



SeaDataCloud: a pan-European infrastructure to improve the transition from data to knowledge

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Data can no longer remain such but must necessarily become knowledge and help to understand the world around us supporting decision-making processes. To do this technology is offering its contribution to process data and transform them in knowledge.

The SeaDataCloud is an EU H2020 programme, aims at considerably advancing SeaDataNet infrastructure and increasing their usage, adopting cloud and High Performance Computing technology for better performance. SeaDataNet connects together more than 100 National Oceanographic Data Centres (NODC's) from 34 coastal states in Europe. At the moment SeaDataNet gives access to more than 2.0 million data sets for physical oceanography, chemistry, geology, geophysics, bathymetry and biology.

The fundamental components of the infrastructure are:

-data services: data from ocean observation is available by means of a unique point of access. The architecture is based on a semi-distributed system with the central portal that provides the indexing services based on xml files, called CDI, complaint with ISO 19115 - SO 19139 standard. The data standard formats are ODV (Ocean Data View) and NetCDF (CF).

-metadata services: SeaDataNet portal provides an overview of the Marine observing systems, Marine organizations in Europe and their involvement in scientific cruises, data collection and marine projects.

-software tools: the project updates and makes software tools available allowing the data providers to perform their core functions like: data and metadata formatting, transformation, analysis and finally their publishing.

The marine data are relevant for many uses: for scientific research to gain knowledge and insight, for monitoring and assessment (water quality, climate status, stock assessment), for coastal zone management, for modeling (including hind-cast, now-cast, forecast), for supporting operations and activities at sea (shipping, offshore industry, dredging industry, ..) and for the implementation of international Directives, such as directives for water (WFD), marine strategy (MSFD) and coastal zone management.

Some workshops are planned and organized to help marine researchers, industry, policy makers, major European and international networks in marine data observation and management for using the SeaDataNet infrastructure. The goal is to explain practically the different components of the infrastructure: data services (discovery interface), metadata services and software tools for data analysis (Ocean Data View – ODV) and data interpolation software (Data Interpolating Variational Analysis – DIVA).

This work provides an overview of the SeaDataCloud services with the aim of helping all the possible stakeholders. The objective is to facilitate access to marine and oceanographic data collected from research, monitoring and survey programs by more than a thousand data originators and make more effective use of them to develop new products and services.