

ID3- OPERATIONAL OCEANOGRAPHY AND EUROPEAN OCEAN OBSERVING SYSTEM (EOOS)

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Abstract - Earth's climate is facing severe changes – the carbon dioxide levels are higher than ever, the melt of the ice sheets at Greenland and Antarctica are accelerating, and we experience more and unprecedented extreme weather conditions leading to large loss of life and damage to property. These changes also affect the physical and biogeochemical conditions of the ocean with the risk of shifting the marine ecosystem across the tipping point of irreversible change in species composition.

The effects of climate change on the ocean will have an impact on all economic activities at sea that include shipping, fishery, energy, land-ocean interactions, coastal protection, sustainable environmental and ecosystem management, tourism and security. Therefore, there is a demand for timely delivery of high quality operational oceanographic services and products to support planning over short and long time scales, as they are fundamental for safe performance of marine and maritime activities. Moreover, there is a critical need to inform society, ocean governance and decision-making to support a future sustainable knowledge-based maritime economy. User needs for regular, near real-time and quality-assured services require an operational approach across a wide range of societal benefit areas. This has triggered a new wave of marine knowledge innovation in order to fill the gaps and improve the quality and resolution of the services, e.g., seamless forecasting, an operational ecosystem approach and operational marine climate services.

This challenge requires close communication and cooperation between industry, marine science and operational oceanography service providers to address user requirements, scientific challenges and the development of products and services. Recent surveys reveal important gaps in knowledge and data about the state of the oceans and regional seas, coupled physical-biogeochemical processes, seabed resources, marine life and risks to habitats and ecosystems. This calls for coordinated

investments in basic marine research, establishing sustained in-situ European Ocean Observing System (EOOS) including an open and free data exchange via the existing ROOS Data Portals and EMODnet initiative, developments of very high resolution qualified coupled physical-biogeochemical models, and a sustained European Operational Oceanographic Service (Copernicus Marine Service) including national uptake initiatives.

Over the past 20 years, EuroGOOS members have contributed to development of:

- Improved use of new real-time observation technologies,*
- Open and free real-time exchange of ocean observations and model forecast products,*
- Ocean forecasting via national and EU supported research,*
- The Copernicus Marine Service and integration of European operational Oceanography,*
- Numerous new operational oceanographic products and services.*

EuroGOOS is therefore well-suited and prepared to play an active role in the future development of operational oceanography and marine services in Europe.

Recently EuroGOOS has in close cooperation with the European Marine Board taken a leading role to ensure coordination of the European contribution to sustained marine observational system through the promotion and rationalization of a European Ocean Observing System (EOOS). EuroGOOS will in this context additionally also work closely with EU Copernicus Marine Service, EMODNET, EU Marine Research Infrastructures, JPI Oceans, EEA, ESA, EUMETSAT as well as the climate community.

Keywords: Operational oceanography, EOOS, EuroGOOS, observations, services

ID4- ROA/ UCM OBS POOL AND ALBORAN PERMANENT OBS: 10 YEARS OF EXPERIENCES

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Keywords: long term OBS, Alboran OBS.

The Royal Spanish Navy Observatory (ROA) acquired three long term broad band OBS in 2010 thanks to the FOMAR project (CGL2005-24194-E). These OBS were deployed in 2011 at SW San Vicente Cape in the frame of the ALERTES project (CGL2010-19803-C03), using the navy patrol "VIGIA", after recovering them data shown problems with the seismometer levelling. After reparation by the manufacturer, a new deployment (using the navy patrol "MEDAS"), close to Gibraltar strait was done for a period of eight months (since the end of January to the beginning of September, 2014).

In April of 2014, three new OBS were acquired by UCM conforming the ROA/UCM OBS pool (FOMAR OBS pool). These three new OBS were tested in the Gibraltar strait for two months (since September to November 2014), using again

a navy patrol (Vigia). Although these six OBS were deployed in shallow waters (between 200 and 900 m deep) and therefore, the data have a high noise level, all systems worked correctly, being a good functional test for the next planned deployment at SW of the San Vicente Cape in September 2015, as a part of the ALERTES-RIM project.

On other hand, the ALBO project started on 2005 and was funded by the Ministry of Education and Science (MEC), IEO, UCM and Spanish Navy, to deploy a permanent broad band seismic OBS linked by a submarine fiber optic cable to the Alboran island where a Navy satellite link and power are available. It was deployed between the 30th September and the 3rd October 2009 in 46 meters depth water about 1700 meters away from the island, thanks to the Navy collaboration.

In this presentation, some characteristic, problems and experiences are shown.