19-21 JUNE 2017, HELSINKI

EUROPEAN GEO WORKSHOP

EuroGEOSS: Shaping the European contribution to GEOSS

http://europa.eu/!Wq67yk   #EGW2017

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on behalf of the SeaDataCloud consortium

SeaDataCloud – further developing the pan-European SeaDataNet infrastructure for marine and ocean data management

Outline

- The infrastructure: *SeaDataNet*
- The on-going development project: *SeaDataCloud*
- Position in the ecosystem of data/observing systems

- The infrastructure: *SeaDataNet*

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 35 countries bordering the European seas

2006-2011	Metadata directories MEDAR/MedAtlas
2002-2005	Sea-Search (FP5)
2006-2011	SeaDataNet (FP6)
2011-2015	SeaDataNet II (FP7)
2016-2020	SeaDataCloud (H2020)

Portal with standards, tools, and services, both for users and data centres

>>> www.seadatanet.org

Information backbone: SeaDataNet metadata directories

EDMO *Organisations* 3862

EDMO ID

EDMERP
Projects

CSR
Research cruises
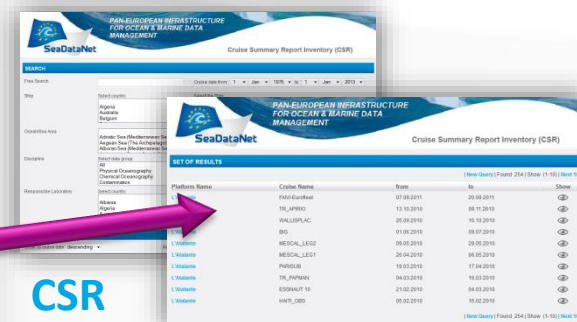
EDIOS
Observing programmes

CDI
Data index
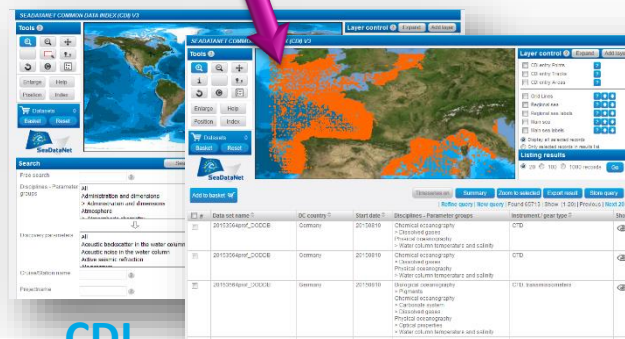
EDMED
Data sets
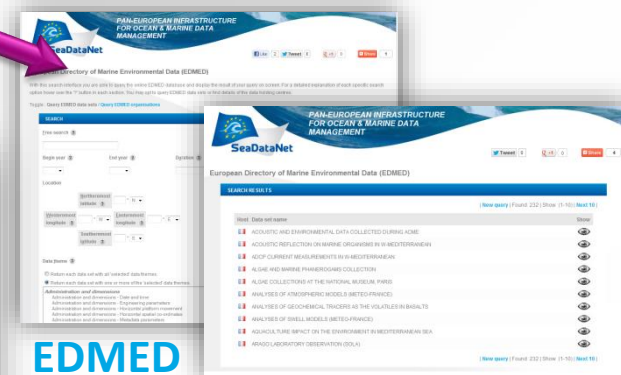
CDI service for discovery and unified data access

SeaDataNet portal

Search and Shop
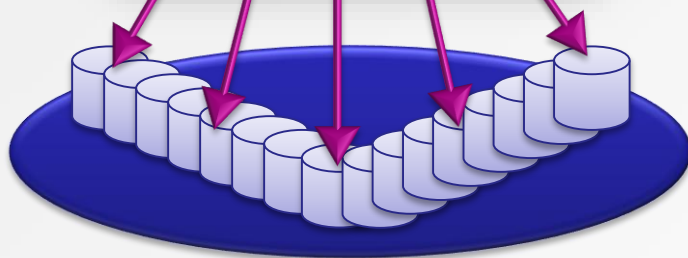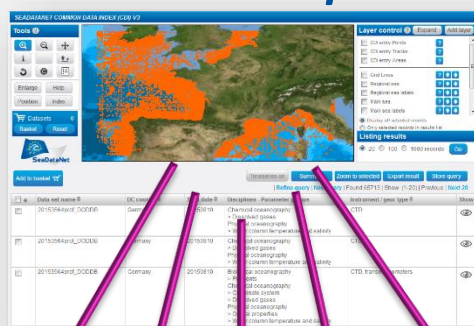
Data download

European data sources

100+ data centres ← 600 originators
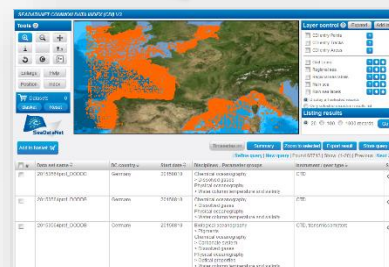
Metadata + transaction data
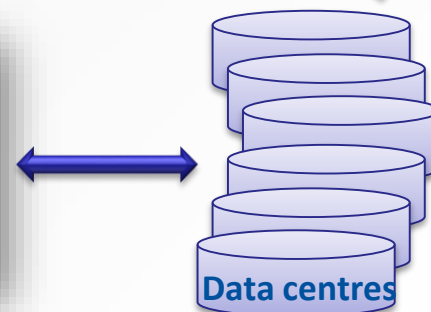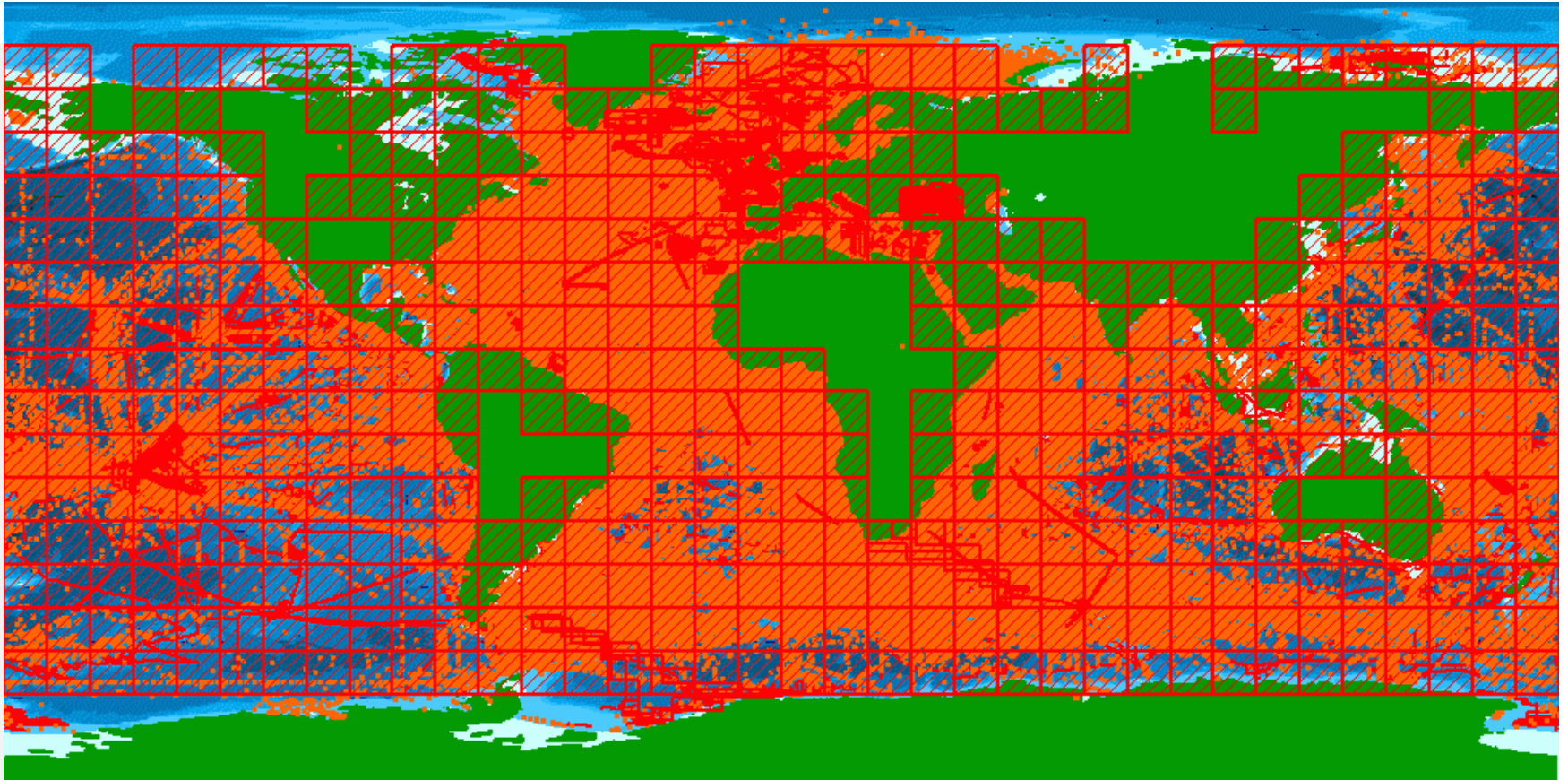
Data centres

1.95 million CDI entries from 34 countries, 102 data centres and 612 originators for physics, chemistry, geology, geophysics, bathymetry and biology; from 1805 to 2017; 87.6% unrestricted or under SDN License

SeaDataNet products

CENTRAL CDI

Analysis of data anomalies

Data harvesting

SeaDataNet Quality Checks Strategy (QCS)

QC analysis

File and parameter aggregation

Regional products

Access to the SeaDataNet Products Catalogue

Arctic Sea

Baltic Sea

North Sea

Mediterranean Sea

Black Sea

Atlantic Ocean
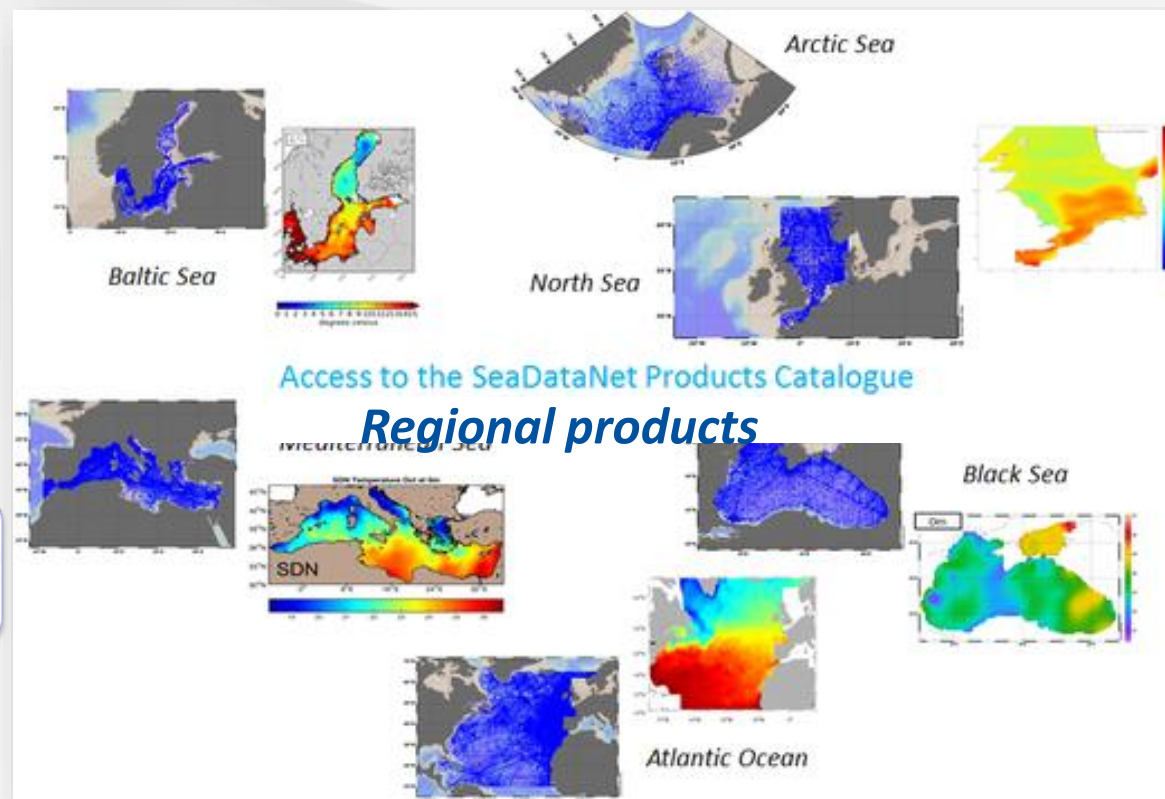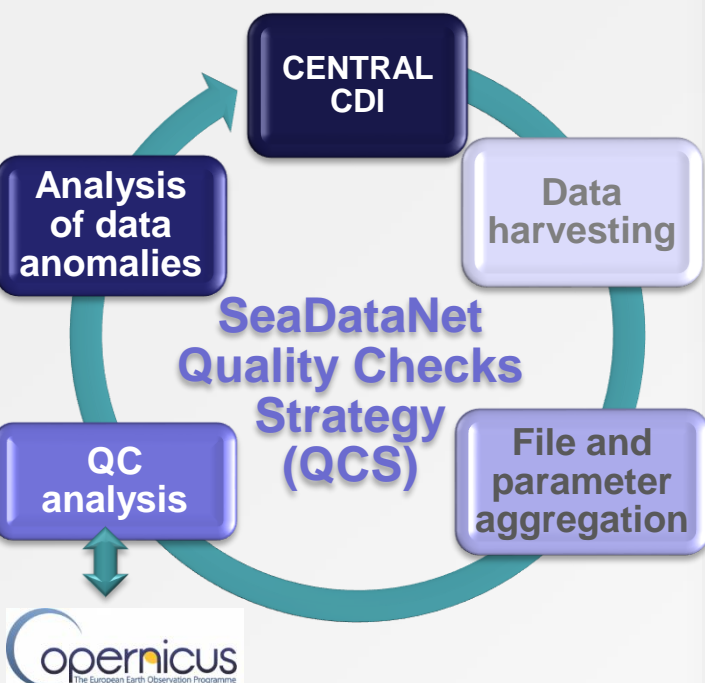
Aggregated datasets and climatologies

Improvement of the data quality – Scientifically sound synoptic "views" of the marine regions

- The on-going development project: ***SeaDataCloud***

SeaDataCloud – general challenges

- It is about updating and further developing **standards**

- It is about improving and innovating **services & products**

- It is about adopting and elaborating new technologies

- It is about giving **more attention to users** and putting the user experience in a central position

- Moreover, it is about **implementing a strategic and operational cooperation** between the SeaDataNet consortium of marine and ocean data centres and the EUDAT consortium of e-infrastructure service providers

SeaDataCloud – cooperation with EUDAT

EUDAT

European Computing Infrastructure

A consortium of high
performance
computing (HPC) /
data centres, libraries,
scientific
communities, data
scientists

SeaDataCloud topics

- Standards:
  - Vocabularies
  - Data Formats
  - **Expanding INSPIRE compliance**
  - **Sensor Web Enablement (SWE)**
  - Data Management for new data types
- Services:
  - Implementing **Linked Data** for SeaDataNet directories for M-to-M services
  - Upgrading the CDI Data Discovery and Access service **making use of the cloud**
  - Integrating data offering from international programmes and organisations
  - Integrating INSPIRE Transformation services
  - **Data publishing**

SeaDataCloud topics

- Developing and deploying a **Virtual Research Environment (VRE):**
  - Collaborative environment
  - Cloud computing
  - Big data
  - **Advanced e-services to facilitate research for handling, curating, quality controlling, transforming and processing marine and ocean data into value-added analyses, harmonised data collections, and data products which can be integrated, visualised and published using OGC and high level visualisation services.**

- Products:
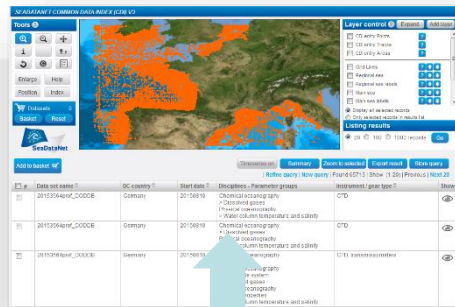 - **Improved T&S Climatologies – cooperation with Copernicus** Marine Environmental Monitoring Service

- Position in the ecosystem of data/observing systems

PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

SeaDataNet

GEOSS portal

IODE ODP portal

Aggregated collection

Data discovery
and access

Black Sea portal

Caspian portal

Geo-Seas portal

Regional subsets

EMODnet
European Marine
Observation and
Data Network

> 100 data centres

NODCs; HOs; GEOs; BIOs; ICES; PANGAEA

Thematic portals
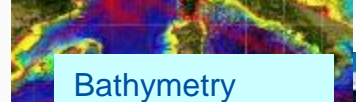
Bathymetry

Physics
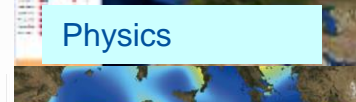
Chemistry

Geology

Biology

*≈ 600 European
data originators*

*CDI Data Discovery and
Access service*

SeaDataNet/Cloud cooperation and involvement: EMODnet

- EU initiative for an overarching **European Marine Observation and Data Network (EMODnet)** driven by Marine Knowledge 2020 and Blue Growth

- SeaDataNet qualified as a leading infrastructure for the EMODnet data management component and is driving several thematic portals from the start in 2008

- This synergy has resulted in many more data centres adopting SeaDataNet standards and connecting to the CDI Data Discovery and Access service while it gave a flying start to EMODnet

SeaDataNet/Cloud cooperation and involvement

- **Copernicus Marine Environmental Monitoring Services (CMEMS):** providing long-term archives and standards

- **European Marine Observation and Data Network (EMODnet):** providing infrastructure and standards for several portals

- **Marine Strategy Framework Directive (MSFD):** providing infrastructure, standards and data collections for several indicators

- **Large ocean monitoring systems (EuroGOOS, AtlantOS, Euro-ARGO, JERICO-Next, ..):** providing standards and validation + long-term archiving services

- **European Open Science Cloud (EOSC):** shaping the Blue Cloud pilot

- **Ocean Data Interoperability Platform (ODIP):** exploring and demonstrating common standards and interoperability with leading data management infrastructures in USA and Australia

SeaDataNet/Cloud cooperation and involvement

- **GEOSS - EuroGEOSS:**

  – Maintaining the GEOSS portal with SeaDataNet in-situ data collections from large community of European data holders (100+ data centres; 600+ data originators)

  – Ambition to play an active role in EuroGEOSS by providing standards, interoperability solutions, major European networks, large ocean and marine data management expertise, and capable developers