Further developing the SeaDataNet pan-European infrastructure for marine and ocean data management

Michèle Fichaut and the SeaDataNet Consortium
What is SeaDataNet?

A pan-European infrastructure set up and operated for managing marine and ocean data in cooperation with the NODCs and data focal points of 34 countries bordering the European seas.

<table>
<thead>
<tr>
<th>90s</th>
<th>Metadata directories</th>
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<tbody>
<tr>
<td></td>
<td>Medar/MedAtlas</td>
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<td>2002-2005</td>
<td>Sea-Search (FP5)</td>
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<td>2006-2011</td>
<td>SeaDataNet (FP6)</td>
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<td>2011-2015</td>
<td>SeaDataNet II (FP7)</td>
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<tr>
<td>2016-2020</td>
<td>SeaDataCloud (H2020)</td>
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A legal entity: SeaDataNet AISBL for sustainability of the Consortium (same structure than EuroGoos)
SeaDataCloud - Cooperation with EUDAT

A consortium of 20 High Performance Computing (HPC) centres offering also storage resources

5 EUDAT members are partners of SeaDataCloud

sdn-userdesk@seadatanet.org – www.seadatanet.org
SeaDataNet portal

With access to services

- Standards & common vocabularies
- Software tools both for data centres and users
- Data and metadata catalogues
- Data products

http://www.seadatanet.org

sdn-userdesk@seadatanet.org – www.seadatanet.org
SeaDataNet metadata directories

EDMERP Projects
EDIOS Observatories
CDI Cruises
CSR Data sets
EDMED
Organisations

SeaDataCloud 2nd User workshop, 17 September 2020
CDI catalogue: discovery and access to data

European data sources
Data centres ↔ ≈ 730 source laboratories

More than 110 data centres connected

SeaDataCloud 2nd User workshop, 17 September 2020

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

Vertical profiles or time series

- since 1800 ➔ 2020
- 2.5 M of CDIs for physical, chemical, biological, bathymetry, geosciences data
- 89% of unrestricted or SDN license data

Service for discovery and unified data access
cdi.seadatanet.org/search
SeaDataNet products

SeaDataNet Quality Checks Strategy (QCS)

- CENTRAL CDI
- Analysis of data anomalies
- Data harvesting
- File and parameter aggregation
- QC analysis
- QC-Loop

Aggregated datasets and climatologies

Improvement of the data quality

sdn-userdesk@seadatanet.org – www.seadatanet.org
SeaDataNet standards

- Metadata formats for all catalogues
  - ISO19115 and ISO19139
- SeaDataNet data transport formats
  - ASCII (Ocean Data View, and MedAtlas)
  - NetCDF (CF compliant)

➔ Relying on controlled vocabularies governed by NOC-BODC (UK) and used in many other international or national initiatives.
SeaDataNet software Tools (1)

• Tools for the data centres – data managers
  – To be connected to the infrastructure and to be able to duplicate data in the cloud (Replication manager)
  – To follow the data downloading by users: MySeaDataCloud
  – To generate the metadata at the SDN standards: MIKADO
  – To generate the data files at the SeaDataNet standards: NEMO
  – To check the compliance of the data files: OCTOPUS
  – To quality check the data: ODV
SeaDataNet software Tools (2)

- Tools for the users and data scientist
  - All catalogue search interfaces
  - To visualise data, plot, analyse: ODV
  - To interpolate data: DIVA
  - To publish your data using Sensor Web standards: SEANOE
  - To work on datasets in the cloud environment: SDN Virtual Research Environment (VRE)
    - prototype available and used by the regional product leaders of the SDC project