The EGIM, EMSO generic instrument module, step towards standardization


EMSO ERIC, the “European Multidisciplinary Seafloor and water column Observatory”, has developed the EGIM, EMSO Generic Instrument Module, in the frame of the H2020 project “EMSO-Dev”. The module aims at consistently and continuously measuring seven Essential Ocean Variables for the science areas at the various regional facilities pertaining to EMSO, placed at key sites around the European seas.

The EGIM core variables include temperature, conductivity, pressure, dissolved O2, turbidity, ocean currents and ocean noise. On top of those parameters, the EGIM can host additional sensors: pht, partial CO2 pressure, partial CH4 pressure, salinity, photographs/video image, seismics. The EGIM provides the following services to its sensors: power distribution, time stamping, data storage and backup, protection against the environment and fouling, as well as bi-directional communication with the external world.

The EGIM measures essential variables consistently

The EGIM aims to set up a number of ocean locations where the same set of core variables are measured homogeneously, to ensure the best measurement quality and long-term reliability in line with the Best Practices Handbook (FHOI) and ESONET-EMSO Label using:

- identical hardware,
- the same sensor references,
- the same qualification methods,
- the same calibration methods,
- the same maintenance procedures,
- the same data format and access.

ACKNOWLEDGMENT

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All engineers of EmsoDev for the design, development, testing of the EGIM Prototype.

The EGIM references

2016-17: Four-month shallow water test period. The EGIM was installed on OBSA offshore Barcelona, http://www.pangaea.de/10.1594/PANGAEA.849527

2017-18: Deep sea deployment in autonomous mode on EMSO-Acores, on the mid-Atlantic ridge, at a 1700 m water depth, http://www.pangaea.de/10.1594/PANGAEA.849528

2019: Deployment of the two EGIM replicas, one connected to the cable which runs from Catania on EUMO Western Tornian Regional Facility (East of Sicily), the other in the Atlantic Ocean near the Canary Islands, under different configurations including open-ocean mooring on ESTOC site.

The EGIM is a crucial step towards standardization and interoperability

The EGIM is multi-purpose and matches all the EMSO site and discipline specific requirements. Using the EGIM as the sole reference for all Regional Facilities enhances standardization, increases global reliability and reduces costs and discrepancy across EMSO. The service-provision capacity of the Regional Facilities will be substantially increased, enabling EMSO Observatories to serve not only the science community but also governmental organizations, industries, other stakeholders, and similar infrastructures.

The EGIM on platforms

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