

Press release for the launch of EMSODEV project

European marine research takes sea monitoring to a different level

European research institutes take a new step towards effective and coordinated sea monitoring which will help analyze the impact of pollution on marine waters, and to find the ways to cope with natural hazards more effectively.

September 22, 2015. Heraklion, Greece: The representatives of the thirteen European countries members of the research infrastructure consortium EMSO (European Multidisciplinary Seafloor and water-column Observatory) met in Crete to launch a three year program, EMSODEV (EMSODEvelopment), which will enable the full implementation and operation of EMSO. The program aims at the development of a module (EGIM EMSO Generic Instrument Module) which will allow all data from the consortium observatories to be comparable thus allowing ocean parameters more useful in addressing urgent challenges for society and for science such as climate change, ocean ecosystem disturbance and marine hazards.

EMSO is a large-scale European Research Infrastructure in the field of environmental sciences. It was founded on principles of European Strategy Forum on Research Infrastructures (ESFRI) and comprises a research infrastructure of seafloor observatories designated to long-term monitoring, mainly in real-time, of environmental processes related to the interaction between the geosphere, biosphere, and hydrosphere, including natural hazards. It is composed of eleven deep-seafloor observatories and four shallow water test sites deployed in specific sites around European waters, reaching from the Arctic to the Black Sea passing through the Mediterranean Sea, thus forming a widely distributed pan-European infrastructure. The countries partners of EMSO are: Italy, leader of the project, France, Germany, Ireland, Sweden, Greece, United Kingdom, Portugal, Turkey, Netherland and Romania.

EMSODEV will coordinate the beacons network along the European sea waters in order to obtain a flux of data based on same scientific algorithms.

This will allow the standardization of technical and IT infrastructures, interconnectivity of the partners, a common pool of data, the effort to provide a real-time output, as long as it is possible. These objectives involve a new infrastructure and software for storing and managing the data, a new and generally accepted

set of rules for a better efficiency of the research and a standardized scientific analysis. Also, they require an interdisciplinary approach of the geo-ecological systems of running and still waters.

In fact, the general objective of EMSODEV is to implement and make fully operational an EMSO Generic Instrument Module (EGIM). This module will ensure accurate, consistent, comparable, long-term measurements of ocean parameters in this region, which are crucial in coping with urgent societal and scientific challenges such as climate change, ocean ecosystem disturbance, and marine hazards. Continuous observation should allow the detection of unpredictable events such as earthquakes, tsunamis, dense water cascades, plankton blooms, water mass movements, and influence of eddies, which cannot be detected by infrequent, short-term ship expeditions. The EGIM will utilize a comprehensive set of sensors and devices that meet particular technology readiness thresholds to collect observations including temperature, pressure, salinity, dissolved oxygen, turbidity, chlorophyll fluorescence, currents, and passive acoustics. Relatively novel sensors will also be considered including those for pH, pCO₂, and nutrients. The partners EMSODEV will test, calibrate and validate EGIM module in shallow and deep waters, using the output to standardize the data management. As a collateral consequence, it will establish links with industry for technology transfer and future joint Research, Development and Innovation (RDI) activities, communicating and disseminating the results to targeted audiences: politicians, academics, specific industry, general public and possible future partners. As an ultimate goal, this system should share the data with other similar networks in the general effort to synchronize the international marine research, thus reducing or preventing the effects of natural and human disasters on seawater.

EMSO members have launched this project in Heraklion which aims to become in the Horizon of 2020 road one of the largest and most reliable programs of seawater monitoring in the world