NOSTROMO: New Operative's System, Tools, and Resources for Ocean Monitoring and Observations. An integrated solution to manage and monitor the continuity and quality of service for CMEMS In Situ TAC - IBI region

Alejandro Gallardo (1,2), Fernando Manzano (1,2), and Marta de Alfonso (1)

(1) Puertos del Estado, Madrid, Spain (agallardo_externo@puertos.es), (2) Nologin Consulting, Zaragoza, Spain (alejandro.gallardo@nologin.es)

Copernicus, previously known as GMES (Global Monitoring for Environment and Security), is the European Programme for the establishment of a European capacity for Earth Observation and Monitoring. Copernicus Marine Environment Monitoring Service (CMEMS) aims to provide a sustainable service for Ocean Monitoring and Forecasting validated and commissioned by users. CMEMS is working on an operational mode through a contract with services engagement (results are regular data provision).

Within CMEMS, the In Situ Thematic Assembly Centre (INSTAC) distributed service integrates in situ data from different sources for operational oceanography needs. CMEMS INSTAC is collecting and carrying out quality control in a homogeneous way on data from providers outside Copernicus (national and international networks), to fit the needs of internal and external users.

CMEMS INSTAC has been organized in 7 regional production units (PUs) to rely on the EuroGOOS ROOSes. Each PU aggregates data and metadata coming from providers. One of these regions is the European south-west shelf or IBI (Iberia – Biscay – Ireland) region.

The IBI region, managed by Puertos del Estado, has recently developed a new system, an integrated solution to control and monitor all the steps of the operative: gathering data, checking data quality, generating NetCDF files, synchronizing with other PUs and synchronizing with the CMEMS central dissemination unit (DU).

The accuracy of the data received is checked on various levels. Quality control procedures are applied for the validity of the data and correctness tests for the metadata of each NetCDF file. The quality control procedures for the data includes different routines for NRT and REP products. Additionally, this new system includes new features to visualize data series. It is possible to plot data series of our database (to extend the quality checking), our local NetCDFs (to check the generation process) and the NetCDF files uploaded to the central DU also (to check problems with the synchronization).

All the operative is automatized through cron tasks. However, all the procedures are parameterized to allow manually relaunch of a specific target if needed. It also includes an alert system to warn about exceptions or problems in the execution of procedures.

The system is based on two databases: a PostgreSQL containing stations and parameters metadata and data series, and a MongoDB (no-SQL database) to store a collection of exceptions and support the internal notifications management. The low-level procedures are developed in PHP for historical reasons. The new system is developed in Python using Django framework.

The proposed poster will show an overview of the system using the website's main menu: Nostromo spaceship map. Each room is a link to a specialized component.