

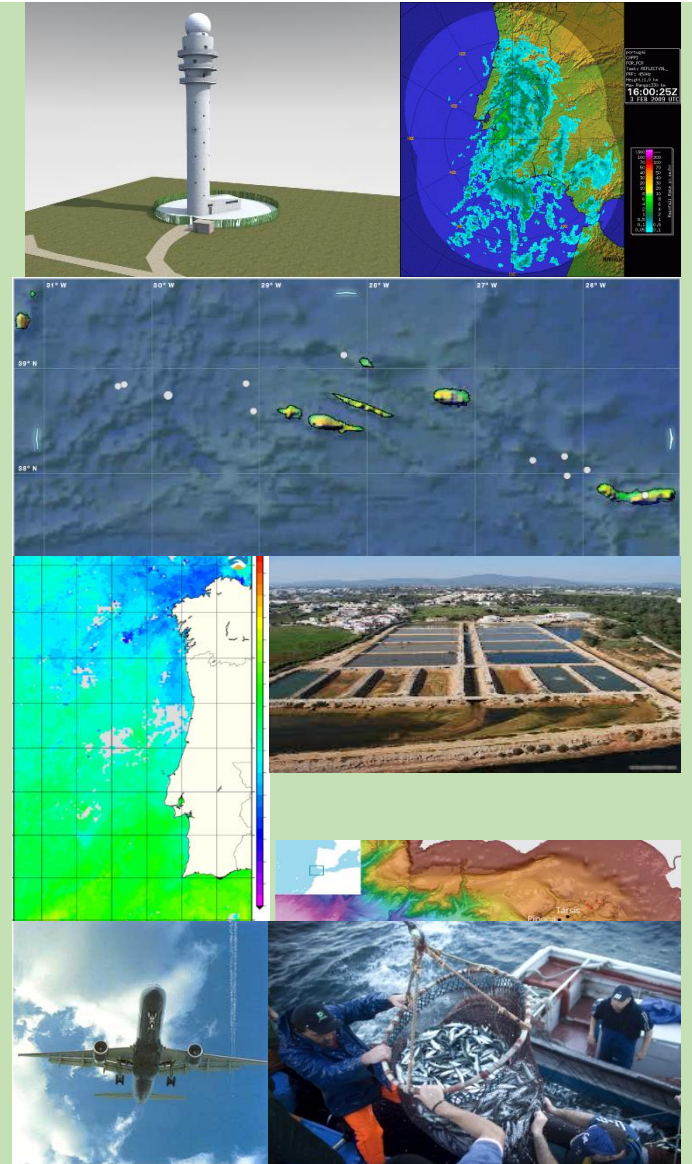
# THE PORTUGUESE INSTITUTE FOR THE OCEAN AND ATMOSPHERE



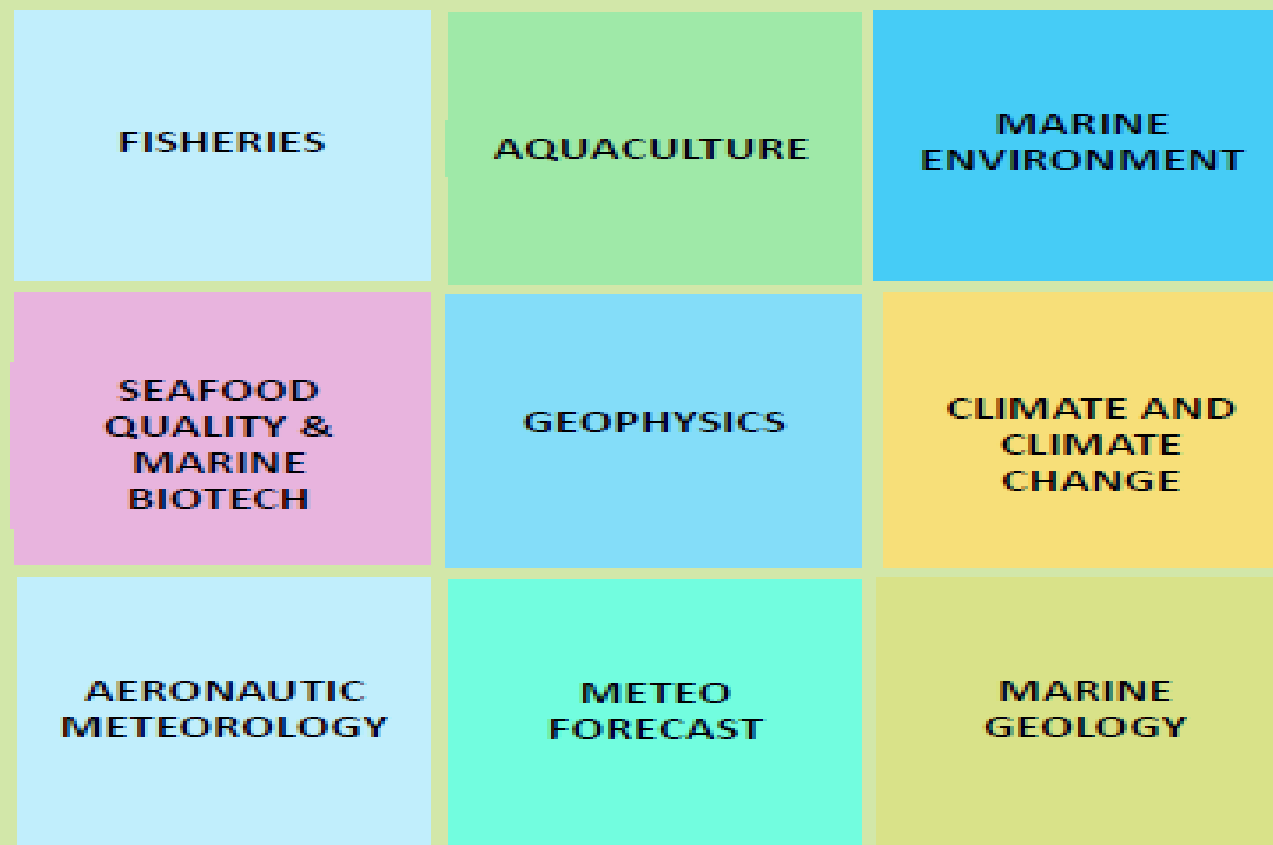
The *Instituto Português do Mar e da Atmosfera* (IPMA) is a Public Research Institution devoted to **Ocean** and **Atmospheric** Sciences and Technology, existing since 2012.

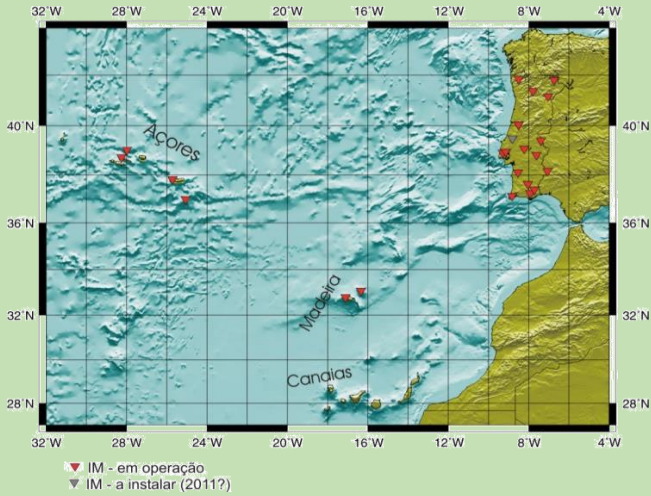
## IPMA's mission:

- To provide **technical and scientific support** to national policy definition,
- operating and maintaining **scientific infrastructures**;
- acquiring data, processing and maintaining the **national scientific databases on its areas of competence**;
- **Promoting and coordinating scientific research** and technological development in its areas of expertise.

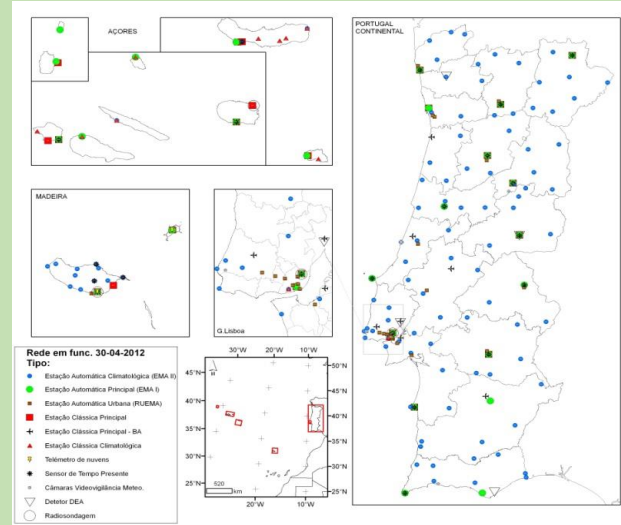


# The Scope of IPMA





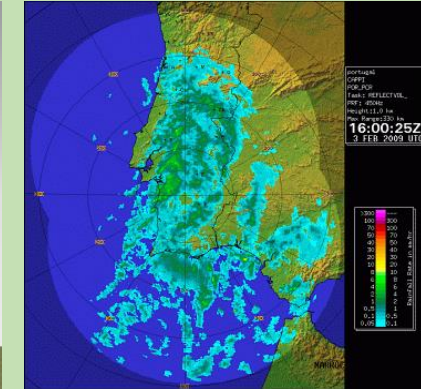
Sismological network



Climate and meteorological networks



Meteorological radars network (now cast)



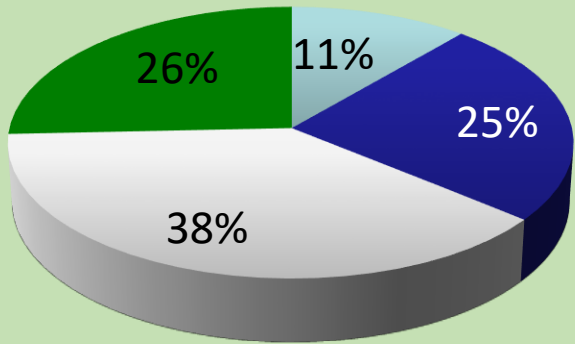
Pisciculture Pilot Station (incl. Labs, earth pounds, off shore cage)



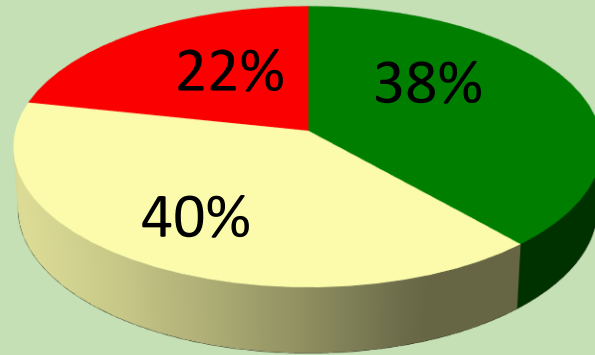
Research Fleet

430 Personnel

Budget 2016



- Researchers
- Technical (1st)
- Technical (2nd)
- Admin/Other



- State budget
- Sci Projects
- Own revenue

- 70 researchers (incl Post-docs and invited researchers)
- 138 *papers* ISI (2015)
- 78 research projects, which 26 EU, 3 FP7 coordinations
- National cooperation with all PT marine research players;
- International cooperation focused on the Atlantic, the Mediterranean and the Indian Oceans, towards sustainable blue growth.



## NI Puntazzo

- Build in 2001
- Small support vessel (11m) to IPMA offshore cage - Pilot Offshore Aquaculture
- Status: Currently INOP



## NI Diplodus

- 17 m long; Max speed 12 knts;
- Habitat mapping; shallow water AUV operations; small scale fisheries;
- Supports offshore aquaculture in Algarve;
- Sails between 40 and 80 days



## NI Tellina

- Sister ship to Diplodus;
- Owned by IPMA, operated by FOR-MAR since 2015 (Protocol established);
- Used for training, by FOR-MAR Trainees; Pilots, machine engineers, fisherman;

# NI NORUEGA

IPMA  
RESEARCH FLEET

- Build 1978, was offered by Norway;
- Trawler
- Length 47m; Beam 13 m; draft 5.6m;
- Crew 18 pax, techs 12 pax;
- Autonomy 7700 NM;
- Main operating vessel used for fisheries research (DCF), oceanography and since 2012 high resolution seismics;
- Sails between 130 and 170 days/yr;



# Other PT Research Vessels

Hydrographic  
Institute  
Research  
Fleet



## NRP Auriga and Andromeda

Coastal

Non-DP

Geophysical Surveys (shallow water)



## NRP Gago Coutinho

Regional Oceanic

DP

EM120; EM710, ADCP, SBP)

## NRP D. Carlos I (sister vessel)

Regional Oceanic

Non-DP

Multibeam (EM12; ADCP, SBP)

**Support to the Continental Shelf Extension Project**

# THE NI MAR PORTUGAL

## Project:

- Budget ~12.9 M€ (11M€ EEA, 1.9 M€ National Budget)
- Project Promoter IPMA; Donor Project Partner: IMR (Norway)
- Two main development phases:
  - 1st phase: **Acquisition** of a vessel (international tender)
  - 2nd phase: **Refitting** of a vessel and fitting of scientific equipment (international tender)

## Project status:

*Budget execution: 9.5 M (74%)*

- *Phase one: terminated*
- *Phase two: ongoing. International tender for the refit issued (finishes 7 Nov.)*

# NI MAR PORTUGAL

## IPMA RESEARCH FLEET

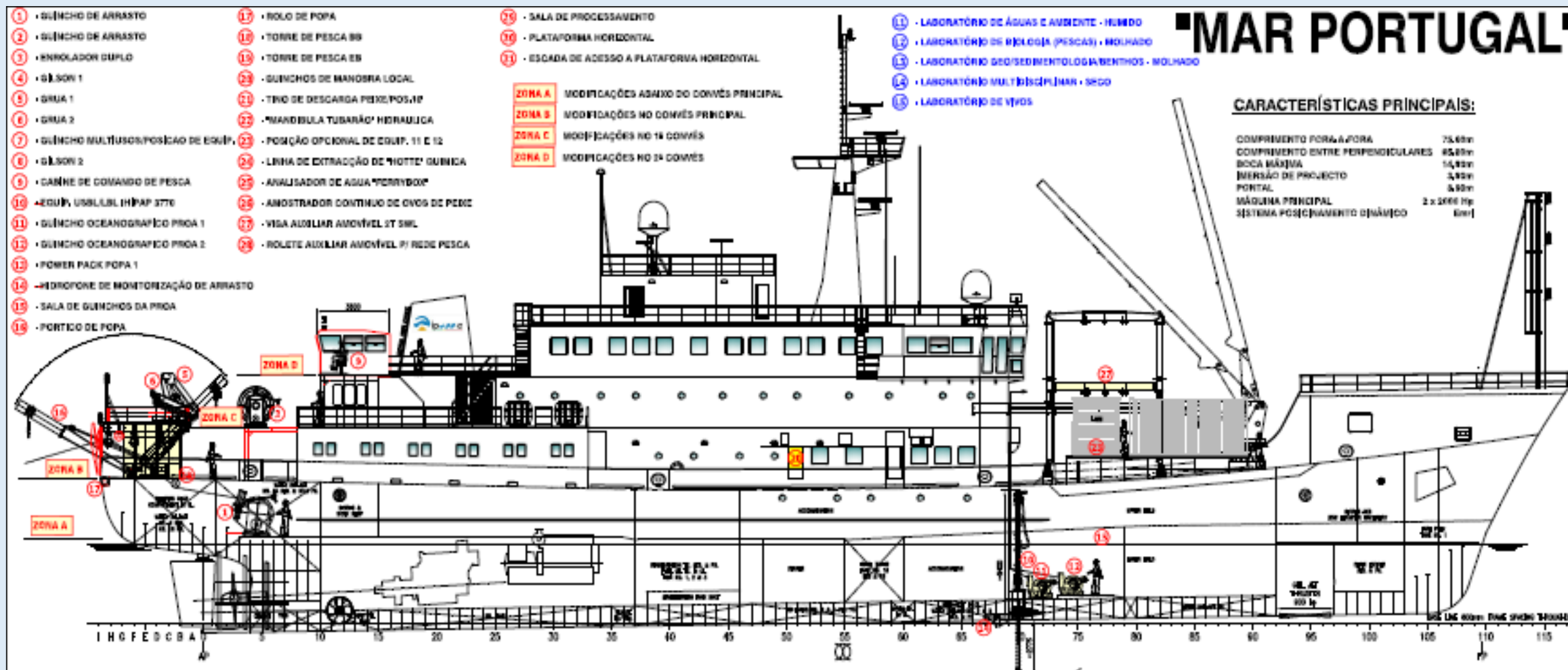
- Year 1986 refit 2013
- Length: 75; Beam: 15 m; Draft: 4.5 m
- Loyds Class 100A1
- EMRI DP system (one azimuthal, one tunnel, one main)
  
- Container capacity: 3x20'' or 4 x10'' Iso containers.
- *Endurance*: 40 days
- Two four stroke engines and one independent azimuthal
- 4x400 KW Generator + 1 emergency generator
- Speed: 13/10 knts (Peak/transit)
- Seismic compressors
- 10 T A Frame and a 30 T crane aft
- Moon Pool (1.2x1.2m)
  
- Accomodations: 45 pax (15 crew 30 Scientific and Technical )
- Sci facilities: Dry Lab, Wet lab, processing room, conference room
- Gym, sauna, cinema (dark room), lounge
- Workshop



# THE REFIT (2013)

NI  
MAR PORTUGAL





International Tender: Base price 2 M€

- **Main Operations:**

- Fisheries (bottom and pelagic trawling)
- ROV operations (ROV LUSO 6000m workclass)
- Oceanography
- Geophysical and geotechnical

- **Main Applications (IPMA):**

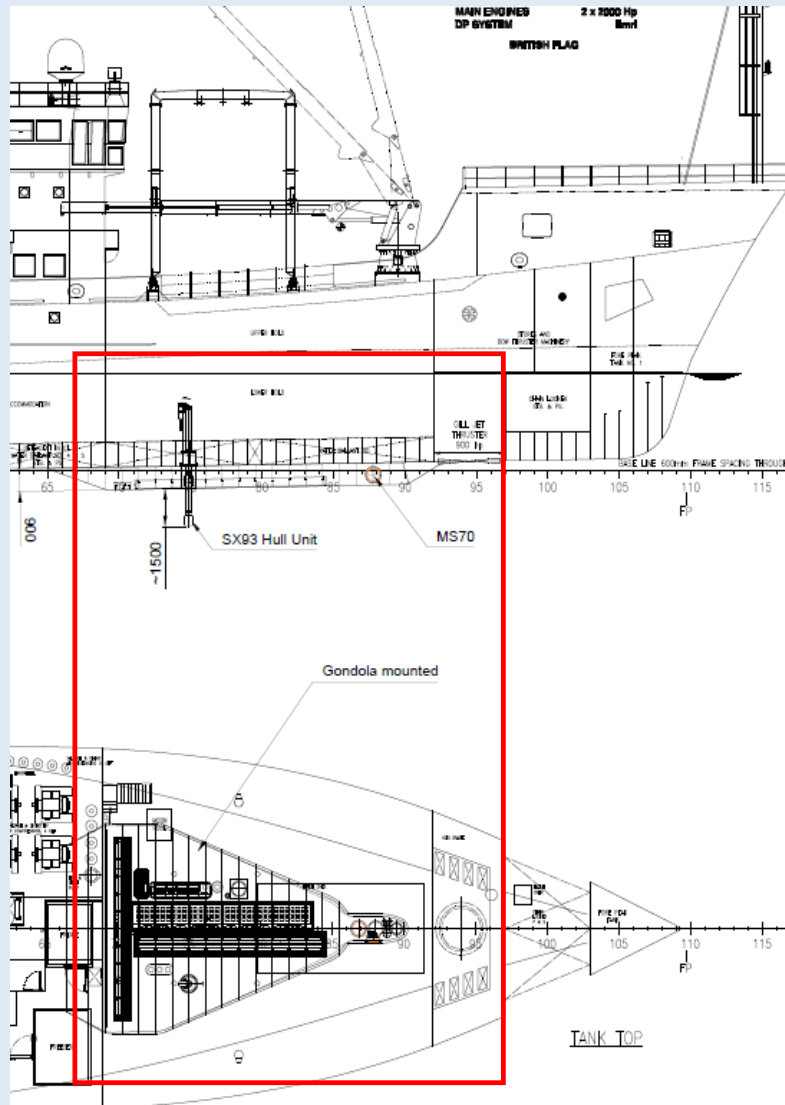
- Living resource evaluation (CFP) and bioprospecting
- Environmental monitoring and baseline studies (MSFD)
- Non-living resource evaluation
- Increase marine knowledge through sampling, measuring and observations

- **Other applications:**

- Training platform for officers merchant marine (Nautical school)
- Support the community of portuguese speaking african countries
- Support S&T (national and International)
- Anti-pollution operations
- SAR operations



**Target: sail between 200 days/yr (breakeven) and 250 days/yr**



## Hull Mountable Systems

Estimated Budget 3.5 to 5 M€

Equipment:

- Gondola Fitting
- Omnidirectional sonar
- Fisheries Multibeam
- EK80 or equivalent (5 frequencies)
- SBP
- Multibeam bathymetry
- ADCP?

# THE N.I. “MAR PORTUGAL”



## A new platform for Ocean Research in Portugal to the service of the National and International Scientific Communities



Navio de Investigação  
**MAR PORTUGAL**

Navio de investigação para águas profundas com certificado de classe emitido pela Lloyd, orientado para operações de geofísica e operações com veículos remotos e operações de pesca de arrasto

Velocidade Máxima: 12 Nós  
Comprimento: 75 metros  
Largura: 15 metros  
Calado: 4,5 metros  
Investigadores e Equipas Técnicas: 30  
Tonelagem: 1000 t



MINISTRO DA AGRICULTURA  
E DO MAR



# THANK YOU!



## The National Ocean Strategy

The PT government approved a Portuguese Marine Strategy;

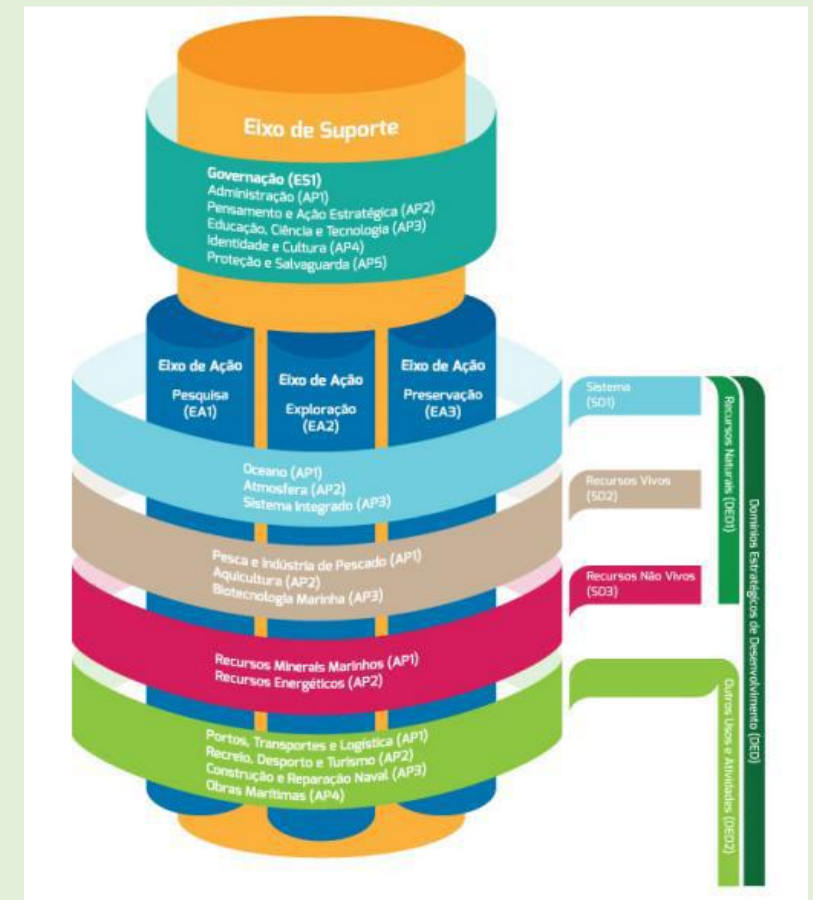
The **economy of the sea** was declared as a **smart specialization priority in all Portuguese regions** and for the country as a whole;

Ocean System

Living Resources

Non-living Resources

Maritime and Leisure



# Why is it important to Portugal ?

- Portugal has the **4<sup>th</sup> European largest marine exclusive economic zone** and the **11<sup>th</sup> in the world** which is still largely unknown and unexploited;
- The extended platform will provide Portugal **with jurisdiction over a very large area of the NE Atlantic**: which contains high diversity of habitats and a potential for non-living resources;
- The **focus on Blue Growth** drives new exploration and exploitation initiatives, and opens opportunities for the **development of a new generation of highly qualified professionals** for maritime activities;

# Why is it important to Portugal ?

| FCT<br>Research<br>Units | Universities |      |    |    |      |    |        |     |     | Keywords                           |
|--------------------------|--------------|------|----|----|------|----|--------|-----|-----|------------------------------------|
|                          | IPMA         | UAVR | UC | UL | UALG | UM | UPORTO | UAC | UNL |                                    |
| CIMAR                    | X            |      |    |    |      |    | X      |     |     | Marine Environment                 |
| CCMAR                    | X            |      |    |    | X    |    |        |     |     | Biotechnology                      |
| IDL                      | X            |      |    | X  | X    |    |        |     |     | Climate, Geosciences, Oceanography |
| LARSYS                   |              |      |    | X  |      |    |        |     |     | Ocean Engineering                  |
| MARE                     |              |      | X  | X  |      |    |        | X   | X   | Marine Biology and Environment     |
| CESAM                    |              | X    |    |    |      |    |        |     |     | Marine Environment                 |
| CVARG                    |              |      |    |    |      |    |        | X   |     | Volcanology                        |
| CIMA                     |              |      |    |    | X    |    |        |     |     | Marine Environment                 |

*Figure 1: Portuguese Research Groups with marine focus. There is an increasing level of integration within the research community, but a new step is needed to achieve competitiveness in Ocean Research.*

## *Phase one: vessel acquisition (international Tender)*

- On site inspections of proposed vessels (with IMR)*
- Feasibility study for the conversion*
- Technical Inspections of main engines, generators and shaft*



International Tender: Winning proposal

R/V Kommandor Calum (Hays Ships)  
Now **N/I MAR PORTUGAL**

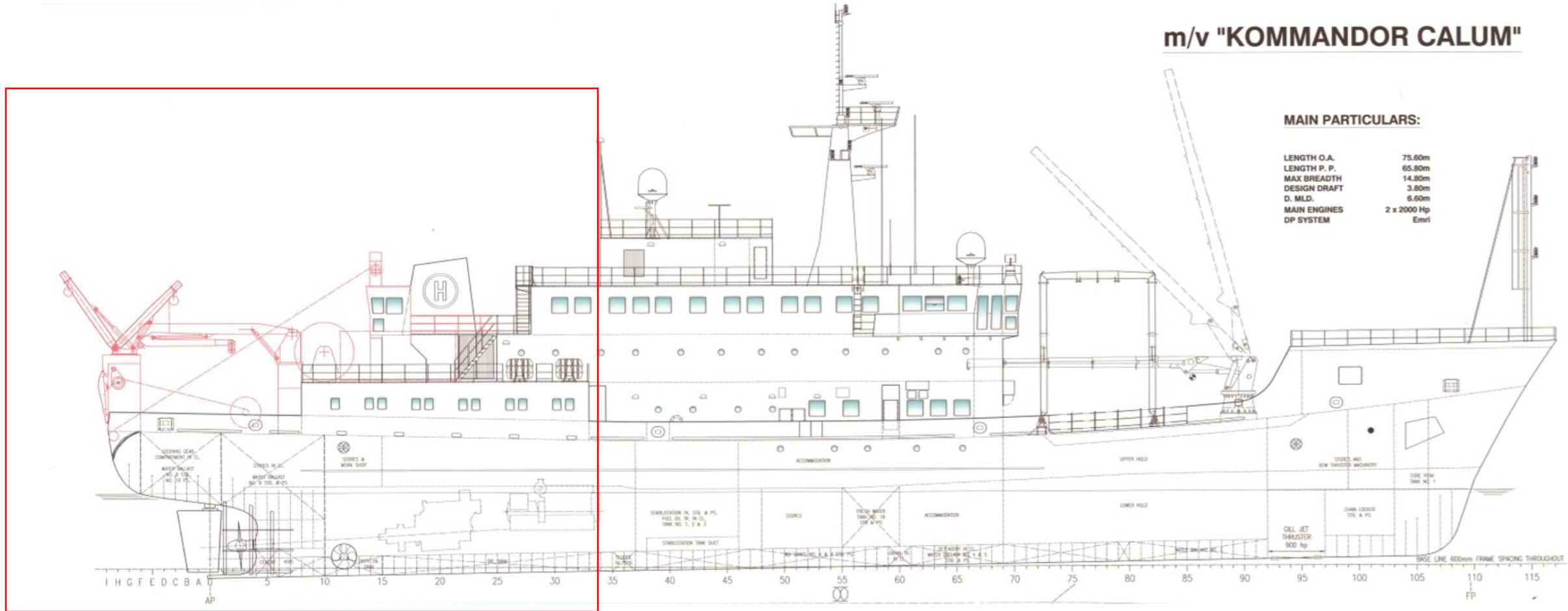


# NI MAR PORTUGAL



# NI MAR PORTUGAL (2nd Phase)

## *Vessel Transformation for fisheries*



Project completed: end 2016