

EGU European Geosciences

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Nowadays, there is a general awareness regarding the potential value of ocean data sharing and the benefits that an e-infrastructure allowing access to harmonised multi-disciplinary ocean data can bring to the society. A huge amount of data is produced every day by ocean observations all around Europe. The ability to leverage this valuable potential depends on the capacity of the already established European (EU) ocean data infrastructures to support new needs in the field of ocean data management and to adopt the emerging technologies.

SeaDataNet (SDN) is a digital ocean and marine data infrastructure to support ocean research and societal needs

One of the most relevant e-infrastructures in Europe managing marine and ocean data is SeaDataNet (SDN) that started in early 2000 and evolved over the years by means of different European funded projects. The infrastructure provides online unified access to many harmonised marine and ocean datasets, alongside data products and metadata services. Its main purpose is to provide easy access to heterogeneous marine datasets which are managed by the data centres, geographically distributed in all European seas. To integrate the data from observations into a coherent and standard managing system has been a challenge over the years.

SeaDataNet challenges

New technologies are dynamic and in the past few years have changed significantly with a growing impact in data and applications management.

For this reason SeaDataNet is upgrading its Information Technology (IT) architecture thanks to the SeaDataCloud project, funded by the European Commission. It has the aim to renew the electronic infrastructure, allowing it to offer new services, based on the cloud and High Performance Computing (HPC) technologies. The partnership with EUDAT, a consortium of high performance centres, has allowed it to improve the shareability and the availability of the data.

SeaDataNet achievements



SERVICES IMPROVEMENTS

Enhanced graphical user interface (GUI) Faster downloads Improved reliability of the system More agile data ingestion system for data providers Improved machine to machine interfaces Expansion with new data types: Gliders, HF-radar, Flow cytometry

NEW SERVICES

DOI Digital Object Identifier minting service assigns a unique and persistent identification to ocean data for purposes of data citation and reproducibility of research results.

SEANOE Marine data publications

CATALOG Search Q Results 1 to 17 on 17 : 20 by page Sort by : Popularity NORTH ATLANTIC OCEAN - TEMPERATURE AND BLACK SEA - TEMPERATURE AND SALINITY SALINITY OBSERVATION COLLECTION V1.1 OBSERVATION COLLECTION V2 e Black Sea historical dataset include aDataNet Temperature and Salinit storical data collection, including all open access temperature and salinity evised quality flags after quality n situ data from the Black Sea and Sea introl with ODV.For data access of Azov for period 1868-2014. The data were retrieved from the SeaDataNet please register at http://www.marineid.orgThe dataset format is ODV binary infrastructure in the mid of 2015. Data collections. You can read, analyse and quality has been analysed and checked. Source: Seadatanet Source: Seadatanet 9o- Qo- ≜ **Reset filters** MEDITERRANEAN SEA - TEMPERATURE AND MEDITERRANEAN SEA - TEMPERATURE AND SALINITY CLIMATOLOGY V1.1 SALINITY OBSERVATION COLLECTION V1.1 editerranean Sea Climatolog aDataNet Temperature and Salinity omputed from the SeaDataNet V1.1 istorical data collection contains all appregated dataset. The version used open access temperature and salinity in for the DIVA software is the 4.6.9. The situ data retrieved from SeaDataNet period covers 1900-2013. For data infrastructure at the end of 2013. The data span between -9.25 and 37 degrees access please register at http://www.marine-id.org of longitude, thus including an Atlantic . Downloadable urce: Seadatane Source: Seadatanet °r- Qr- ≜ -9₀+ Q+ ± aggregated datasets and climatologies of T/S

Publish marine dataset

SeaDataCloud

MySeaDataNet service provides information to end users about order status and history and a tool to save and share searches.



Data ingestion service is a tool accessible in the user space of data centres to deliver metadata in the central repository. A complete picture of the received orders divided into standing and approved is available in online reports, it also includes names, e-mail addresses and affiliations of the end-users that have ordered data.



PROTOTYPES

→ a single access for a wide range of data of different types

The opportunity of data re-use

Over the years SDN has defined de-facto standards for data, metadata and vocabularies currently largely used, collaborating with European and international experts within the framework of IOC-IODE, ICES, adapting ISO and OGC standards, and achieving INSPIRE compliance for some metadata services directory. A system for the detection of errors is in use checking for possible duplicates, global quality check of data value and results of checks is reported back to data centres for amendments.



SeaDataNet portal



European data sources data centres $\leftarrow \approx 650$ originators

A VRE (Virtual Research Environment) is available for partners to test and give feedback, it provides different tools for oceanographers with the aim of using the computational capacity and the storage of servers in the cloud. WebODV, the on line version of ODV software, for data analysis, allows to aggregate, extract, manage and qualify large dataset. DIVAnd, an improved version of DIVA (Data-Interpolating Variational Analysis) which is a software designed to perform spatial interpolation of oceanographic observations, has been implemented in the cloud. Furthermore, the VRE offers advanced visualisation services to gain more knowledge. It allows to deal in an efficient way problems involving multidimensional matrices for the creation of climatology and other gridded products.

Sensor Web Enablement (SWE) demonstrator is for publishing data using Sensor Web standard, it makes possible to share real-time sensor data streams.

Towards FAIRness in data sharing some activities are ongoing to improve the data, accessibility, interoperability and reuse of the available data.



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