Complying with Data Interoperability Standards in MyCoast Project

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MyCOAST.

In the last decade, major efforts have been devoted to develop large-scale networks and e-infrastructures aiming to share and distribute oceanographic data in the European area using state-of-the-art technologies and standard formats. At the same time several regional coastal ocean observatories have been implemented along the North Atlantic Coast with the aim of complementing existing networks and to cover near-shore areas with higher spatial resolution observations and forecasts, e.g. RAIA, LOREA, the Western Channel Observatory, SmartBay, HOSEA and the upcoming OCASO. The collection and dissemination of data gathering to satisfy local needs was the main objective in the implementation of these observatories and very weak interactions between these different networks and specific e-platforms have taken place. A rationalization and capitalization of the initial efforts through networking and upgrading activities is needed so that a seamless access to the existing oceanographic data, products and services is provided in a homogeneous and standardized way along the Atlantic Coast. The EU Project MyCOAST will integrate these observatories across the entire Atlantic Area and will serve as a link between the large-scale initiatives and the end users. This transnational consistent approach will generate transferable products and services and will provide a vital support to a wide array of applications, e.g. it is a key requirement in the implementation of MSFD.

MyCoast aims to build a coordinated Atlantic Coastal Operational Observatory in the Atlantic area joining capabilities from all the 5 countries and from existing cross-border cooperation activities, all targeted towards the improvement of coastal monitoring and forecasting tools to support threat and emergency response. The technical networking and specific synergies will strengthen the use and the dissemination of downstream applications of the Copernicus Marine and Environmental Monitoring Service (CMEMS) in order to address the common challenge of resilience of the coastal to risk. The proposed data management tools will promote information sharing and interoperability between coastal observatories and the common European information sharing systems.

Complying wiht data interoperability standards

The effective implementation of a transnational coastal system depends on the capability of multiple systems to work with the same sets of data and metadata in an interoperable fashion. Metadata records associated with one resource should be accessed, accurately interpreted and subsequently used by a system.

MyCOAST aims to homogenize and develop the interconnection of the platforms of coastal data with the existing networks (CMEMS, SeaDataNet); adopting standard conventions (OGC, ISO); fulfilling the INSPIRE Directive; increasing the impact of the transferable.

In order to achieve this goal, the sequence of the tasks will be:

- Explore the state of the art and the level of homogenization among coastal observatories and with European Systems (CMEMS, SeaDataNet). MyCOAST will focus on exploring the state of the art of the standardization of data sets in the different coastal observatories to know the level of harmonization thereof: used standards, ingestion and alignment to international networks, as CMEMS, level of maturity of standards and services. The aim is to find the starting point for choosing which datasets from the coastal observatories can be homogenized in the next actions, as well as which standards and protocols are most suitable
- Promote a low-level standardization of chosen datasets for all providers gathering the end users necessities : Adoption of a low level of interoperability between different coastal observatories, which is achieved when a tool is able to address datasets using standards but there are discrepancies about internal structures of datasets, files and folders. It will be necessary totake inventory of the data sets to be adapted, and they will be transformed adopting international standards as THREDDS, NetCDF and CF conventions for models or OGC-INSPIRE standards to visualize, download or catalogue the data set
- Promote a high-level standardization of several datasets and adopt methods to use them : This task will focus on trying to obtain similar structures of datasets of similar measurements or platforms regardless of the coastal observatory of origin. To achieve this, it will be necessary to agree on which variables have to be mandatory, which vocabularies have to be used, etc. In this way, any final tool that uses the data of one of the observatories can use the data of any other, since the interoperability between observatories will be guaranteed.
- Share documents, software and tools in order to use and adopt the defined standards In order to help coastal observatories to make them interoperable between them, a series of guides, manuals and scripts will be developed in order to facilitate the adaptation of their data to ones with a common structure as well as software libraries to be use by the developed tools.