

# Obsea, ten years of coastal ocean monitoring and test site observatory

Joaquín del Río\*, Marc Nogueras, Daniel Toma, Enoc Martínez, Ivan Masmitjà, Matias Carandell, Spartacus Gomariz, Joaquim Olive  
Universitat Politècnica de Catalunya (UPC), Spain,

info@emso-eu.org | www.emso.eu

## Abstract

The study of the effects of climate change on the marine environment requires the existence of sufficiently long time series of key parameters. The study of these series allows, to characterize the range of variability in each particular region and, secondly, to detect trends or changes that could be attributed to anthropogenic causes. For that reason, permanent observation systems are required. Obsea is a permanent seabed cabled observatory located in Costas del Garraf area (Barcelona), deployed in 2009, that has produced a 10 years dataset of physical parameters now openly available at open repositories like Pangaea [1][2]. During such period, Obsea has become part of EMSO (The European Multidisciplinary Seafloor

and water column Observatory) [3] as a test site where many marine instruments, technologies and data management protocols has been tested, included the EMSO-EGIM (EMSO Generic Instrument Module) and its data management system.

Obsea is also contributing to the JERICO-RI coastal community [4], where is also contributing as a coastal observatory producing data and offering the infrastructure as a test site. As example of service, during the FP7 FixO3 project, Obsea was used during 828 days from 16-02-2015 to 31-08-2017, 150 days during the test of EGIM within the EMSODev project from 1-12-2016 to 30-4-2017 and during H2020 JERICO-Next project was used 518 days from 17-10-2017 to 21-05-2019.

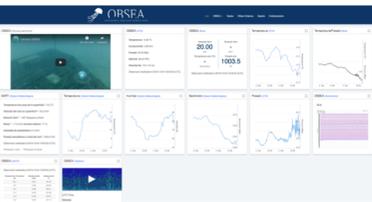
## References

- [1] J. del Río, "Obsea CTD 2009-2019," 2019. [Online]. Available: <https://doi.pangaea.de/10.1594/PANGAEA.902215>. [Accessed: 01-Jul-2019].
- [2] J. del Río, "Obsea Meteo 2010-2019," 2019. [Online]. Available: <https://doi.pangaea.de/10.1594/PANGAEA.903050>. [Accessed: 01-Jul-2019].
- [3] EMSO-Obsea, "EMSO-Obsea," 2019. [Online]. Available: <http://emso.eu/observatories-node/obsea/>. [Accessed: 01-Jul-2019].
- [4] JERICO-RI, "JERICO-RI," 2019. [Online]. Available: <http://www.jerico-ri.eu/infrastructure-type/cabled-observatories/>. [Accessed: 01-Jul-2019].
- [5] D. Toma, "Data collected during the deployment of the EMSO Generic Instrument Module (EGIM) at the OBSEA cabled observatory " 2017. [Online]. Available: <https://doi.pangaea.de/10.1594/PANGAEA.883072> Accessed: 01-Jul-2019]



## Data availability

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling Frequency	Frequency of data recovery
Sablot SBET1phiV2	Water Temperature, Conductivity, Depth, Sound velocity, Salinity	-20 m	20 s	Real-time
Sablot SBET3TMP	Water Temperature, Conductivity, Depth, Sound velocity, Salinity	-20m	20 s	Real-time
Underwater camera OPT-06	Images	-20m	10 Frames	Real-time
Thalysone Storage Navis	Sound	-20m	10 to 700 kHz	Real-time
NORTEK AWAC	Water Current, Waves height & direction, turbidity, Chl(a)	-20m	10 minutes	Real-time
Navometrics Broadband oceanometer T8100	Tachitic movement	-20m	Up to 175 Hz	Real-time
120P	Air temperature, pressure, wind speed and direction	5 m	30s	Real-time
Akros 1500V	Images	5m	12 Frames per second	Real-time
Melodic M4200	Air temperature, humidity, pressure, wind speed and direction, sea	14m	10 minutes	Real-time
Pro2 Weather Station	CO2 Concentration in air	14 m	30 s	Real-time



## Test of antifouling techniques: Antifouling sticks and chlorination procedures tested for different sensors.



NORTEK



## Biology assessment: Use of acoustic tag tracking, smart video imaging, underwater and surface robots.



<https://resbio.obsea.es/>



Species List

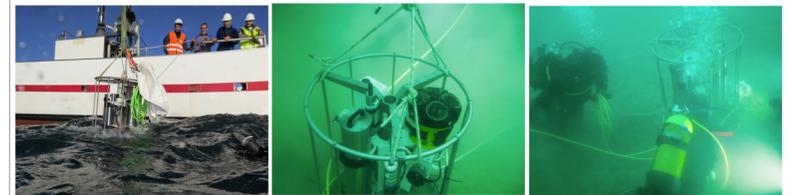
Cordà, Agazzi et al. 2012. Mar. Biol. 159: 2809-2017.



## Fixed point observatories EMSO Generic Instrumentation Module (EGIM)

### Obsea facilities

Time series acquired in real-time from the EGIM at the Helgoland SWE viewer pulling data on O&M format and sensor metadata from SensorML, in a cable-mode shallow water deployment in Obsea.



EMSO EGIM under test at Obsea: data available: D. Toma, "Data collected during the deployment of the EMSO Generic Instrument Module (EGIM) at the OBSEA cabled observatory " 2017. [Online]. Available: <https://doi.pangaea.de/10.1594/PANGAEA.883072> [Accessed: 01-Jul-2019]

## EMSO COUNTRIES AND INSTITUTIONS

**FRANCE**  
Ifremer - L'Institut Français de Recherche pour l'Exploitation de la Mer

**IRELAND**  
MI - Marine Institute

**ROMANIA**  
GeoEcoMar - National Research and Development Institute for Marine Geology and Geoecology

**CNRS** - Le Centre National de la Recherche Scientifique

**ITALY**  
INGV - Istituto Nazionale di Geofisica e Vulcanologia

**SPAIN**  
PLOCAN - Plataforma Oceánica de Canarias

**GREECE**  
Hellenic Centre for Marine Research

**PORTUGAL**  
FCT - Fundação para a Ciência e a Tecnologia

**UK**  
NOC - National Oceanography Centre



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