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SCHeMA web-based observation data information system

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It is well recognized that the need of sharing ocean data among non-specialized users is constantly increasing. Initiatives that are built upon international standards will contribute to simplify data processing and dissemination, improve user-accessibility also through web browsers, facilitate the sharing of information across the integrated network of ocean observing systems; and ultimately provide a better understanding of the ocean functioning.
The SCHeMA (Integrated in Situ Chemical MApping probe) Project is developing an open and modular sensing solution for autonomous in situ high resolution mapping of a wide range of anthropogenic and natural chemical compounds coupled to master bio-physicochemical parameters (www.schema-ocean.eu). The SCHeMA web system is designed to ensure user-friendly data discovery, access and download as well as interoperability with other projects through a dedicated interface that implements the Global Earth Observation System of Systems – Common Infrastructure (GCI) recommendations and the international Open Geospatial Consortium – Sensor Web Enablement (OGC-SWE) standards. This approach will insure data accessibility in compliance with major European Directives and recommendations.
Being modular, the system allows the plug-and-play of commercially available probes as well as new sensor probess under development within the project. The access to the network of monitoring probes is provided via a web-based system interface that, being implemented as a SOS (Sensor Observation Service), is providing standard interoperability and access tosensor observations systems through O&M standard – as well as sensor descriptions – encoded in Sensor Model Language (SensorML).
The use of common vocabularies in all metadatabases and data formats, to describe data in an already harmonized and common standard is a prerequisite towards consistency and interoperability. Therefore, the SCHeMA SOS has adopted the SeaVox common vocabularies populated by SeaDataNet network of National Oceanographic Data Centres.
The SCHeMA presentation layer, a fundamental part of the software architecture, offers to the user a bidirectional interaction with the integrated system allowing to manage and configure the sensor probes; view the stored observations and metadata, and handle alarms.
The overall structure of the web portal developed within the SCHeMA initiative (Sensor Configuration, development of Core Profile interface for data access via OGC standard, external services such as web services, WMS, WFS; and Data download and query manager) will be presented and illustrated with examples of ongoing tests in costal and open sea.