



“To devise ocean sensors and monitoring devices, globally available to all and not just to a privileged few.”



## What is the issue?

In order to inform decision making at all levels, from international economic and environmental policy down to small ocean-based businesses, such as fishing and tourism, scientists need access to more reliable and comprehensive ocean observation data.

The majority of global coastal areas belong to countries with low-to-medium GDP per capita, with most human marine activities taking place in this coastal zone.

However, access to **user-friendly, low cost and easily deployable instrumentation** is a limiting factor in coastal ocean observing.

This implies a need to rethink our ocean-going instrumentation, the majority of which is expensive to acquire, difficult to deploy and costly to operate.

## To address this issue, the OpenMODs project has two main goals:

(i) **conceive** an “easy-to-use” flexible and affordable oceanographic versatile platform (free-floating or moored) which is able to accommodate different sets of sensors, and

(ii) **prepare** an international realization programme with the early engagement of industrial partners through a series of workshops.

## The project has been developed according to the following principles:

- This is a humanitarian environmental project;
- Concepts and designs developed within the project will comply with the Open Science approach and could be later implemented with financial support from the private sector;
- When possible, a 'Do-it-yourself' philosophy ('IKEA' approach) will be adopted in assembling OpenMODs platforms;
- Low-cost technologies will be considered (e.g. “off the rack” cheap sensors for temperature, pH, light, pressure and conductivity).



*an example of floating instrument which could be used as starting model for an OpenMODs platform*

## What options are there for private sector involvement in OpenMODs?

- Join the discussion forum at: <https://www.facebook.com/groups/OpenMODsForum/>
- Attend the foresight workshop (early 2019)
- Donate time and expertise to contribute to the development of new/adaptation of existing technologies.

## What are the advantages of involvement for your business?

- Increase visibility (in particular among POGO members)
- Enter new and emerging markets,
- Reach wider public in education

## The way forward:

This project is intended as the **first step** toward a much more ambitious initiative.

OGS and AWI have strong oceanographic background both in ocean observations and marine technologies. Cooperating partners (e.g. UNESCO/ICTP) will further enlarge the institutional links to the relevant scientific community of developing countries.

## Who is leading the project?

**Dr Alessandro Crise, OGS**, is one the Italian representatives within G7 Future of the Seas and Oceans Working Group and leads the Action 4 focused on the development of regional observing capabilities including supporting the capacity building of developing countries, has been a member of the European Marine Board and EuroGOOS.

**Prof Karen Wiltshire, AWI**, in her capacity of Director of Biological Station Helgoland and Wadden Sea Station Sylt, contributes to the project with her first-hand experience on implementing and managing sustained observations (Helgoland Roads Time Series) in coastal areas, having built many observing instruments, Ferryboxes and Instrument networks.

**Dr Riccardo Gerin, OGS**, is a technology expert in managing and developing lagrangian equipment. He was involved, among others, in development of low-cost coastal drifters taking advantage of cheap transmission system (GSM, LoRa), and surface shear-measuring drifters.

## How is the project funded?

This exploratory phase is funded by **Partnership for Observation of the Global Oceans (POGO)**, an international consortium of institutions involved in oceanographic observations, scientific research, operational services, education and training. POGO has 38 member institutes from 20 different countries, and works closely with other international and regional programmes and organisations.



*test deployment of one drifter at sea*



*a picture taken in Senegal during the preparation phase of the deployment of a drifter (the orange spherical buoy)*

## For more information

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