

## MyOcean In-Situ Thematic Center: A service for operational Oceanography

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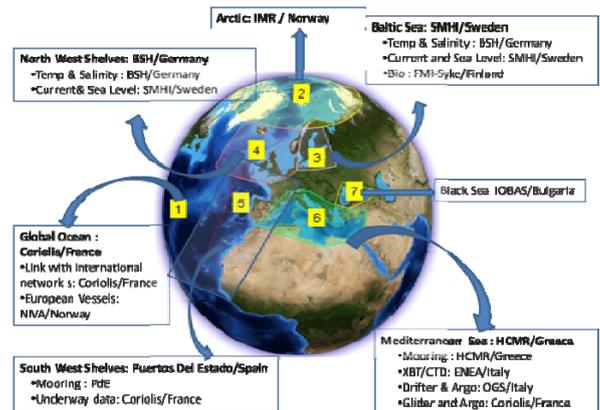
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MyOcean aims at providing a sustainable service for Ocean Monitoring and Forecasting validated and commissioned by users. The MyOcean information includes observations, analysis, reanalysis and forecasts describing the physical state of the ocean, its variability and the ecosystem response through primary biogeochemical parameters. It also contributes to research on climate by providing long time-series of re-analysed parameters. It started in 2009 for 3 years and continued for 2.5 additional years through the MyOcean II project that started in April 2012.

Within these projects, the in-situ Thematic Assembly Centre of MyOcean is a distributed service integrating in situ data from different sources for operational oceanography needs. The MyOcean in-situ TAC is collecting and carrying out quality control in a homogeneous manner on data from outside MyOcean data providers (national and international networks), to fit the needs of internal and external users. It provides access to integrated datasets of core parameters to characterise ocean state and ocean variability, by this contributing to initialization, forcing, assimilation and validation of ocean numerical models which are used for forecasting, analyses and re-analysis of ocean conditions. Since the primary objective of MyOcean and MyOcean2 is to forecast ocean state, the initial focus was on observations from automatic observatories at sea (e.g. floats, buoys, gliders, ferrybox, drifters, SOOP) which are transmitted in real-time to the shore at global (V0 2009) and regional (V1 mid 2011) scales both for physical and biogeochemical parameters. The second objective is to set up a system for re-analysis purposes that requires products integrated over the past 30 years for temperature and salinity parameters. This is the main challenge of MyOcean II for the European seas. The prototype version of the regional products has been set up for April 2013 (MyOcean V3) and will be operational in April 2014 (V4).

Since the elaboration of the proposal, the MyOcean in-situ TAC has been designed to rely on the EuroGOOS ROOSes (Figure 1) with regional coordination endorsed by partners from the ROOSes and on a global component based on Coriolis data centre that acts as a GDAC (Global Data Centre) for some of the JCOMM networks.



**Figure 1: The in-situ TAC global and regional components: Institute responsibilities**

The MyOcean in-situ TAC is focused on a limited number of parameters (temperature, salinity, current, sea level, chlorophyll, oxygen) but each ROOS has extended the parameter list to other parameters (wind, waves, nutrients,...) to fulfil the needs of the ROOSes users.

### Which service in Near Real time

The In Situ Thematic Centre integrates observations from Regional EuroGOOS consortium (Arctic-ROOS, BOOS, NOOS, IBI-ROOS, MONGOOS) and Black Sea GOOS, JCOMM global systems( Argo, GOSUD, OceanSITES, GTSP, DBCP) and from the Global telecommunication system (GTS) used by the Met Offices. The accuracy of the in situ observation depends of the platforms and sensors that have been used to acquire them. Presently in near real –time about 3000 platforms for the global, between less than 10 for the Black Sea and 450 for the Iberian-Biscay-Irish seas are distributed every day on the In situ TAC portals.

The service was strengthened and monitoring tools were set up to survey the connections with the national data providers, the continuity of the services, the delays between acquisition and delivery, the quality of the product delivered. Based on feedback from users a continuous service improvement loop is set up that lead to the connection to new data streams, improvement of the Near Real Time Quality Control procedures, reduction of the delays and improvement of the product assessment through quarterly validation of the products.

### Reprocessed In Situ Products for reanalysis

During the decade 2000–2010, the French project Coriolis, whose main aim is to supply in-situ data in real time to French and European operational oceanography programs, started to distribute a quality-controlled dataset named CORA aggregating data from Coriolis data base, JCOMM networks, WOD09 (Levitus) and ICES CTD for 1990-2011(Cabanes & al 2013).

Based on the Global product experience and in partnership with the SeaDataNet2 EU project, similar products for the European seas are under development. A first version was delivered in April 2013 and a fully validated one will be available for MyOcean-V4 in April 2014.(Figure 2.).

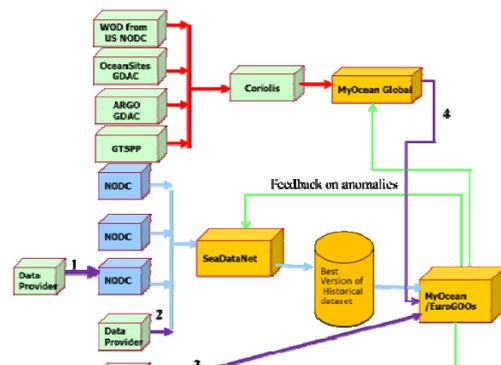


Figure 2: External and internal interfaces for Reprocessed in situ product elaboration

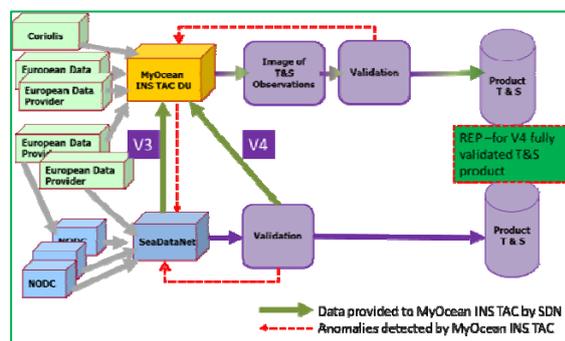


Figure 3 : A share validation process between MyOcean2 et SeaDataNet2

The regional products are built in two steps: first, for MyOcean V3, the focus is in the aggregation of the data from the ROOS providers and the SeaDataNet National Data Centres, removing duplicates and converting all data in the same format with the same QC flags. Whenever it's possible, all the parameters measured by a platform are aggregated even if the scientific validation will only be performed of the Temperature and Salinity parameters. The second step consists in a scientific validation to assess the consistency of the product at basin scale.

### Reference

Cabanes Cecile & al (2013).The CORA dataset: validation and diagnostics of in-situ ocean temperature and salinity measurements. Ocean Science, 9(spec.issue), 1-18. Publisher's official version : <http://dx.doi.org/10.5194/os-9-1-2013>  
 Coriolis-Mercator newsletter (April 2013): <http://www.coriolis.eu.org/All-news/Newsletters/Coriolis-9>