

From SeaDataNet to SeaDataCloud: historical data collections, climatologies and new data products

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Outline

- Introduction
- SeaDataNet2 outcome
- SeaDataNet2 products
- Products for the Mediterranean Sea
- SeaDataCloud Innovation
- SeaDataCloud products and workplan
- Conclusions



SeaDataCloud (2016-2020)

Work Package dedicated to data products





SeaDataCloud (2016-2020)

Work Package dedicated to data products \rightarrow objectives:

- Improve the quality of the overall infrastructure content
- Create the best data products (aggregated dataset and climatologies) to serve the many user groups (accademia, op. ocenography, climate, institutional)
- Integration of external datasets
- Generate new data products
- Increase user uptake of products



SDN2 project implemented and continuously refined a **Quality Control Strategy (QCS)** aiming at improving the quality of the database content and creating the best data products



Iterative approach to facilitate the **upgrade** of the database and **versioning** of data products through:

- the release of new data collections at the end of each QCS loop
- the generation of derived climatological products after a certain time lag dedicated to data processing



SeaDataNet2 Data Products



PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

PARTNERS 🔍 🛄 🎆

USERS 📊 🕜 Q - 🔽

ABOUT US METADATA DATA ACCESS STANDARDS SOFTWARE PRODUCTS EVENTS PUBLICATIONS

SERVICES

FEEDBACK

ACCESS PRODUCTS

Download the SeaDataNet aggregated datasets : ODV collections of all SeaDataNet measurements of temperature and salinity by sea basins, or the SeaDataNet climatologies : regional gridded field products based on the aggregated datasets



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SeaDataNet2 Data Products





Products Catalogue





Products Catalogue

MEDITERRANEAN SEA - TEMPERATURE AND SALINITY OBSERVATION COLLECTION V2



SeaDataNet Temperature and Salinity historical data collection for the Mediterranean Sea contains all open access temperature and salinity in situ data retrieved from SeaDataNet infrastructure at the end of 2014. The data span between -9.25 and 37

Source: Seadatanet

Download

Viewing tools **Ocean Browser** and **Oceanotron**

Metadata record (DOI)



V1.1 climatologies are based on the V1.1 historical data collection of all available temperature and salinity in situ profiles spanning the time period 1900-2013









1/8° on 33 IODE standard depth









Temperature Jan at 10m 45⁰N 42°N 39⁰N 36⁰N 33°N 30⁰N 00 8°E 16[°]E 24[°]E 32°E 9 10 11 12 13 14 15 16 17 18 19







Ocean Browser 30% error masking \rightarrow DATA GAPS



February

October





SDN V1.1 TEMPERATURE 24 5 22 10 20 15 18 16 20 14

Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec



Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec

CONSISTENCY ANALYSIS between SDN_V1.1 and WOA13V2









The **ingestion of new data types** (HF radar, glider data) and the **integration of external data sets** are fundamental actions for the creation of appropriate observational data products as demanded by the user community



sdn-userdesk@seadatanet.org - www.seadatanet.org

SDC Products Releases







SeaDataCloud Climatologies

Goal \rightarrow to feed operational oceanography, climate, ecosystem and academic communities together with institutional stakeholders providing multiple products at different resolutions and spanning different time periods.

- T and S monthly and seasonal climatologies with increased horizontal and vertical resolution (WOA standard depth) covering the time period 1955-2017
- Integration of SeaDataCloud data collections with external data sets to increase data coverage (CMEMS In situ TAC, WOD, ICES)
- Analysis of space/time data distribution, consistency and long term variability to compute climatologies on a decadal basis (sliding decades when possible)
- Product validation through the consistency analysis of climatologies with WOA and available CMEMS products like climatologies computed by satellite reprocessed data sets and reanalysis products



New Data Products

New types of products will be explored by the partners in collaboration with the **Scientific Committee**. Some examples:

- products oriented towards other discipline like biogeographical maps;
- surface current climatologies in a coastal area based on HF radar data and possibly ADCP and altimetry data;
- in situ based reconstruction of monthly time series of gridded temperature and salinity;
- derived quantities such as mixed layer depth;
- properties or climate indicators such as ocean heat content and steric height;
- improved statistics fundamental for data quality control methods like horizontal and vertical correlations



Goal: to associate to each product a **PIDoc** containing all the specifications about its:

- General characteristics (format, space-time coverage, resolution)
- Quality (validation methodology and results)

PIDoc will have a DOI as well as the data products and both will be available through the SDC product catalogue



CONCLUSIONS

SeaDataCloud work plan on products is very ambitious and our success is dependent from **data availability** and the technical developments related to the cloud virtual research environment

EMODnet Data Ingestion WAKE UP YOUR DATA

Set them free for Blue Society

The **Data Ingestion Portal** facilitates submitting marine datasets for further processing, Open Data publishing and contributing to applications for society.

emodnet-ingestion.eu





PICO

activities

Venue

Registration

Pre- & post-assembly

THANK YOU!



The 2017 session should provide new ideas on the interoperability issues deriving from different sources of data. ISO standards introduce the necessary elements in the abstract process aiming to assess 'how' and 'how much' data meets applicable regulatory requirements and aims to enhance user needs. Data management infrastructures should include an evaluation of data by assuring relevance, reliability and fitness-for-purposes / fitness-for-use, adequacy, comparability and compatibility. Presenters are strongly encouraged to demonstrate how their efforts will benefit their user communities, facilitate collaborative knowledge building, decision making and knowledge management in general, intended as a range of strategies and practices to identify, create, represent and distribute data, products and information.