



SeaDataNet

*PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT*

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on behalf of the SeaDataNet community

SciDataCon 2016, 12-13 September 2016

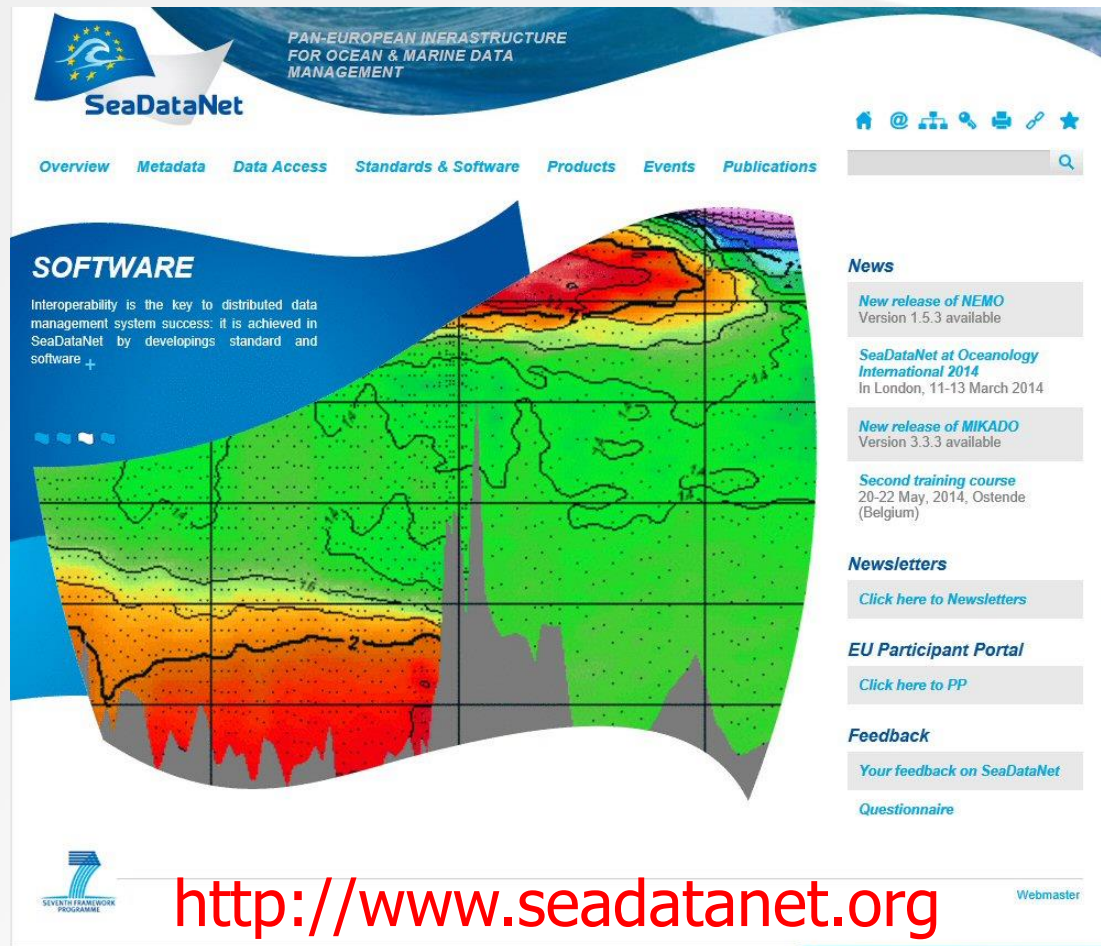
What is SeaDataNet?

A pan-European infrastructure set up and operated for managing marine and ocean data in cooperation with National Oceanographic Data Centres and oceanographic data focal points from 35 countries bordering European seas

1990s	Metadata directories, MEDAR/MedAtlas
2002-2005	Sea-Search
2006-2011	SeaDataNet
2011-2015	SeaDataNet II
2016-2020	SeaDataCloud



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



The screenshot shows the SeaDataNet portal homepage. At the top, there is a header with the SeaDataNet logo and the text "PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT". Below the header is a navigation bar with links: Overview, Metadata, Data Access, Standards & Software, Products, Events, and Publications. A search bar is located to the right of the navigation bar. The main content area features a large, colorful map of the North Atlantic Ocean, overlaid with a grid. To the left of the map, there is a section titled "SOFTWARE" with the text: "Interoperability is the key to distributed data management system success: it is achieved in SeaDataNet by developing standard and software +". To the right of the map, there is a "News" section with three items: "New release of NEMO" (Version 1.5.3 available), "SeaDataNet at Oceanology International 2014" (In London, 11-13 March 2014), and "New release of MIKADO" (Version 3.3.3 available). Below the news section is a "Newsletters" section with a link "Click here to Newsletters". Below that is an "EU Participant Portal" section with a link "Click here to PP". At the bottom of the page, there is a "Feedback" section with a link "Your feedback on SeaDataNet" and a "Questionnaire" link. In the bottom left corner, there is a logo for the "SEVENTH FRAMEWORK PROGRAMME". In the bottom right corner, there is a "Webmaster" link.

<http://www.seadatanet.org>

SeaDataNet standards

- Set of common standards for the marine domain, adapting ISO and OGC standards and achieving INSPIRE compliance
 - Adoption of ISO 19115 – 19139 standard for describing **metadata** on data sets, research cruises, monitoring networks, and research projects => marine metadata profiles, schemas, schematron rules
 - **Controlled vocabularies** for the marine domain (> 65,000 terms and > 80 lists), with international governance and web services
 - Standard **data exchange formats**: ODV ASCII and NetCDF (CF) fully supported by controlled vocabularies
- Maintenance and dissemination of standard QA-QC procedures, together with IOC/IODE and ICES

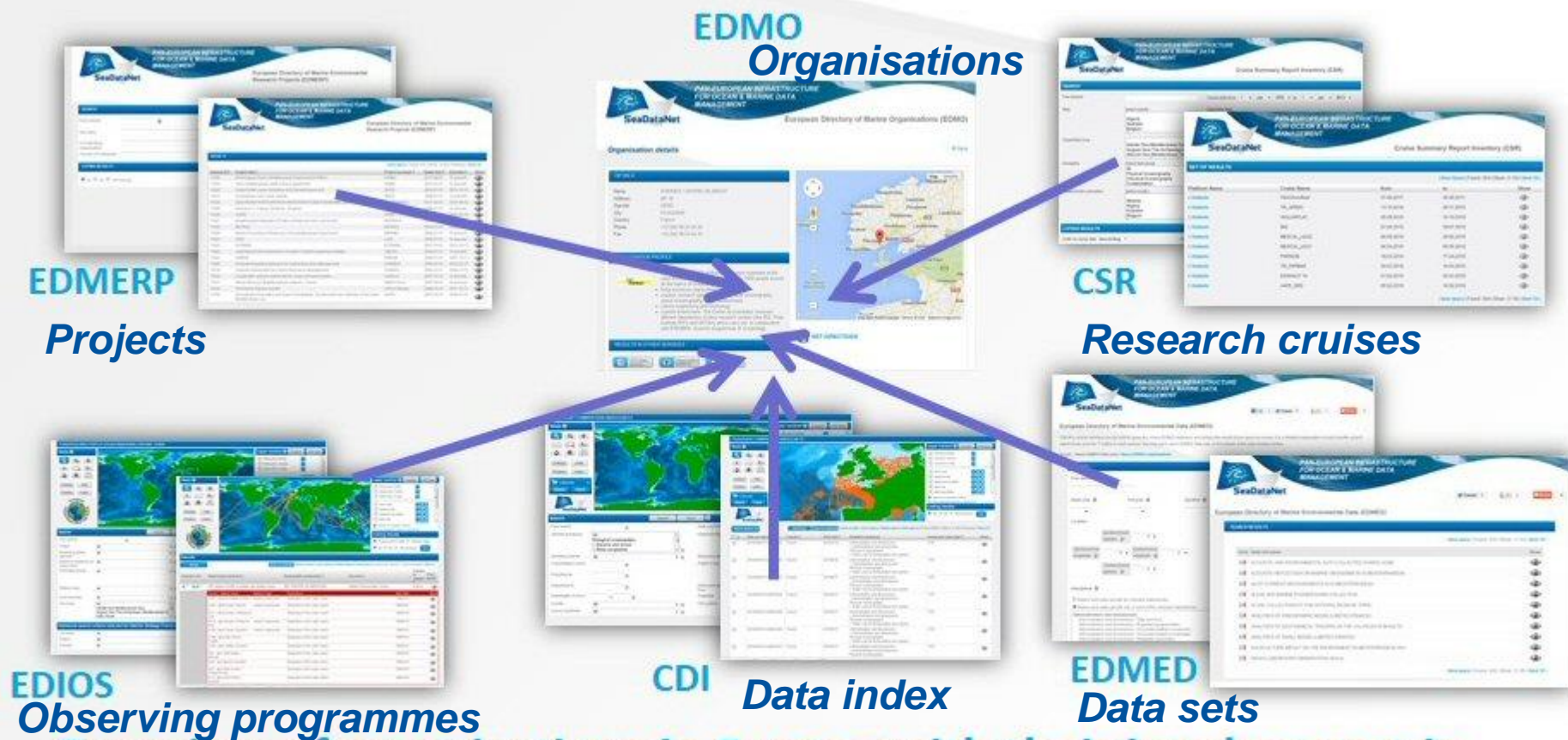
SeaDataNet services and tools

- **Set of tools** to be used by each data centre and freely available from the SeaDataNet portal: metadata editor, data conversion software, download manager, data analysis software, data interpolation software
- **Capacity building** by training workshops for uptake of standards and tools by the data centres in order to achieve standardisation
- **Pan-European services** for harmonised discovery, access, visualisation of data and data products
- Common SeaDataNet **Data Policy** and SeaDataNet License



SeaDataNet

Pan-European Metadata Directory services



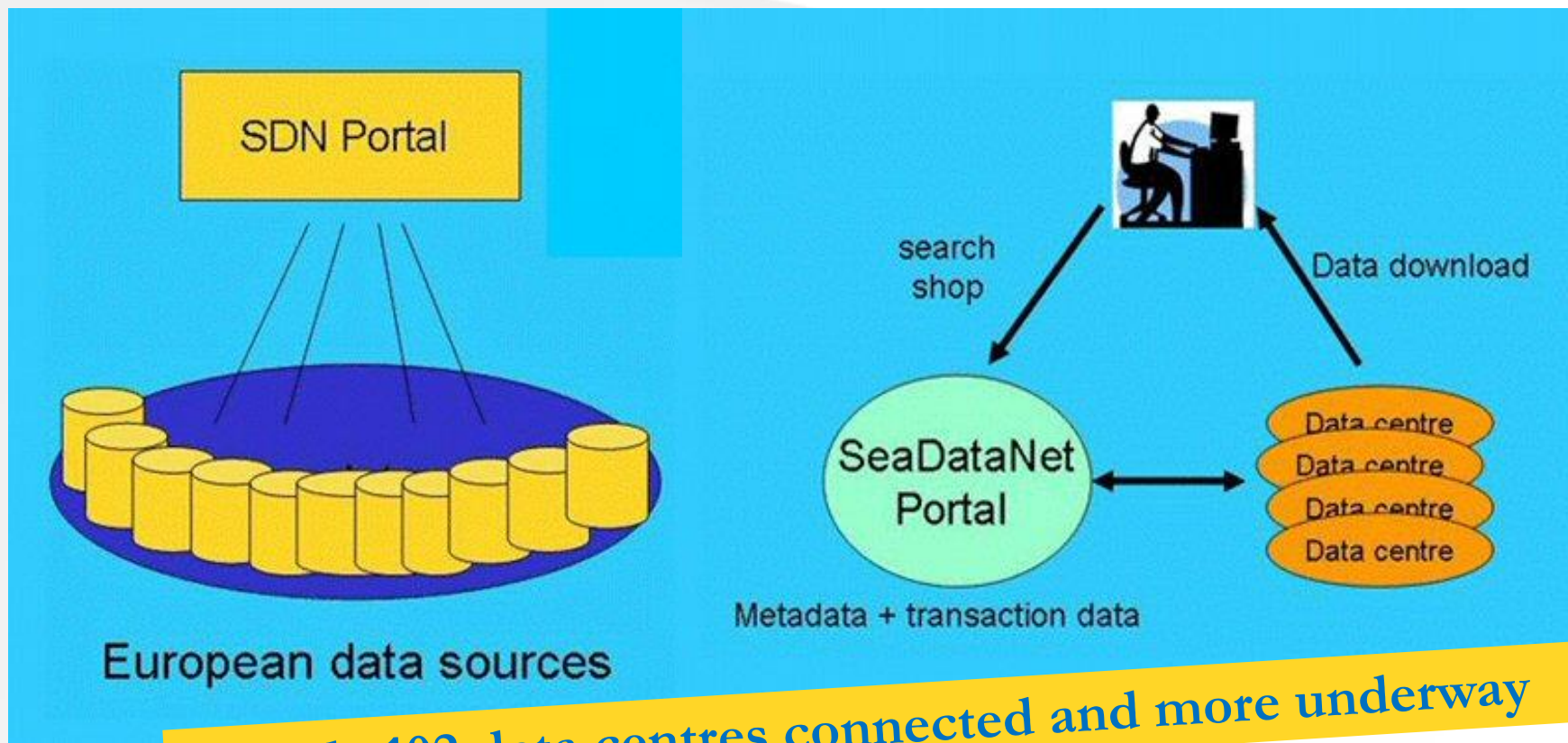
Overview of organisations in Europe with their involvement in marine projects, data sets, cruises and monitoring



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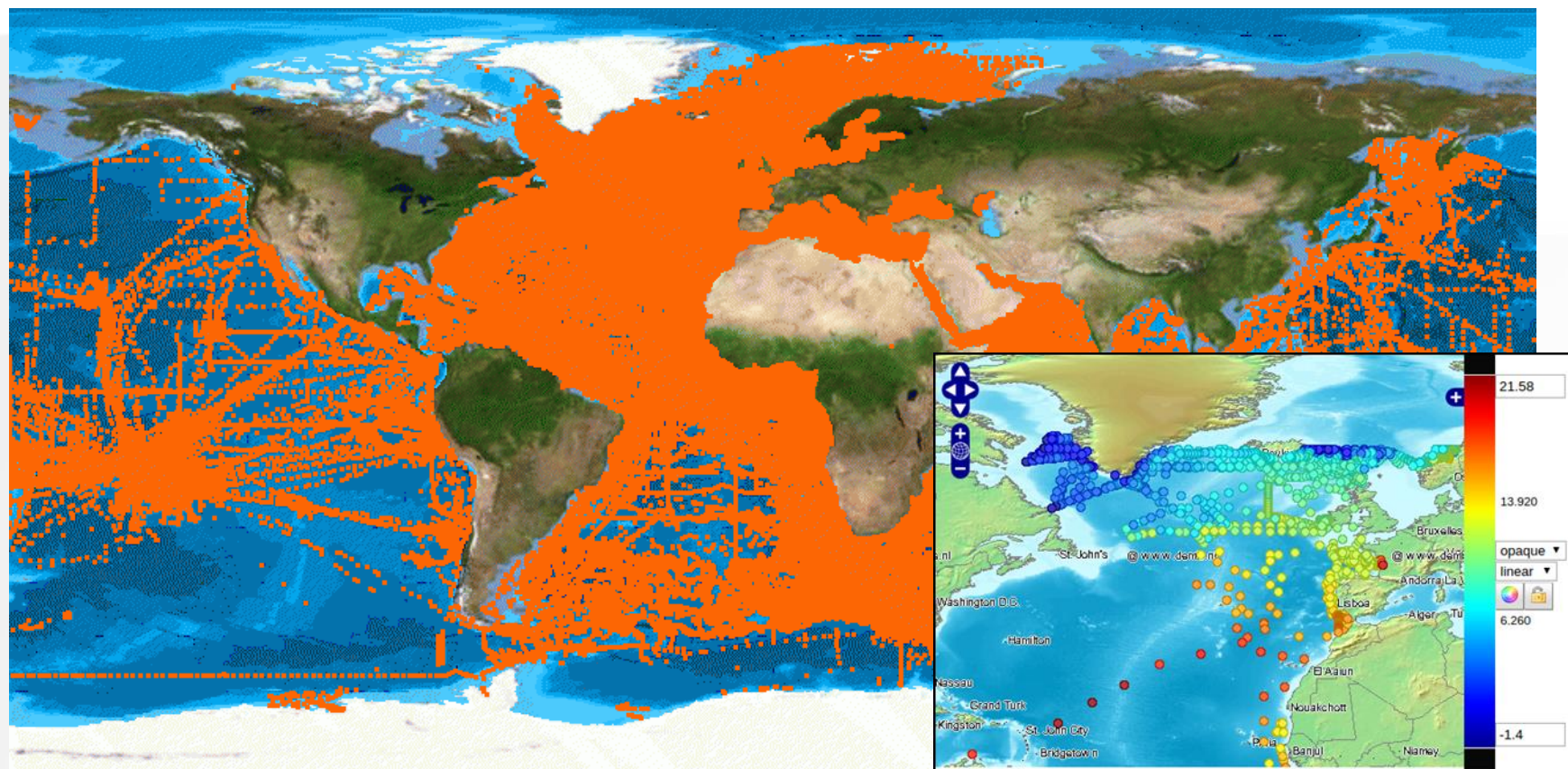
CDI service for discovery and unified data access





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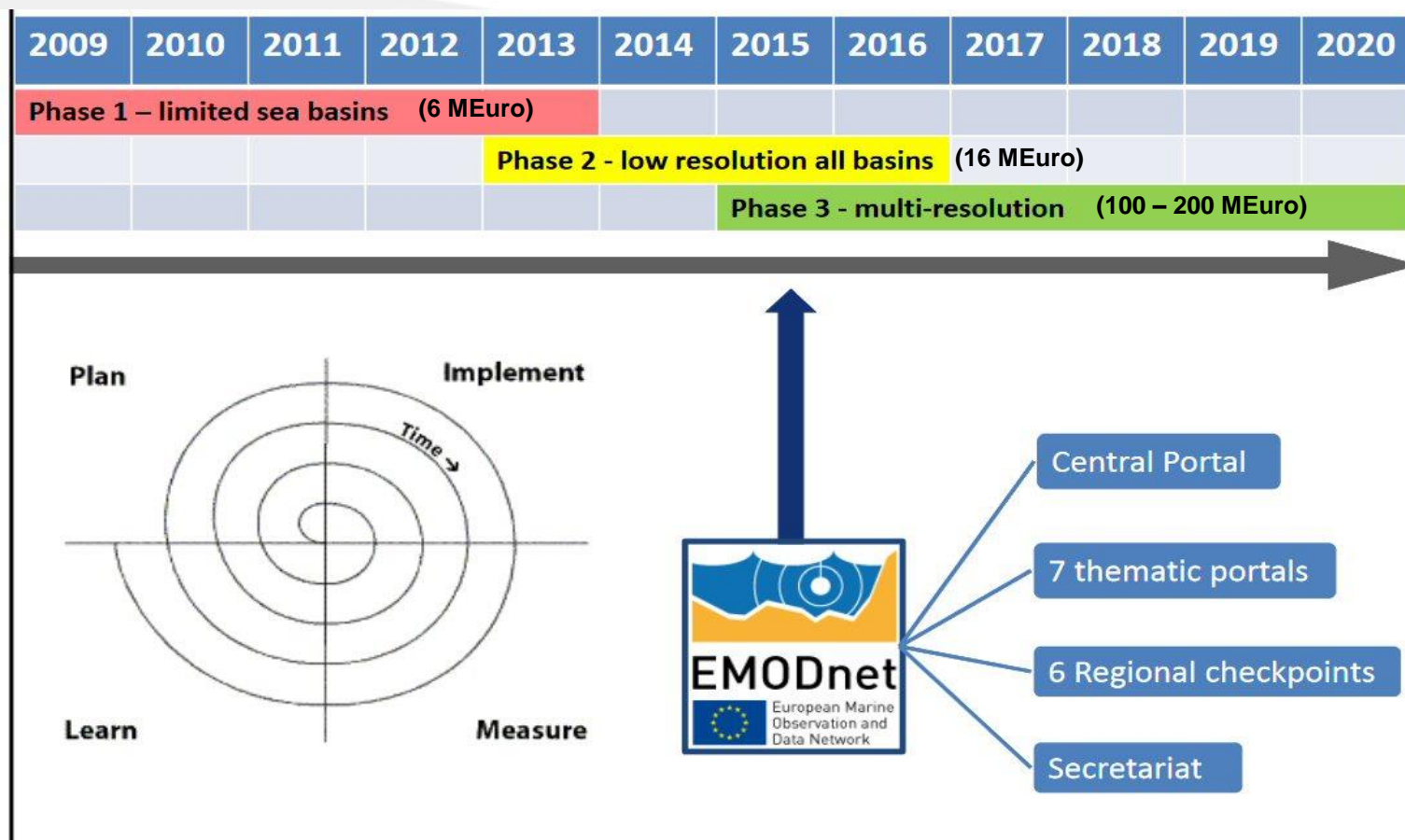
> 1.85 million CDI entries from **34** countries and **102** data centres and **593** originators for physics, chemistry, geology, geophysics, bathymetry and biology; years **1805 –2015**; **85%**unrestricted or under SeaDataNet license

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European Marine Observation and Data Network

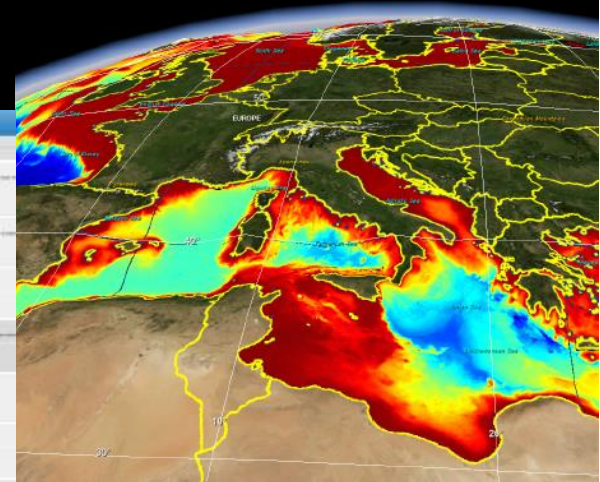
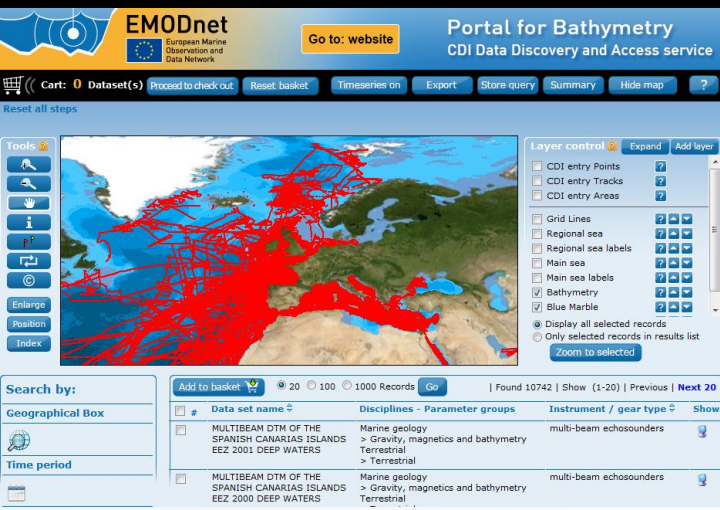
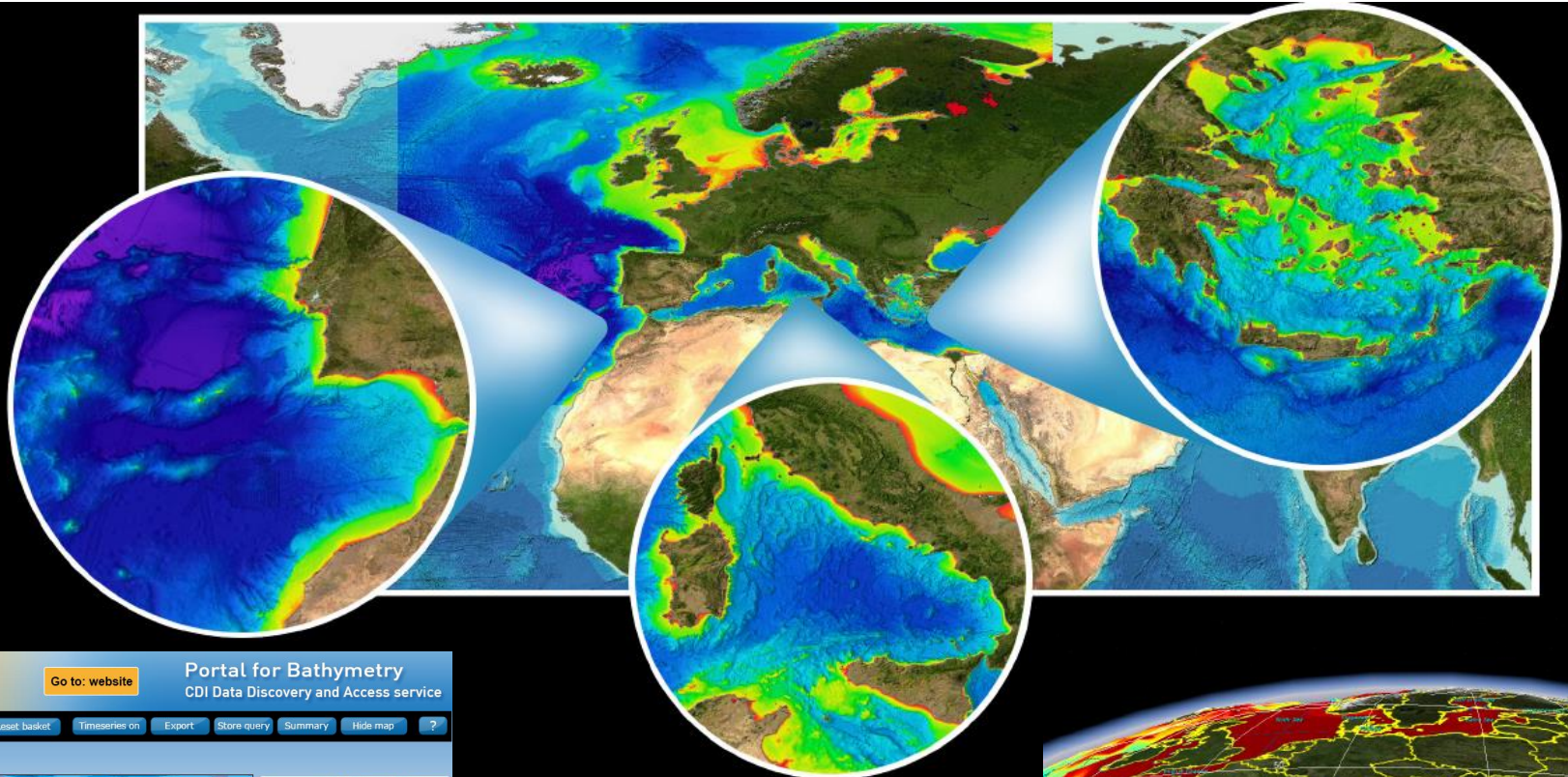
- EU communication “**MARINE KNOWLEDGE 2020** - marine data and observation for smart and sustainable growth” promotes ‘capture once – use many times’
 - The **EU Blue Growth communication** considers ocean and marine data as important input for driving scientific and economic developments
 - Initiative by **EU DG MARE**
- 
- Focus on generic European marine data products for different domains: **bathymetry, geology, biology, chemistry, physics, seabed habitats, coastal mapping, and human activities**
 - Use of standards is of vital importance

SeaDataNet a partner in developing and building: EMODnet



Resulting in uptake of SeaDataNet standards and expansion of the infrastructure of data centres giving data overview and access

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Total collection



Data discovery
And access



> 100 data centres



NODCs; HOs; GEOs; BIOS; ICES; PANGAEA

> 500 European data
originators

Data Discovery
and Access service



GEO/GEOS portal

Aggregated collections



IOC/IODE Ocean
Data Portal



Black Sea portal



Caspian portal



Geo-Seas portal



Bathymetry

Physics

Chemistry

Biology

Geology

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SeaDataCloud – a new opportunity

Standards are always evolving and the SeaDataNet network must stay up-to-date to maintain and further expand its services to its lead customers and major stakeholders:

- European and international ocean and marine research community
- Copernicus Marine Environmental Monitoring Service (CMEMS)
- European Marine Observation and Data network (EMODnet)
- Marine Strategy Framework Directive (MSFD)
- Large marine observing networks (EuroGOOS, AtlantOS, Euro-ARGO, EMSO, JERICO-Next, etc.)

The EU has just accepted the new **SeaDataCloud proposal** (10 Meuro) in the framework of the EU HORIZON 2020 programme for further developing the SeaDataNet infrastructure and associated standards in the coming 4 years

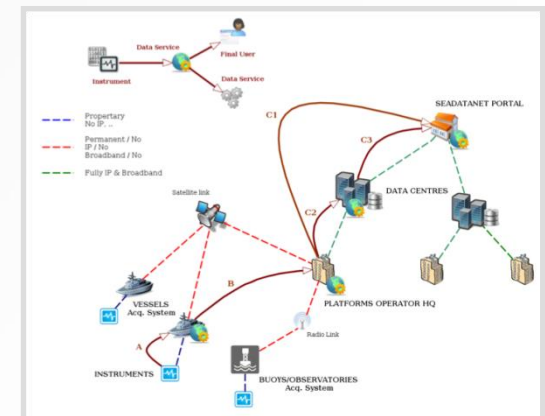
SeaDataCloud – some planned activities

- **Improve services to users and data providers :**
 - Utilise the benefits of a cloud environment with high performance computing to improve the performance of the CDI data access services;
 - Develop online services to visualise and process data, in order to preview, subset, format, or analyse data of interest;
 - Develop a Virtual Research Environment (VRE) to facilitate collaborative and individual research by users
- **Improve interoperability with other European and International networks**

SeaDataCloud – some planned activities

Optimise connecting data centres and data streams to the infrastructure:

- Ease connecting data centres to the SeaDataNet infrastructure by revising and upgrading the existing components;
- Facilitate connecting and ingesting data streams from operational observation networks using **OGC Sensor Web Enablement (SWE)** standards (collaboration with ODIP Prototype 3 and other projects)





International Conference on Marine Data and Information Systems (IMDIS2016) Gdańsk, Poland, October 11-13, 2016