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SeaDataCloud



Horizon 2020

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SEA DATACLOUD

is further enhancing

SEA DATANET

the Pan-European infrastructure
for ocean and marine data management

Knowledge is the basis for recognising situations that require decisions to be made. A huge amount of high quality marine data provides a basis for estimating the likelihood of occurrence of various kinds of problems but also to make relevant decisions about potential uses of the ocean such as renewable energy development. Thus, it is important to collect and make available high quality and interoperable ocean and marine observations, in both at local and at global scale, belonging to several decades that can indicate how ocean conditions have changed over the years.

**SEADATANET (SDN) IS
A DIGITAL OCEAN AND MARINE
DATA INFRASTRUCTURE TO SUPPORT
OCEAN RESEARCH AND SOCIETAL
NEEDS**

The infrastructure provides online unified access to many harmonised marine and ocean datasets, alongside data products and metadata services. Its purpose is to provide easy access to distributed nodes of heterogeneous marine data, which are managed by the data providers in their data centres, geographically distributed in most of the coastal countries facing European seas. Data centres maintain the ownership of their data and can determine if their data is freely available for users or if arrangements are needed, nevertheless by 85% of data is freely available under the SDN licence.

SDN started in 2006 and has been improved over the years, the task team identified technical challenges and their solutions have produced de facto standards for data and metadata in the oceanographic field as well as the adoption of agreed vocabularies. Since the beginning, challenges included working with major oceanographic research institutions and with academia, highly skilled users of the data, in order to produce an infrastructure that fits for end-users needs. Different EU projects sustained the infrastructure giving the resources for its implementation. The integration of data from observations into a coherent and standard managing system has been the challenge over the years.

THE SDN PORTAL CONSTITUTES A SINGLE POINT OF ACCESS FOR MARINE DATA

The idea is to avoid the inefficiencies deriving from the use of different portals, in addition to the time needed to transform the data into a common format. In one place you can find data, data products, tools used by professionals to manipulate, view and analyze data, downloadable free of charge, as well as an overview of marine organizations, research and monitoring activities related to the sea.

SDN serves the ocean and marine community as well as government agencies, industry, researchers, stakeholders, and the general public, allowing to preserve over a long period, visualize and analyze ocean data. SDN provides access to extremely heterogeneous marine and ocean data in an effective and easy way.

SDN developed de-facto standard for data and metadata, common vocabularies, standard operating procedures for data quality that have been adopted and generalized in similar initiatives in Europe and beyond, providing guidance to facilitate widespread adoption of an effective data sharing and interoperability solutions. The technical challenges are common across similar ocean data infrastructures, SDN collaborated in the framework of ODIP I/II projects with organisations in the U.S.A., Canada and Australia to give common solutions. To reuse data requires developing sufficient understanding of the data to use it for purposes different from which it was collected and in a way scientifically appropriate. The vocabularies as well as rich metadata and the possibility to keep contacts with the data producers foster data re-use.

FURTHER ADVANCEMENTS

Even if the infrastructure is nowadays mature, standards are always evolving. SeaDataCloud gives the opportunity for SeaDataNet to stay up-to-date, maintain and further expand the infrastructure with new kind of data, comprising HFR data and real time sensor data. SeaDataCloud aims at considerably advancing SeaDataNet services and increasing their usage, adopting cloud and HPC technology for better performance. Thanks to the new partnership with a consortium of High Performance Computing (HPC) EUDAT SeaDataNet is going to provide a data cloud environment, with new facilities, enabling data and computing services which will advance the integration, quality and availability of data for the wider user community. Hundreds of researchers studying various aspects of marine sciences will be supported by a shared Virtual Research Environment, that helps research collaboration and makes datasets, tools, and services on the cloud.

As END USER:

- EXPLORE DATA AND SERVICES
- VISUALISE

- DISCOVER

- REGISTER

- DOWNLOAD

- ATTEND WORKSHOPS

As COMMUNITY MEMBER:

- ATTEND TRAININGS

- SHARE AND PRESERVE DATA FOR LONG TERM

CONTACT:

E-mail: sdn.userdesk@seadatanet.org

Web portal: <https://www.seadatanet.org>

UNLOCK YOUR DATA AND GET YOUR DOI FREE OF CHARGE

Long term preservation of marine data collection and Digital
Object Identifier (DOI) minting service

The impact of data sharing could be very important, on a global scale, because a large amount of data is required in order to undertake an adequate scientific analysis. Data itself has become increasingly important in all fields of scientific research. It would be appropriate and right to acknowledge the work done to collect interoperable and quality data. One way of giving credit to datasets which support scientific outcomes is data citation. Data citation should complete publications, encourage producers to provide their data and protect intellectual property rights. The long term preservation of marine collection is supported by Digital Object Identifier attribution.

SeaDataNet provides DOI attribution and metadata management services by using the SEANOE (SEA scientific Open data Edition) system to facilitate scientists to publish their research data in the field of marine sciences as citable resources. The DOI minting service is freely available to everyone interested in publishing ocean data with a new service called *Publish your data* accessible from the SeaDataNet website.

Each data set published by SEANOE has a DOI. Your data may well be cited in scientific articles in a reliable and sustainable way. Data is necessarily published in open access in SEANOE. However, the data originators can fix by themselves the conditions of use of their data by selecting one of the seven Creative Commons licenses. Note that it is possible to inactivate access to data files for a maximum period of two years, for example to restrict access to data of a publication under scientific review.

During the embargo period, the DOI is active and the description page of data (the DOI Landing page) is available freely online.

The first requirement for data sharing is to publish online data in an interoperable and standard way. It is recommended to choose perennial and non-owner formats (e.g. CSV vs Excel) for the data files. SEANOE can recommend and help data originators to choose adequate data file formats. In SEANOE a data deposit is definitive. Data published in SEANOE cannot be deleted once published.

In case of errors in the data they can however be updated. Once published, SEANOE will

survey the dataset citation in articles and will register these citations in the dataset record.

Download statistics are reported to authors once a year.