

Research Vessel Mário Ruivo: performance after the modifications

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Overview

- ❖ Under the program European Economic Area Financial Mechanism, EEA Grants 2009-2014 (Portugal), IPMA acquired the ocean-going research vessel in 2015
- ❖ The vessel undertook significant transformations that allowed the fulfilment of the objectives of the project and became a new platform to conduct research on the Atlantic Ocean
- ❖ Sea trials took place in end of June and beginning July 2019, and on the 10th July 2019 the vessel was ready for operations

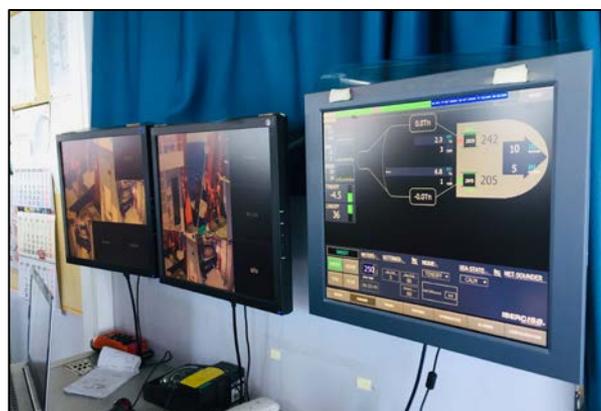


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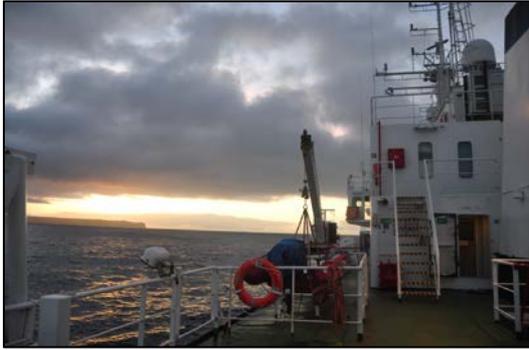
- ❖ The Court of Auditors did not approve the contract for signing-on of crew
- ❖ The legal framework changed and IPMA was able to hire the crew (outsourcing)
- ❖ Coronavirus March 2020

The good news

December 2020 | Demersal

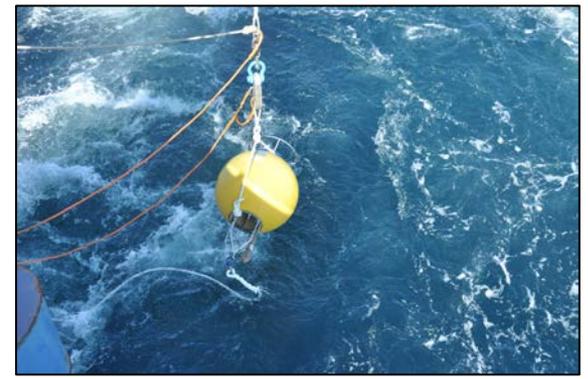
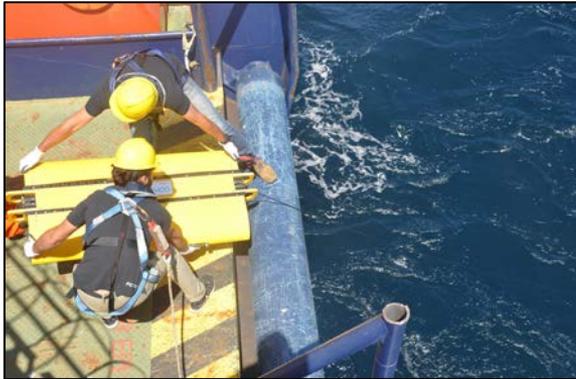


December 2020 | Demersal

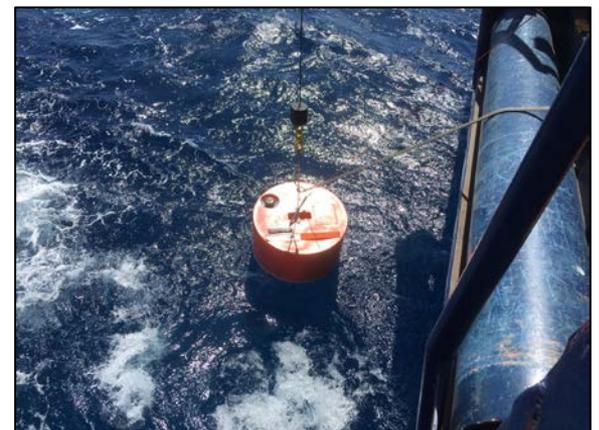
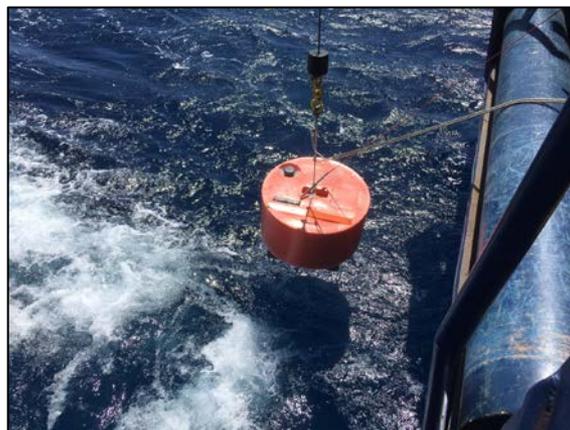


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Water column profiler + ACDP



Ocean-bottom seismometer

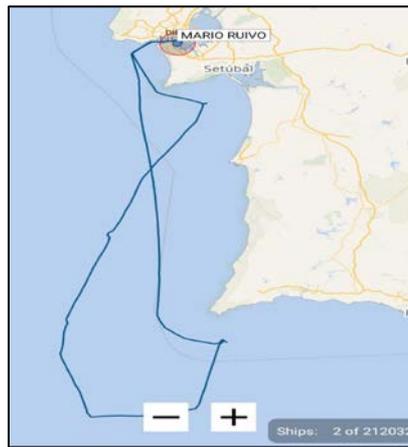


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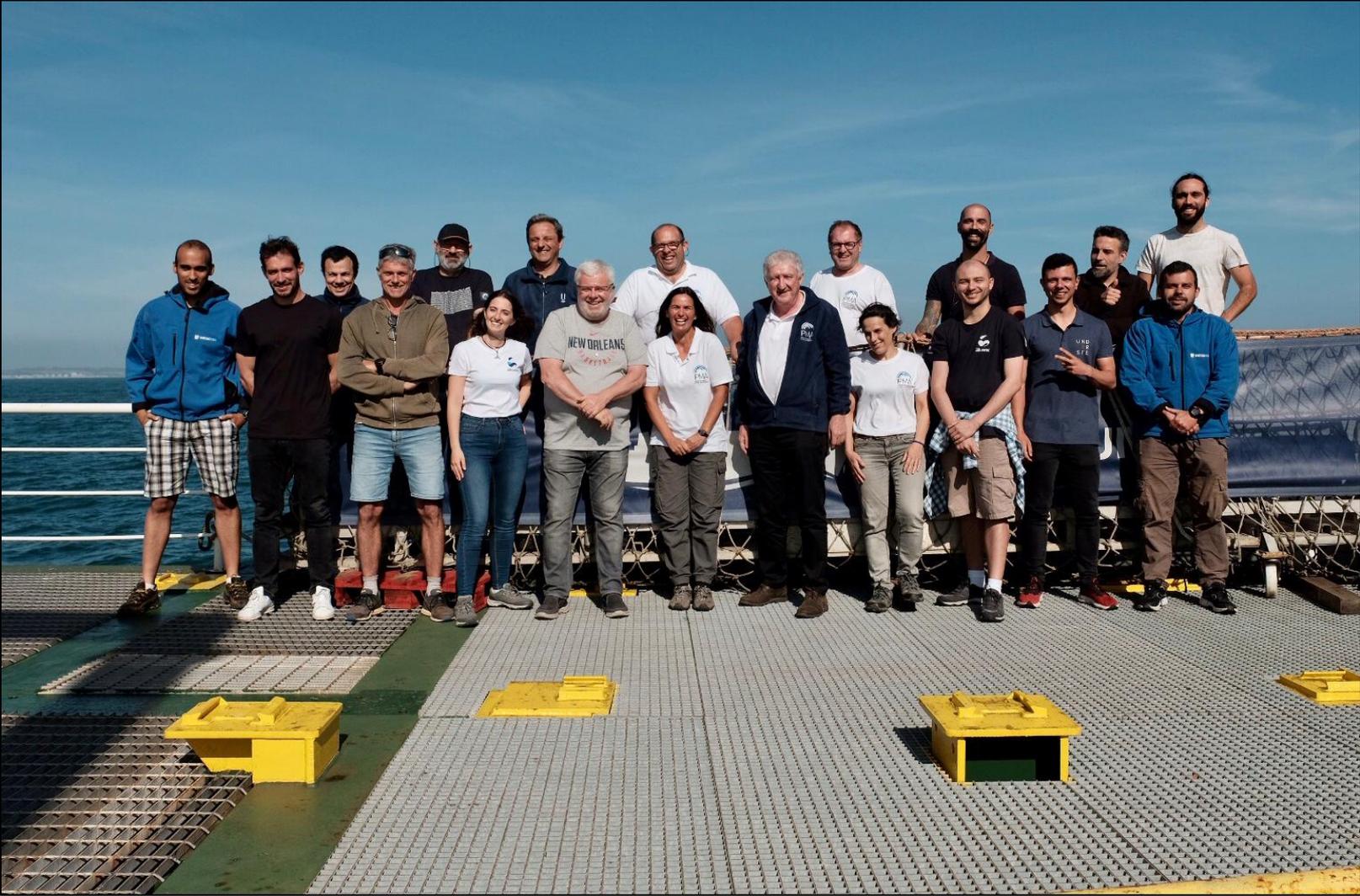
Glider



FerryBox



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RV Mário Ruivo :: next step

- ❖ Despite the improvement and successful campaigns, the vessel would benefit greatly with tools in what concerns habitat mapping, acoustic oceanographic monitoring and research, or interaction with seafloor and water column observatories
- ❖ These tools would improve the robustness of studies related with the application of the Marine Strategy Framework Directive, demersal studies using bottom trawls or more sophisticated fishery acoustics

The project

Predefined project EEA Grants 2014-2020 - PDP3 | Budget: 2 M€

To install a set of hull-mounted sensors that will provide new capacities for the RV Mário Ruivo:

- ❖ hull mounted Acoustic Doppler Current Profiler (ADCP) for continuous oceanographic measurements
- ❖ swath bathymetry system for detailed seafloor mapping
- ❖ multi-frequency acoustics to better estimate biomass and distribution of mesopelagic and epipelagic fishes or macrozooplankton
- ❖ sub-bottom profiler (sub-images of the seafloor)

Additionally, the upgrade of an existing underwater acoustic system can provide easier communications with ROV Luso and the new generation of deep seafloor observatories.

Participating Institutions

Portuguese Institute for the Sea and the Atmosphere

Promoter

- ❖ Public research institution devoted to ocean and atmospheric sciences and technology
- ❖ IPMA's mission is the provision of technical and scientific support for the definition of national policy, operating and maintaining scientific infrastructures, marine platforms and research vessels, data acquisition and processing, maintenance of national scientific databases on its areas of competence, and promotion and coordination of scientific research and technological development in its areas of expertise
- ❖ RV Mário Ruivo ownership, operation and management was committed to this Institute following the initial EEA contract for the acquisition and transformation of the vessel

Participating Institutions

Institute of Marine Research

Partner 1

- ❖ The Institute of Marine Research (IMR) is one of the biggest marine research institutes in Europe. Main activities are research, advisory work and monitoring
- ❖ IMR's role in this project is to advise on technical specifications and solutions achieved for fitting of the scientific equipment in RV Mário Ruivo
- ❖ IMR will cooperate with IPMA on the definition of the technical specifications of the hull-mounted equipment, will follow-up the evaluation process of the tender, and also the different levels of test in drydock and at sea

Next Campaigns in 2021

- ❖ Crustaceans aiming at to estimate the relative abundance of *Nephrops norvegicus* (Norway lobster) and deep-water rose shrimp for use in the assessment and advice process.

4 students in the scope of the EUROFLEETS+ Floating University

- ❖ UPFLOW aiming at to understand the upward movement of hot rock in the mantle (~30-3,000 km depth beneath our feet) towards the surface [European Research Council funding].
- ❖ EMSO-PT Oceanographic Campaign Leg 2
- ❖ Demersal fish assessment



RV Mar Portugal

RV Mário Ruivo

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