

MAPPING EXISTING OCEAN OBSERVING INFRASTRUCTURES AND CAPABILITIES

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The drivers for ocean observing range from climate and ocean services to understanding of ocean health and developing marine environmental policy. Hence, the value of ocean observing has been recognised at the highest international level (e.g. UN Agenda 2030, UN Decade of Ocean Science for Sustainable Development, and G7). A wide range of ocean observing capabilities currently exists in European ocean observing. OceanOPS provides an overview of the status of some of these capabilities, mainly the internationally coordinated sustained observing networks, of which Europe forms part. At the European level, data service providers such as EMODnet and CMEMS in situ TAC, among others, provide an overview of the available ocean observing data, including open access to harmonised and standardised datasets and data products, together with information of the data originator and observing platforms, in the metadata. Still, the limited connection across marine and maritime data collectors and users has led to a fragmented system. It is critical to develop a focal point to monitor the performance of European ocean observing and marine monitoring capability and assess existing gaps and requirements. This could be accomplished through collaboration and building on existing capability, e.g. OceanOPS, to serve European needs.

Task 1.1 of the European Ocean Observing System (EOOS) Implementation plan stresses the need for mapping existing ocean observing infrastructure and capabilities to ensure an inclusive approach and fit for purpose measurements for different stakeholders. Even though platforms measuring the physical parameters are relatively well mapped, e.g. by the EMODnet Physics, this is still lacking for chemical and biological parameters. Moreover, there is a need to map and document existing capabilities in an integrated and

systematic way, covering the existence of platforms and their potential ability to register different EOVs, including the frequency of measurements, information on parameters measured simultaneously and the data availability.

A staged approach will be taken to progress the EOOS Pilot Project 1.1.1. In this first stage, the key operators of ocean observing infrastructures (national and pan-European level) and networks (e.g. Marine Biological time-series stations, MARS; European Tracking Network, ETN) will be identified and mapped together with national marine monitoring programmes. Industries, international organisations (like Sir Alister Hardy Foundation for Ocean Science, SAFOS) and Regional Seas Conventions may be added. The aggregators of ocean data from these and other operators will be mapped in a follow-up stage, together with the scale of coordination, parameters measured, platform type, funding source, and data archival mechanism. This activity will build on OceanOPS and European aggregators of marine data, e.g. WISE-marine, CMEMS in situ TAC, EMODnet and SeaDataNet.

An initial review of the products currently provided by operators, aggregators and industry services will be addressed at a later stage to assess the fitness for purpose of the system and the associated products and services from a user perspective. EOOS mapping and engagement of the wide range of stakeholders in a EOOS is vital for this initiative's success. Stakeholders comprise the funders, implementers and users of EOOS alongside the international networks such as GOOS, GEO BON MBON, GEO Blue Planet, WMO, ICES, Regional Sea Conventions, and others, to ensure compatibility of EOOS at the regional and global scale.

Next steps:

- Assess the level of integration and funding sustainability of ocean observations and monitoring activities at a national level from information provided by members of the EOOS Operations Committee (GOOS National Focal Points).
- Using the new information on biological observing networks in Europe, provided by the GOOS BioEco panel, and previous information from the EuroGOOS analysis in 2016, work with the EOOS Operations Committee to refine and correct the information.
- Explore the possibility of a data aggregator hosting this information and, through machine-to-machine interaction, update and maintain. Discuss with WISE-Marine, EMOD-net, OBIS, and IOC Ocean Info Hub.
- Explore the feasibility of having a European OceanOPS that can provide information on the status of operating observing platforms and networks around Europe, including coastal assets.

Based on the feasibility study, plan and set a strategy to progress a European OceanOPS.