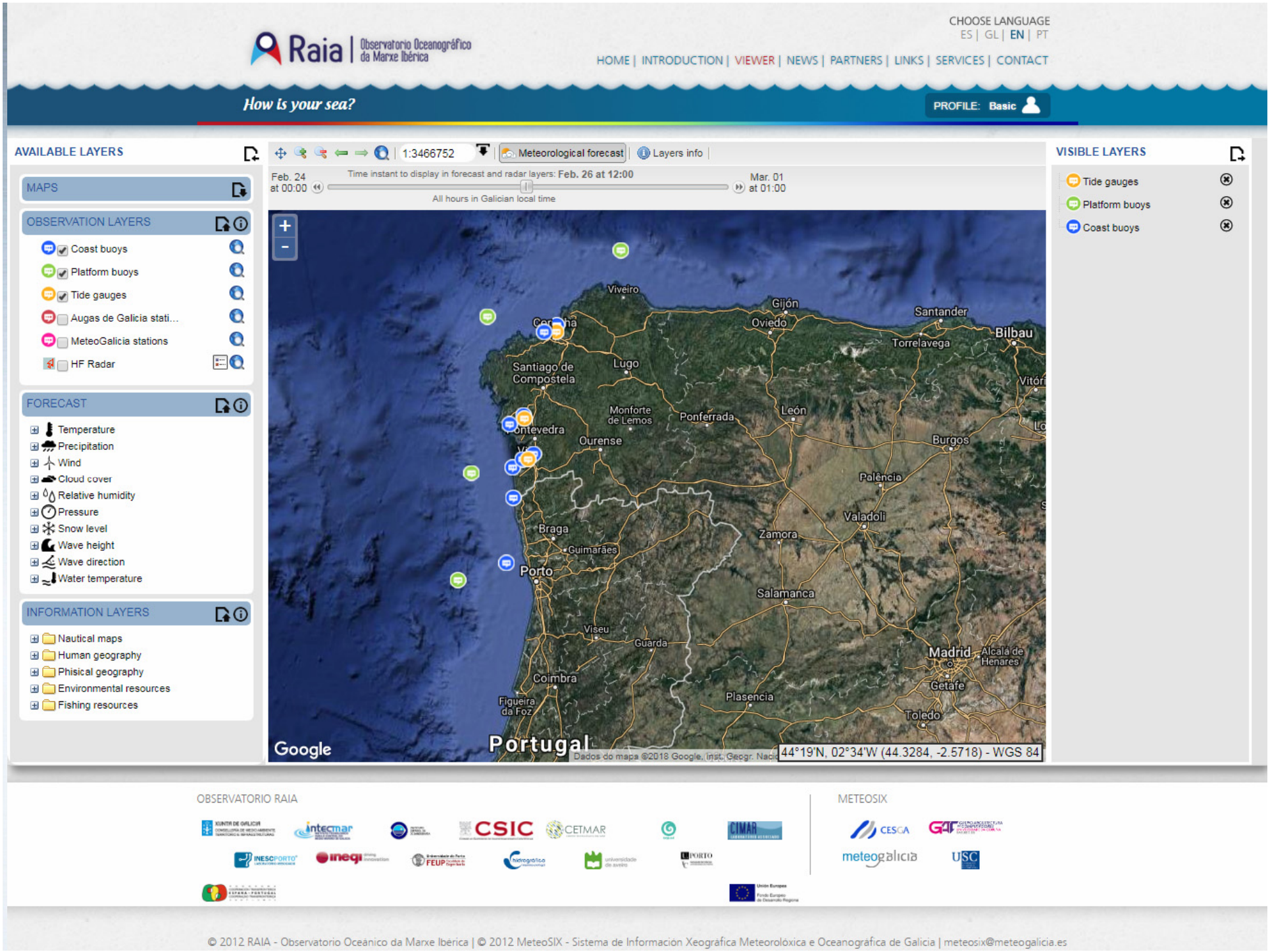
Esposende

Raia
www.marnaraia.com

WRF 1.4 km & 4 km MOHID 0.3 km 07-10-2014 00 UTC	Sex. 05–Jun–2015																		Sab. 06–Jun–2015								
	05h	06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	05h	06h	07h	08h	09h	10h	11h	12h	13h
Direção do Vento	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Velocidade do Vento (nós)	11	12	14	17	18	19	21	23	23	25	25	24	23	23	21	20	19	14	2	3	5	4	6	9	11	12	14
Rajada máxima (nos)	12	13	17	19	20	21	26	29	30	32	32	31	31	29	27	23	21	16	2	4	6	6	8	12	13	14	16
Índice turbulência																											
Temperatura do ar (°C)	15	15	16	15	15	16	16	16	16	16	16	16	16	16	16	17	17	17	16	16	17	17	17	18	18	17	17
Nebulosidade (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Temperatura do mar (°C)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

WRF 1.4 km & 4 km MOHID 0.3 km 07-10-2014 00 UTC	Sab. 06–Jun–2015									Dom. 07–Jun–2015																	
	14h	15h	16h	17h	18h	19h	20h	21h	22h	05h	06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h
Direção do Vento	↓	↓	↓	↓	↓	↓	↓	↙	↙	←	←	←	←	↘	↘	↗	→	↓	↓	↓	↓	↓	↓	↓	↓	↙	↙
Velocidade do Vento (nós)	12	11	12	11	10	9	7	6	7	11	11	11	11	8	7	4	4	8	11	12	14	12	15	13	9	2	3
Rajada máxima (nos)	15	14	15	13	13	12	10	9	11	21	20	23	23	15	11	7	6	12	15	16	17	16	19	17	12	2	4
Índice turbulência																											
Temperatura do ar (°C)	18	18	18	18	18	19	20	21	21	19	20	20	21	22	23	21	20	19	19	19	19	19	19	20	20	22	21	21
Nebulosidade (%)	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Temperatura do mar (°C)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Esposende – Lat: 41.53° Lon: -8.8° 05–Jun–2015 06:13 – 20:58 UTC Indice turbulencia Fraco Medio Forte


Raia | Observatorio Oceanográfico da Marxe Ibérica
CHOOSE LANGUAGE
ES | GL | EN | PT
HOME | INTRODUCTION | VIEWER | NEWS | PARTNERS | LINKS | SERVICES | CONTACT
How is your sea?
PROFILE: Basic
AVAILABLE LAYERS
MAPS
OBSERVATION LAYERS
Coast buoys
Platform buoys
Tide gauges
Augas de Galicia stati...
MeteoGalicia stations
HF Radar
FORECAST
Temperature
Precipitation
Wind
Cloud cover
Relative humidity
Pressure
Snow level
Wave height
Wave direction
Water temperature
INFORMATION LAYERS
Nautical maps
Human geography
Phisical geography
Environmental resources
Fishing resources
1:3466752
Meteorological forecast
Layers info
Feb. 24 at 00:00
Time instant to display in forecast and radar layers: Feb. 26 at 12:00
Mar. 01 at 01:00
All hours in Galician local time
Viveiro
Gijón
Oviedo
Santander
Bilbau
Torrelavega
Santiago de Compostela
Lugo
Monforte de Lemos
Ponferrada
León
Pontevedra
Ourense
Burgos
Palência
Valadoli
Zamora
Braga
Guimarães
Porto
Salamanca
Viseu
Guarda
Madrid
Alcalá de Henares
Getafe
Coimbra
Figueira da Foz
Plasencia
Toledo
Portugal
Google
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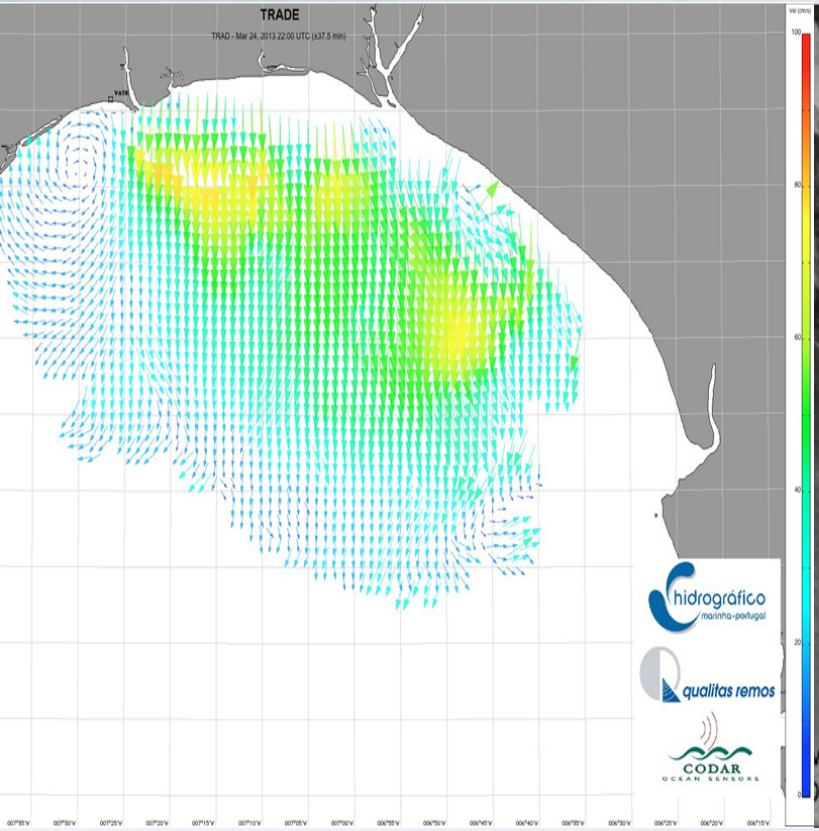
44°19'N, 02°34'W (44.3284, -2.5718) - WGS 84
VISIBLE LAYERS
Tide gauges
Platform buoys
Coast buoys
OBSERVATORIO RAIA
METEOSIX
© 2012 RAIA - Observatorio Oceánico da Marxe Ibérica | © 2012 MeteoSIX - Sistema de Información Xeográfica Meteorolóxica e Oceanográfica de Galicia | meteosix@meteogalicia.es

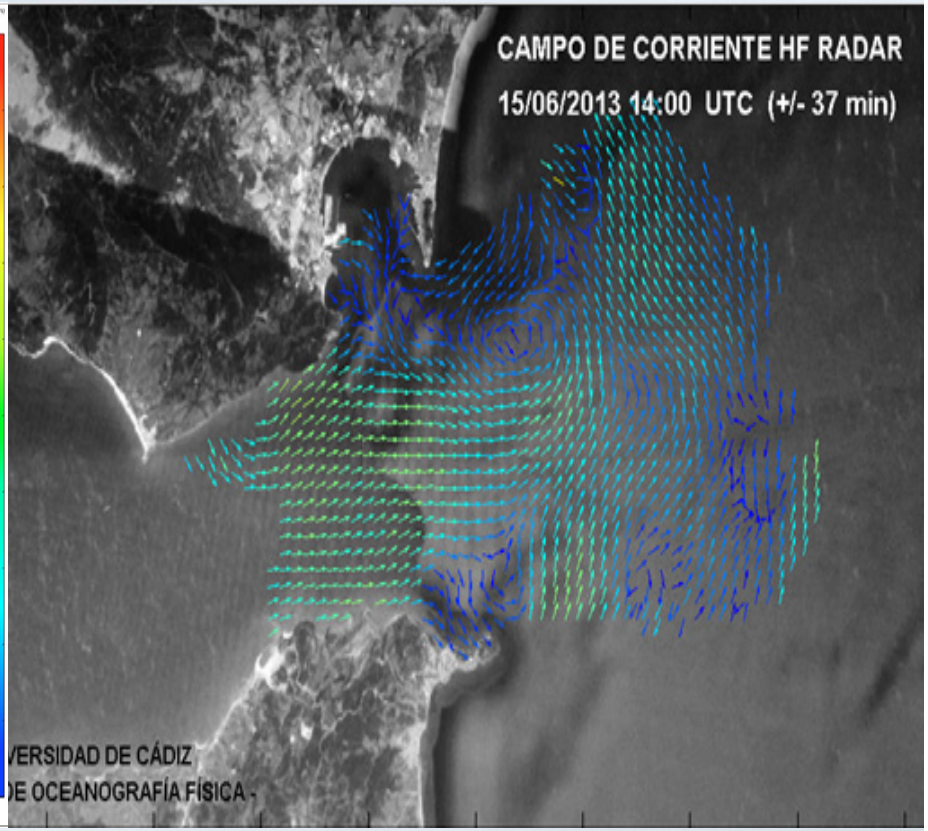
Project Trade

Trans-regional RADars for Environmental applications

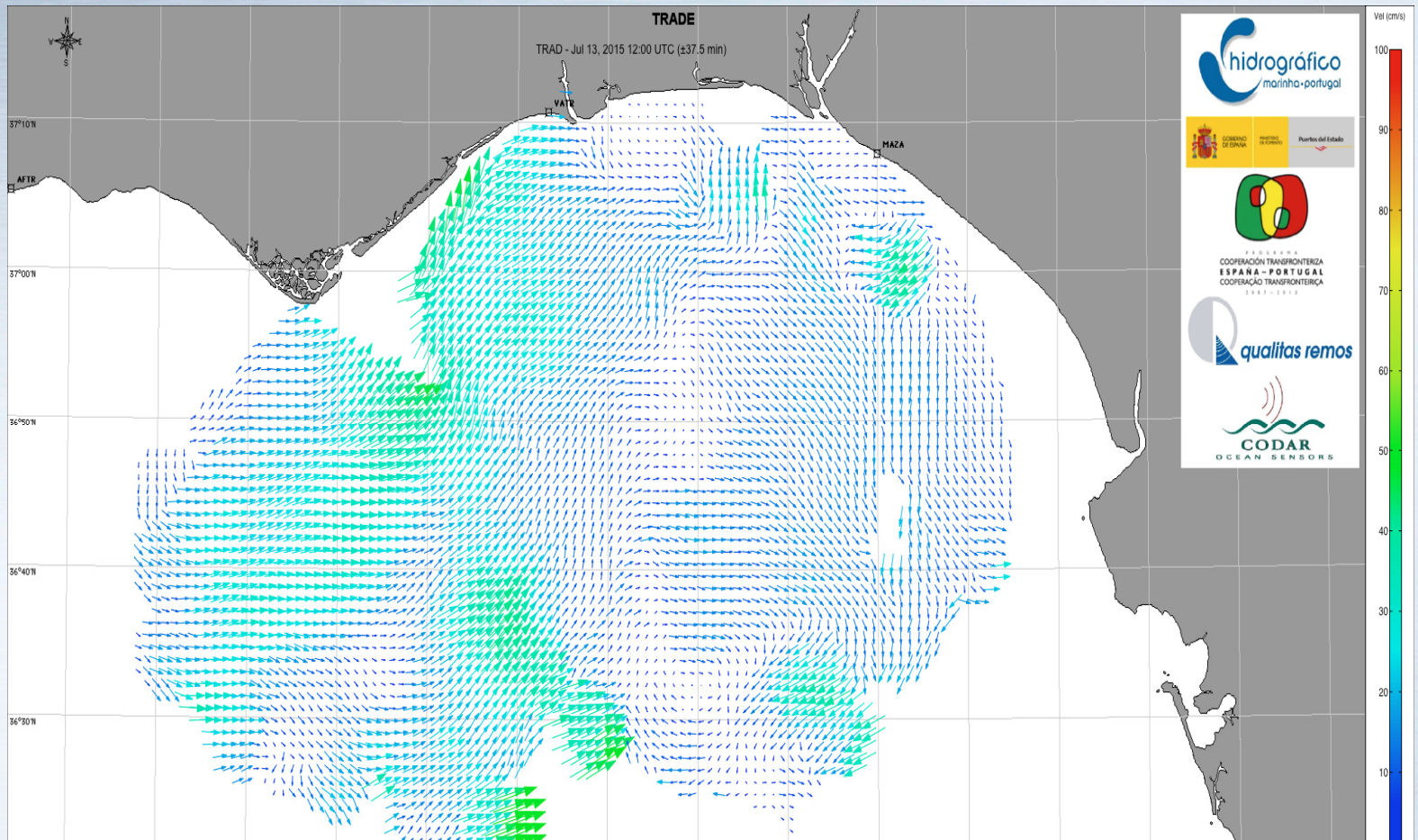
- Funded by FEDER – POCTEP
- Period: 2010 – 2014
- 3 stages:
  - a) 1st stage: HF Radar stations at
    - Punta Tarifa
    - Punta Carnera
    - Mázagon
    - Vila Real de Santo António
    - Ceuta
  - b) 2nd stage: HF Radar station at Alfanzina
  - c) 3rd stage: HF Radar station at Sagres
- Partners: Puertos del Estado / Instituto Hidrográfico / Cádiz University

Project Trade

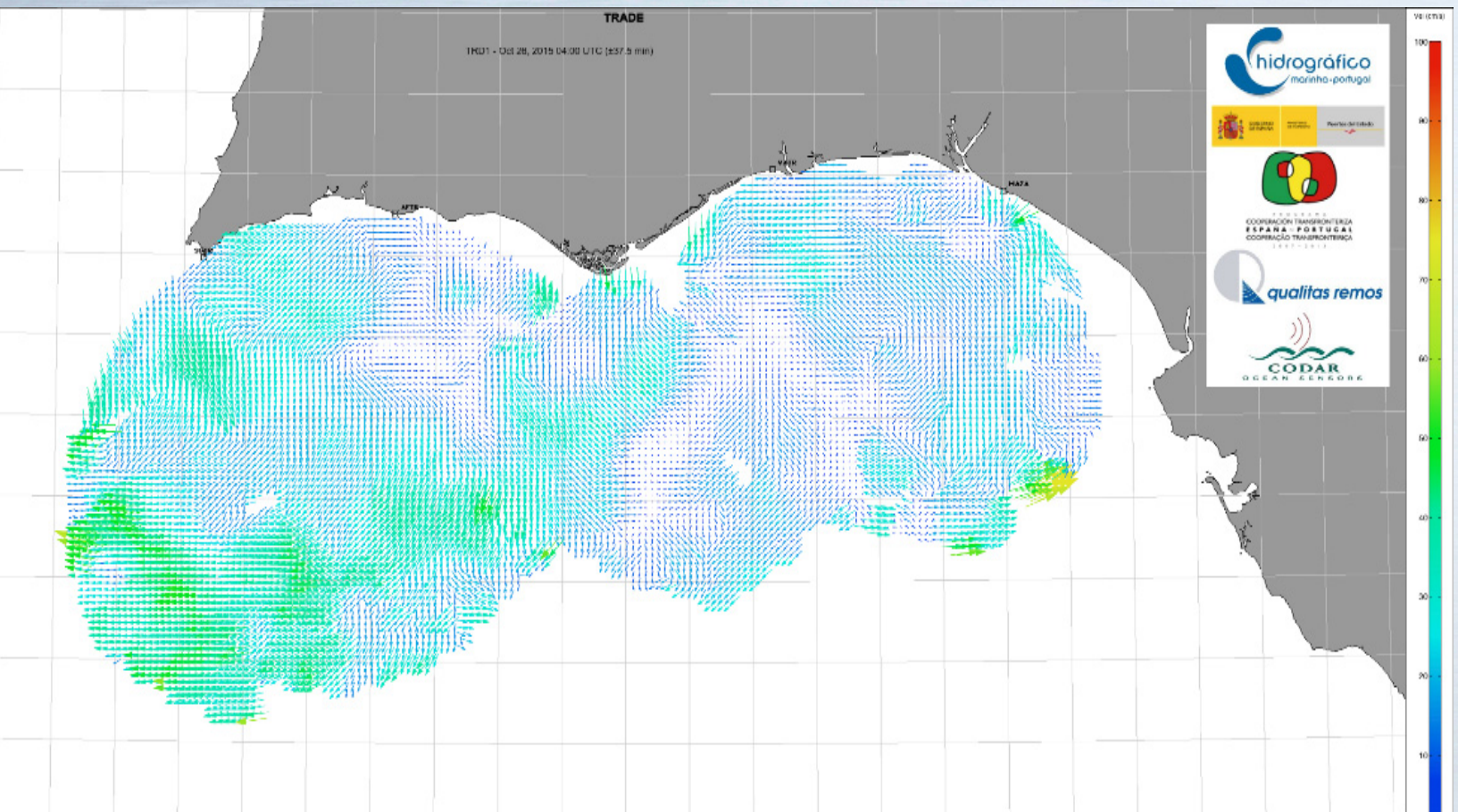




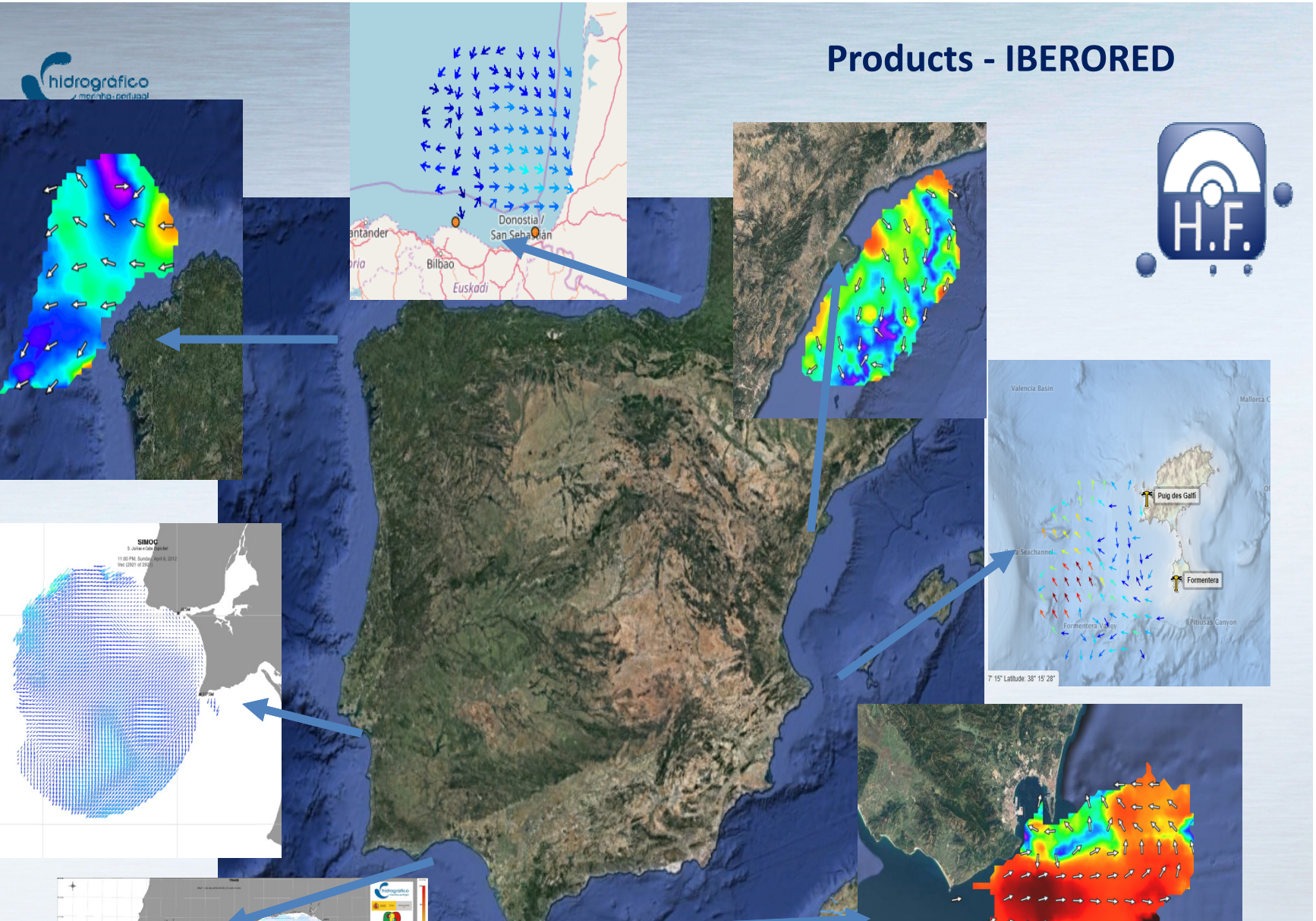
Project Trade



Project Trade



Products - IBERORED



GROUP OBJECTIVES

The HF radars working group of in the Iberian Peninsula is an inter-institutional network created with the objective of improving the visibility and exploitation of data generated by HF radars on our shores. It consists of those Spanish and Portuguese institutions that meet one or more of the following requirements:

- HF radar owners or managers
- Users or developers of tools for exploitation of the data
- HF Radar technology providers

The group will have an activity specific and specialized in HF radar technology and its applications.

This working group is part of the PROTECMA network and, more specifically, of the Operational Oceanography and technological developments WG.

OPERATIONAL SYSTEMS

This is a list of the HF Radar operational systems on the Iberian Penninsula:

País Vasco - Euskalmet, AZTI

Access to System

Galicia - Puertos del Estado, Intecmar

Access to System

Ría de Vigo - Universidad de Vigo

Access to System

SIMOC - Instituto Hidrográfico

Access to System

Golfo de Cádiz - Puertos del Estado, Instituto Hidrográfico

Access to System

Estrecho de Gibraltar - Puertos del Estado

Access to System

Canal de Ibiza - SOCIB

Access to System

Coastal Waters Research Synergy Framework

H2020 Project

Unlocking our potential for coastal innovation growth

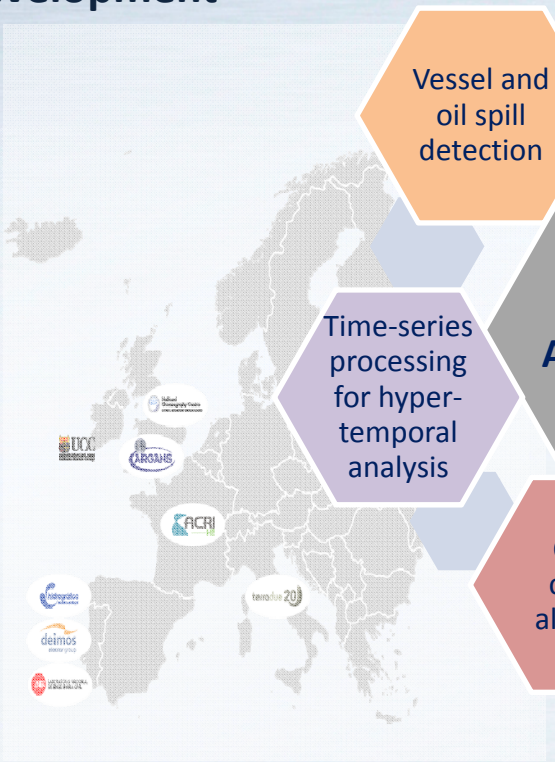
Co-ReSyF is a strategic initiative funded by the European Commission, aiming to support the development of **coastal research** through satellite data. This will be achieved by creating an **online platform**, using cloud infrastructure, to support research applications that use **Earth Observation (EO)** data for coastal water monitoring

Coastal Waters Research Synergy Framework

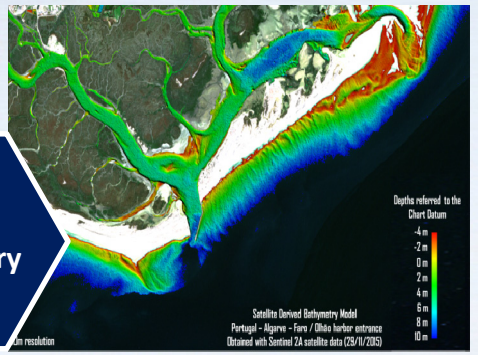
H2020 Project

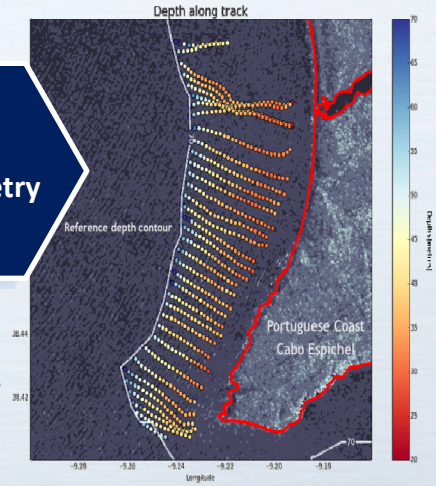
Unlocking our potential for coastal innovation growth

Five Research Applications under development



- Vessel and oil spill detection
- OPT Bathymetry
- Time-series processing for hyper-temporal analysis
- **Research Applications**
- SAR Bathymetry
- Ocean coastal altimetry



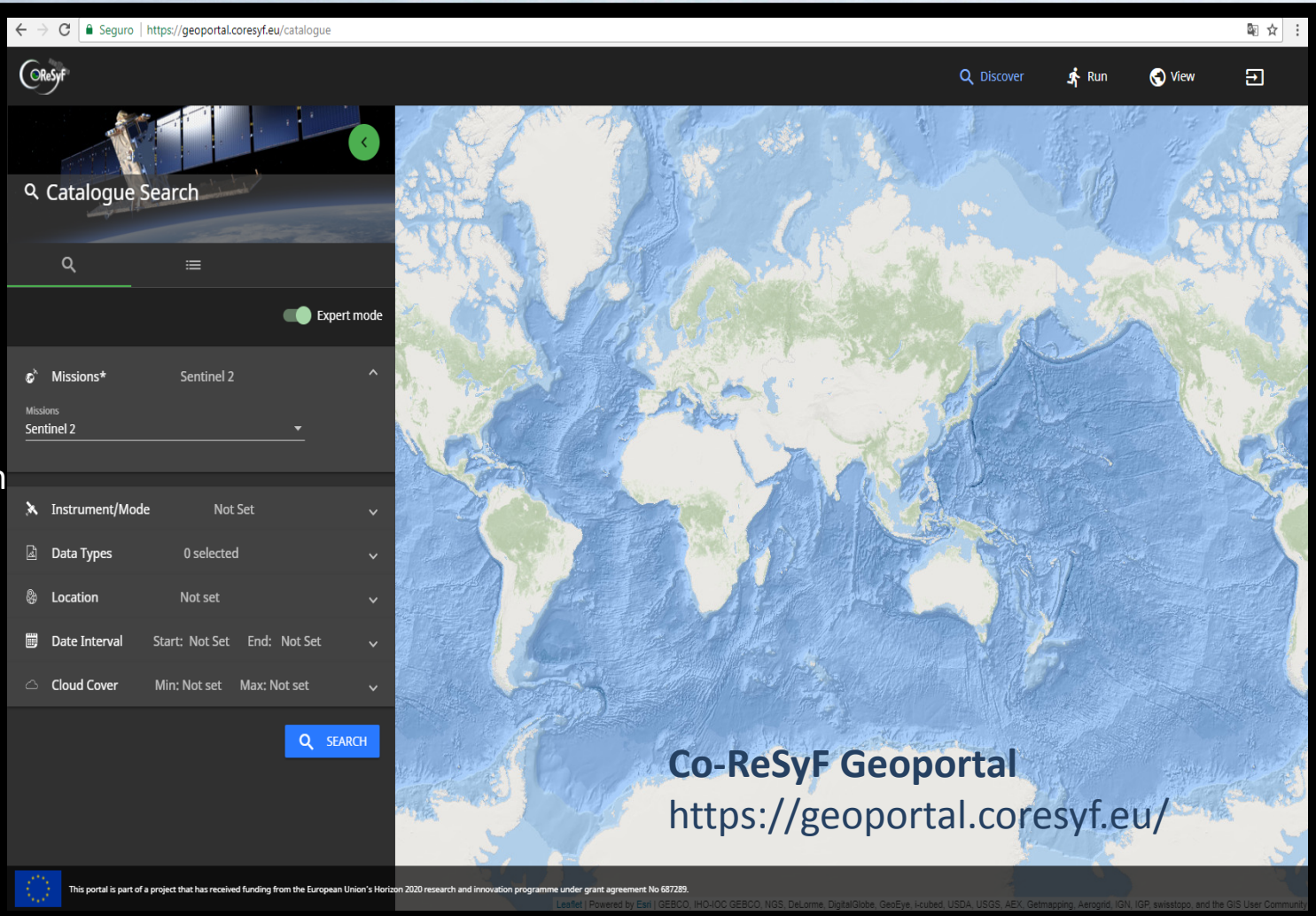


Hidrográfico contributions

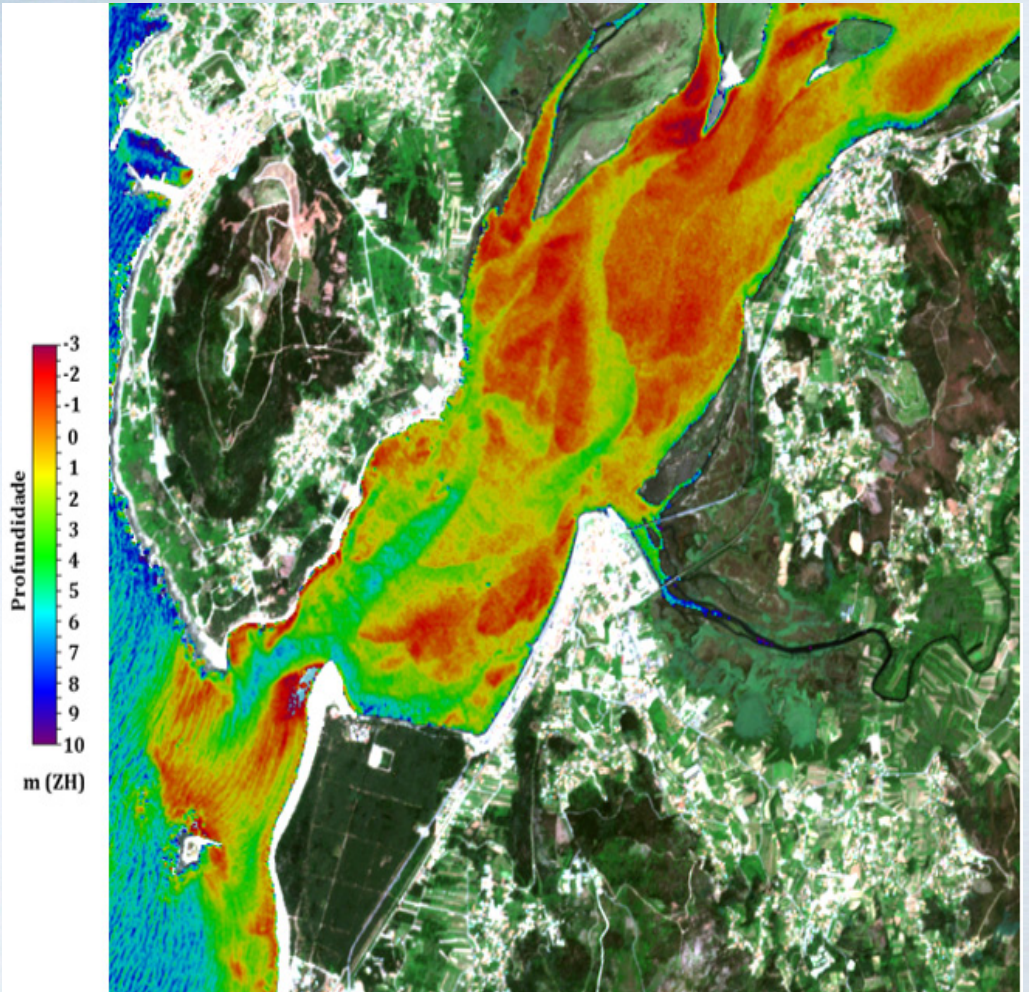
Coastal Waters Research Synergy Framework

Co-ReSyF Geoportal

- Search the EO data through the Co-ReSyF Catalog
- The applications are run online within the platform
- Have the ability to monitor job progress
- Retrieve results from the EO input data and from the application used

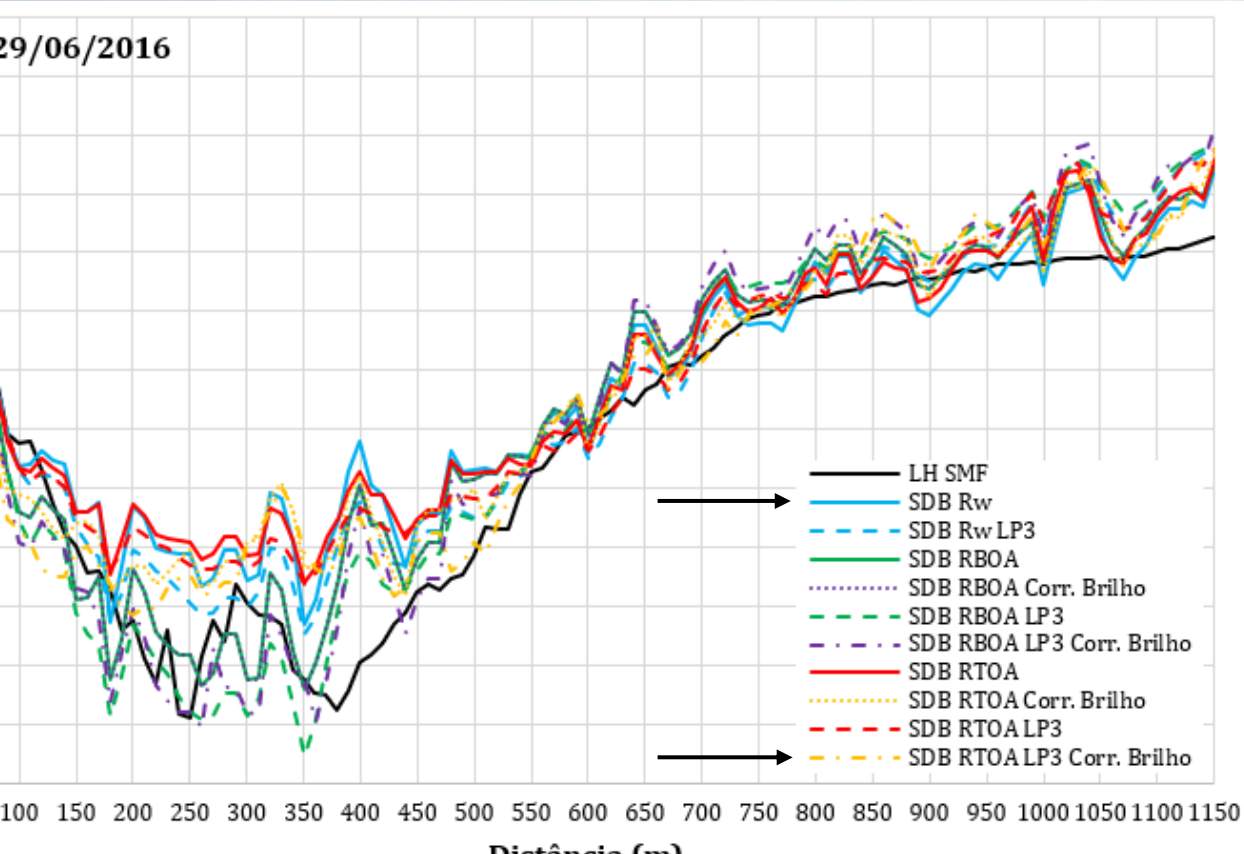


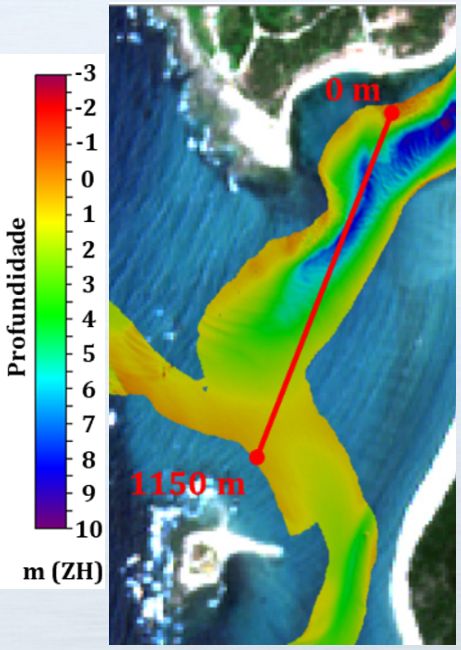
Project Mapping of the Portuguese Sea



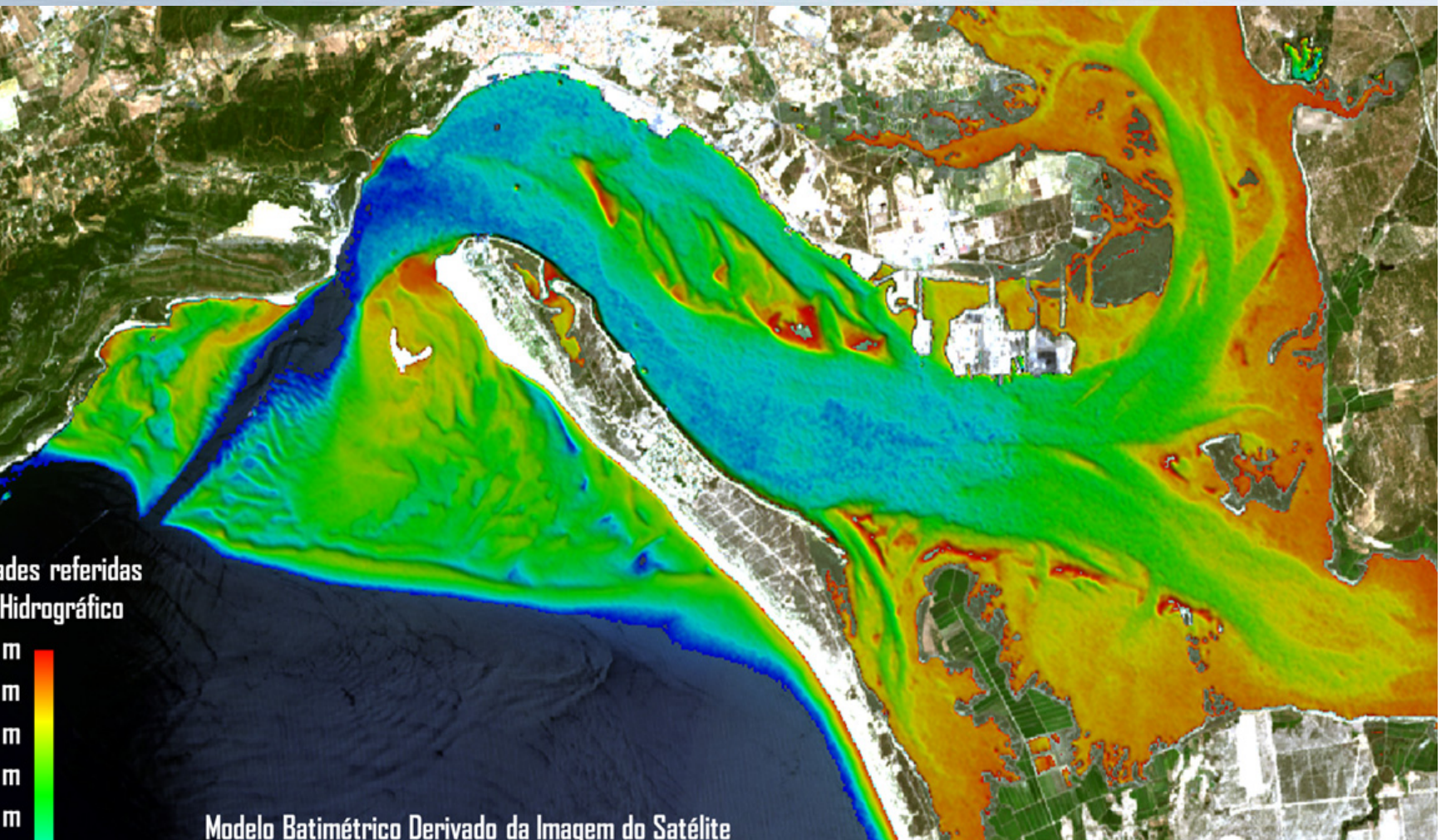
Project *Mapping of the Portuguese Sea*

Results

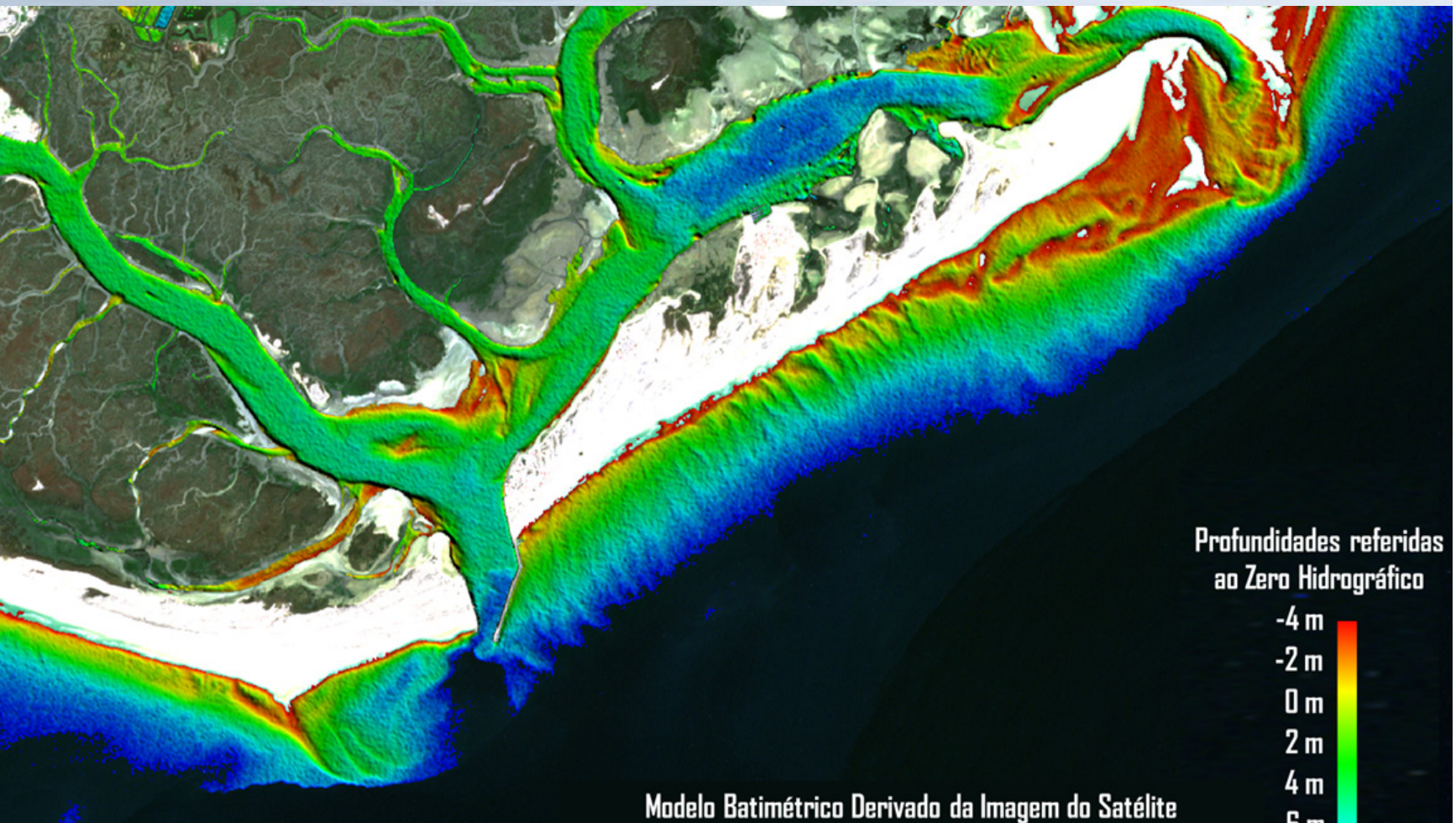




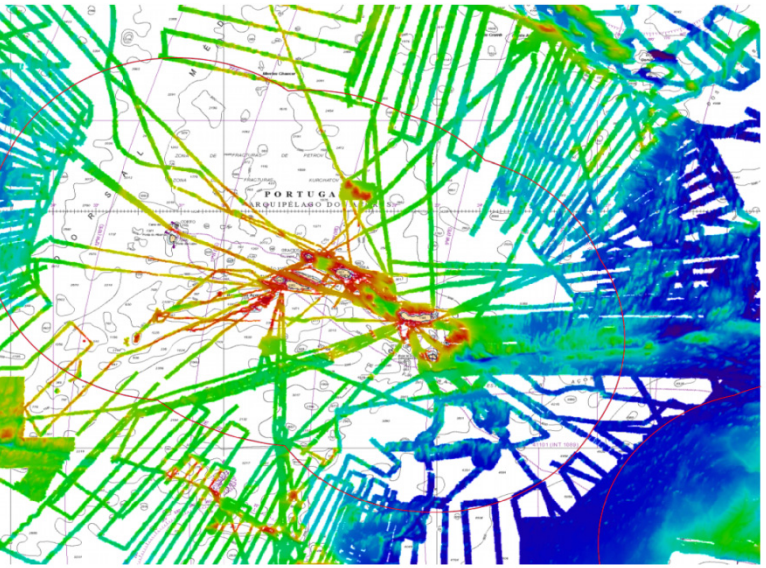
Project *Mapping of the Portuguese Sea*

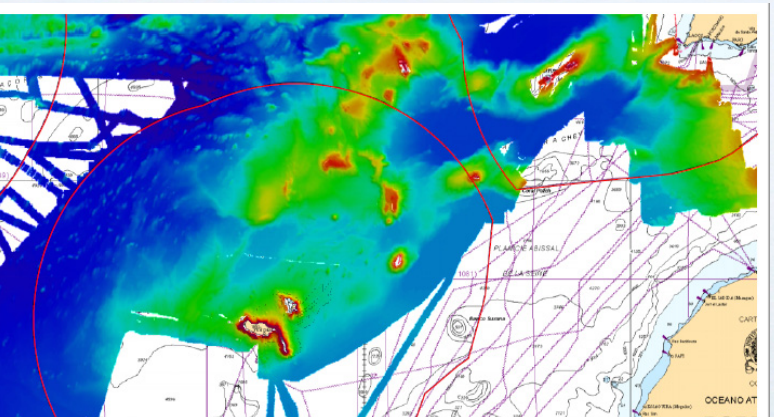


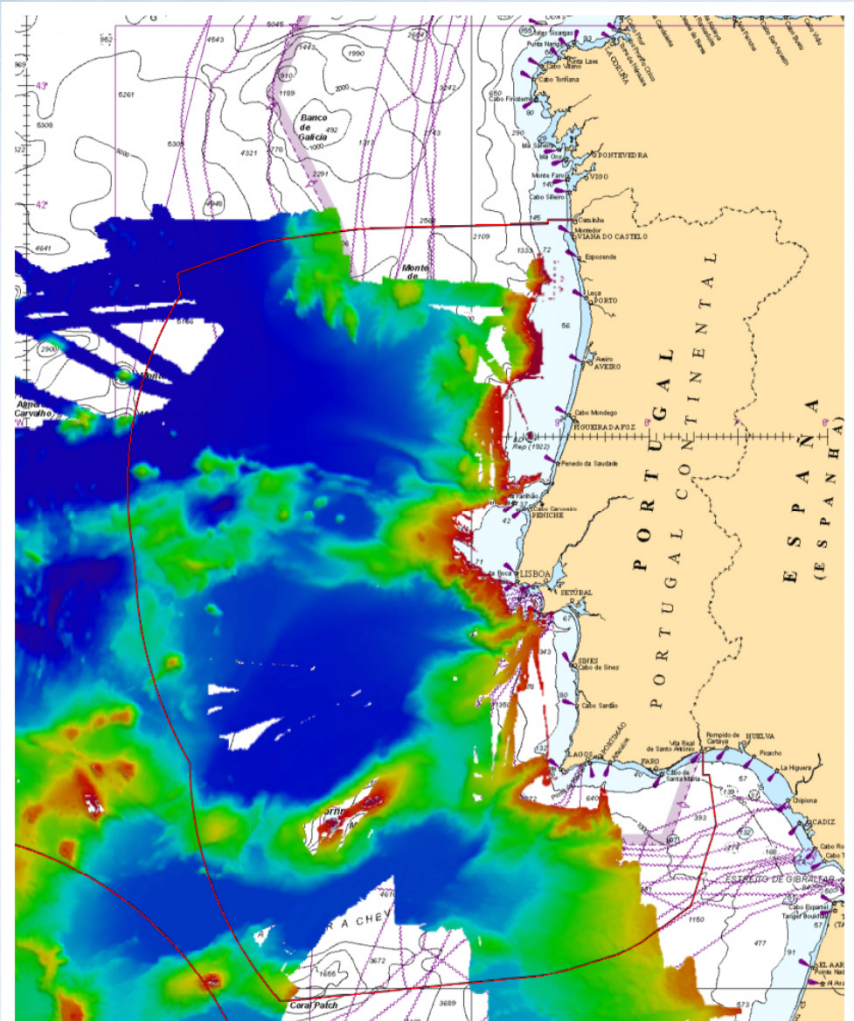
Project *Mapping of the Portuguese Sea*



Project *Mapping of the Portuguese Sea*







International Colaborative European Projects

CDR José Alberto de Mesquita Onofre

27 de maio 2017