IMDIS conference
23-25 September, 2013
Lucca, Italy

SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

Cooperation

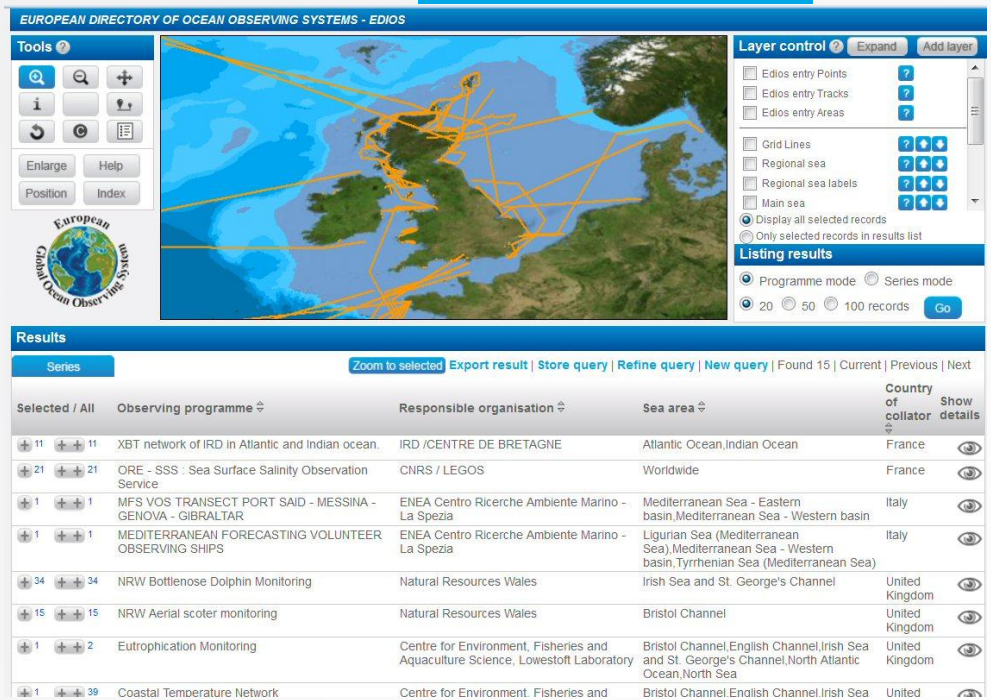
DMA Schaap – Technical Coordinator

SeaDataNet 2 cooperation

- For refining and enriching the SeaDataNet standards
- For making the SeaDataNet approach and standards fit for purpose of many different user communities
- For expanding the SeaDataNet infrastructure with more data centres and more volumes of multi-disciplinary data
- For developing added-value services on top of the SeaDataNet infrastructure
- For developing interoperability to other infrastructures

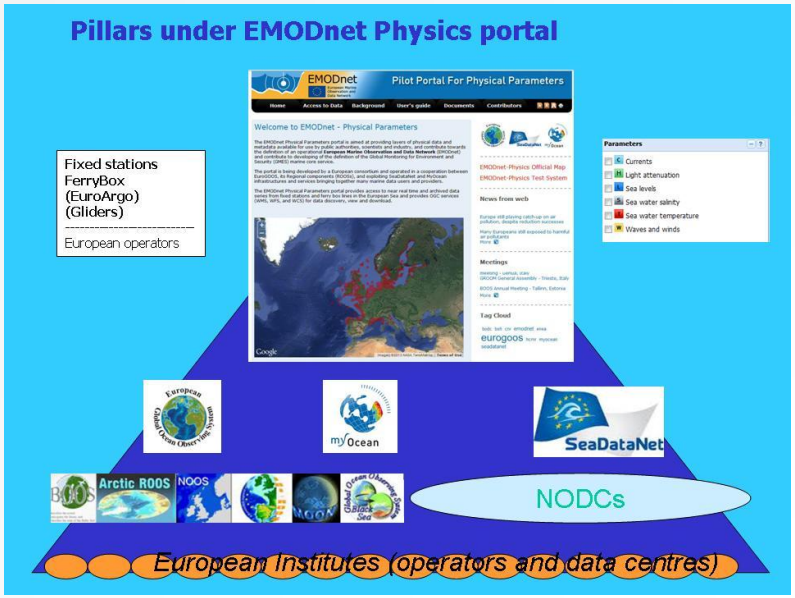
SeaDataNet 2 cooperation with EuroGOOS

- maintaining the European Directory of Ocean observing systems (EDIOS) and quality controlling and archiving long-term data series. See www.edios.org



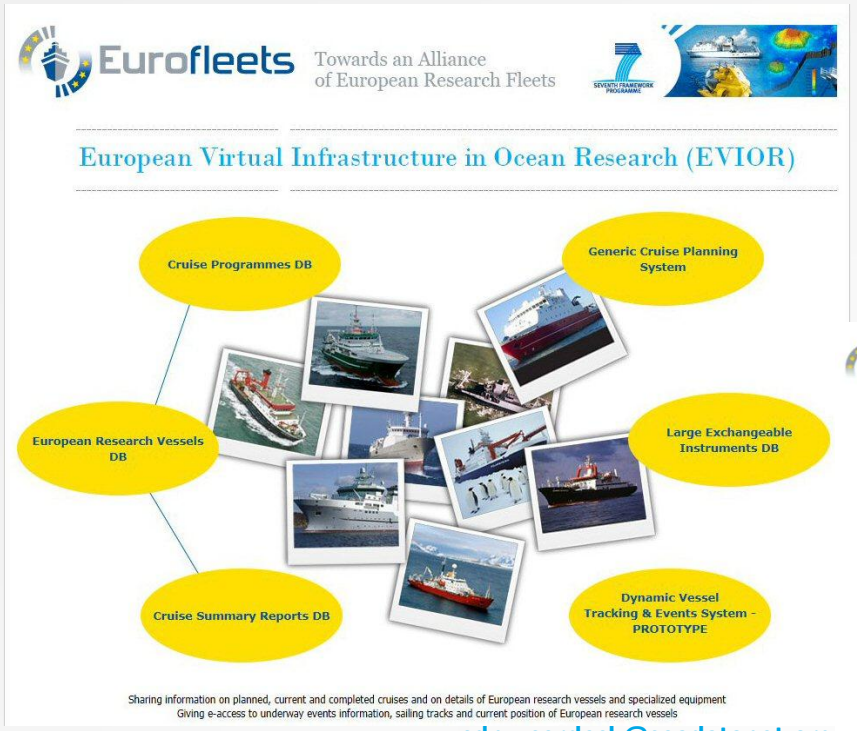
SeaDataNet 2 cooperation with MyOcean

- for streamlining the provision of long-term archives for optimising marine forecast services; **SeaDataNet** has an MoU with **MyOcean** to formalise the cooperation
- Together with EuroGOOS developing the EMODNet Physics portal streamlining availability and access of NRT and archived metocean data



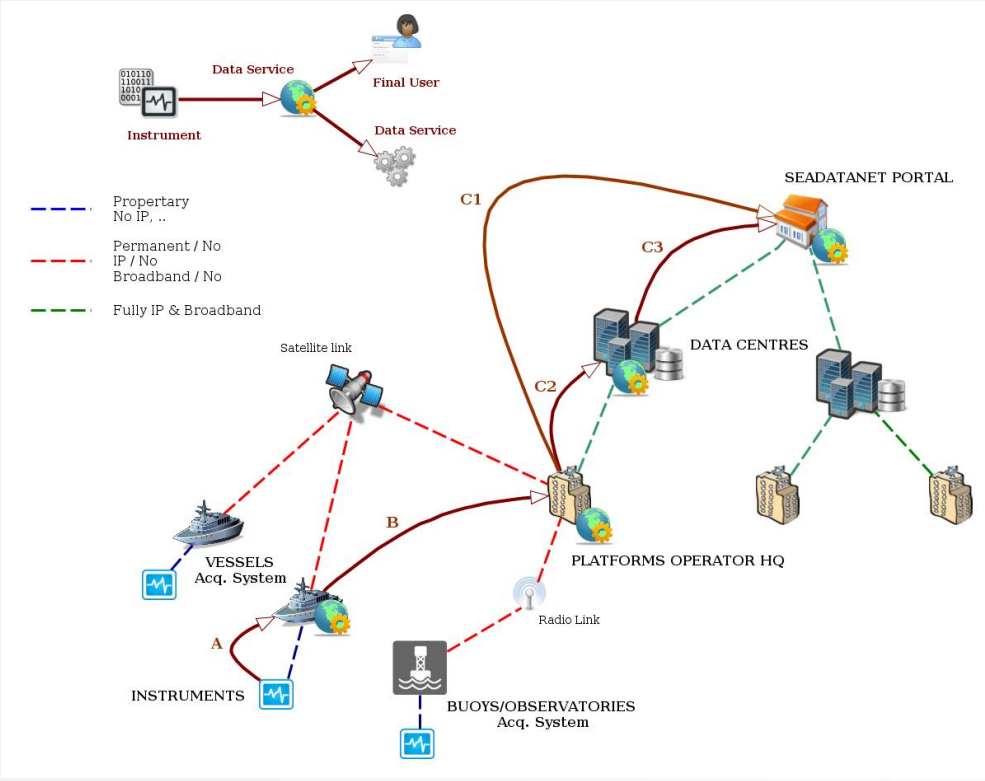
SeaDataNet 2 cooperation with EuroFleets, POGO and EurOcean

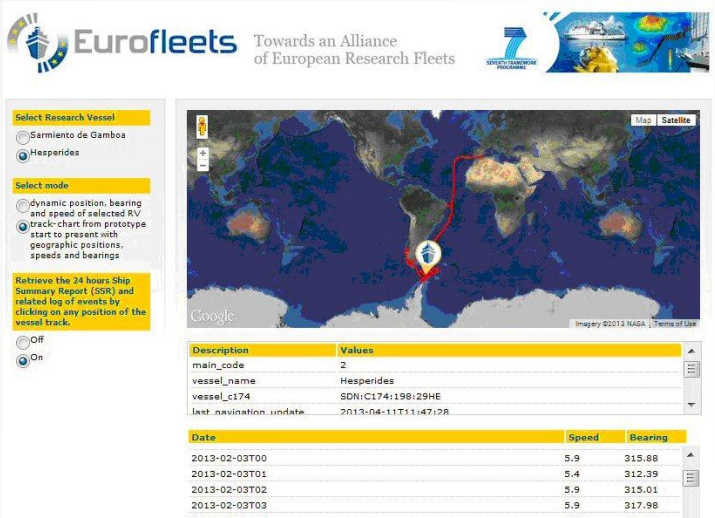
– collecting and providing information on ocean-going research vessels, and their operators, planned and completed cruises.



SeaDataNet 2 cooperation with EuroFleets

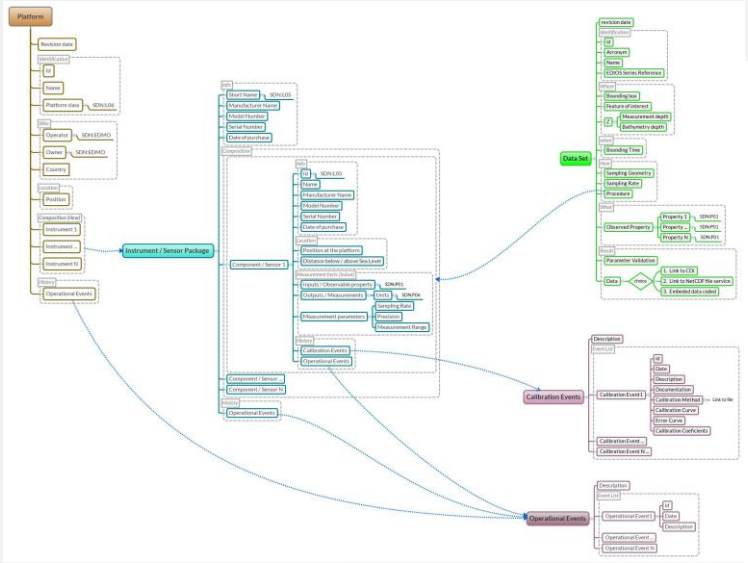
- streamlining the flow of data from the research cruises to the data centre by developing SWE standards and applications

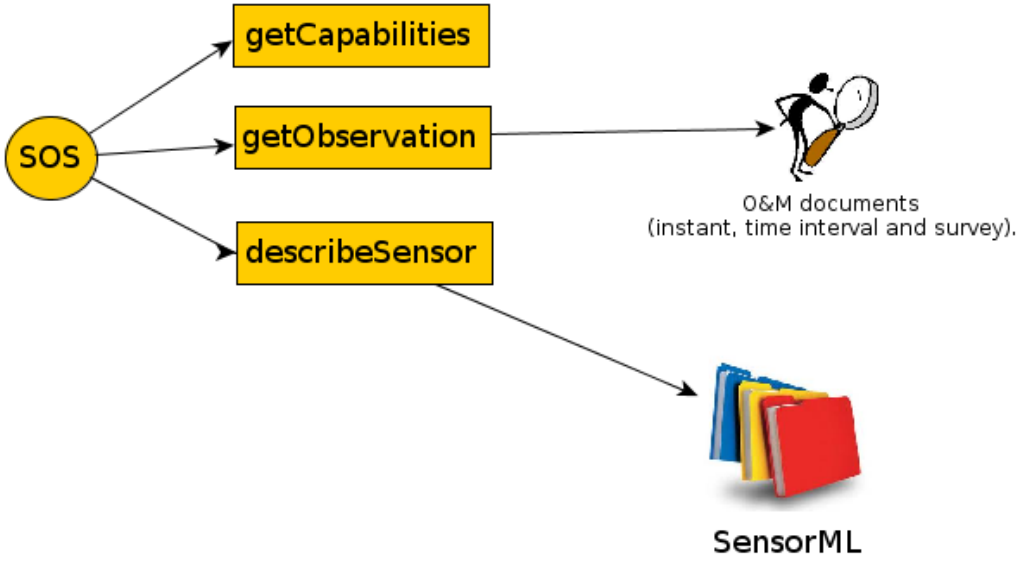




SeaDataNet 2 cooperation with JERICO

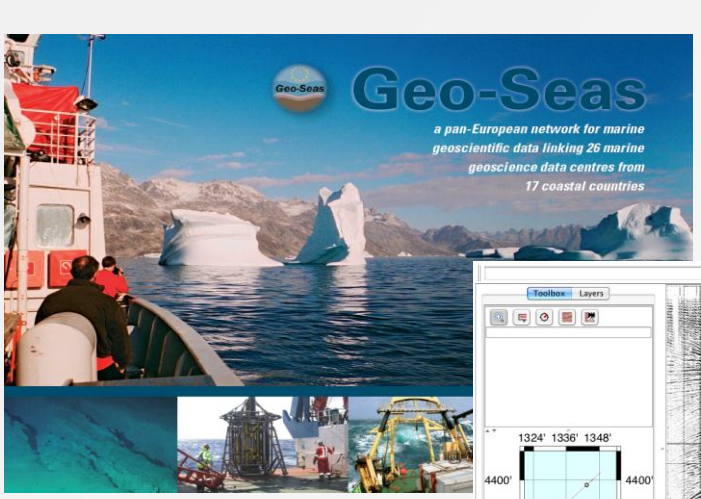
- Developing SWE standards and services for Real-Time data flow from fixed monitoring stations

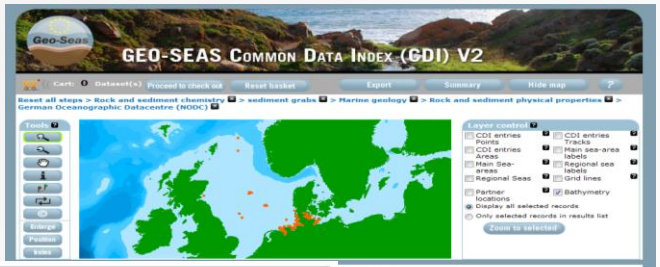


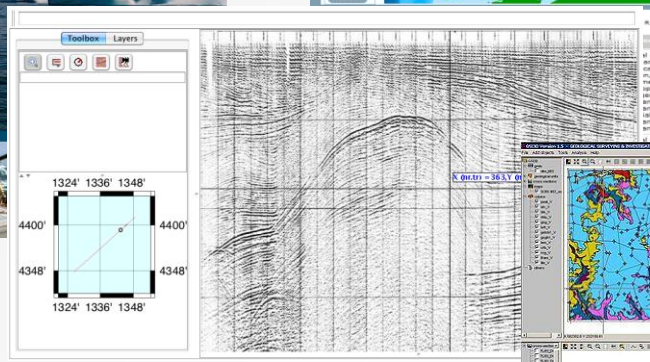


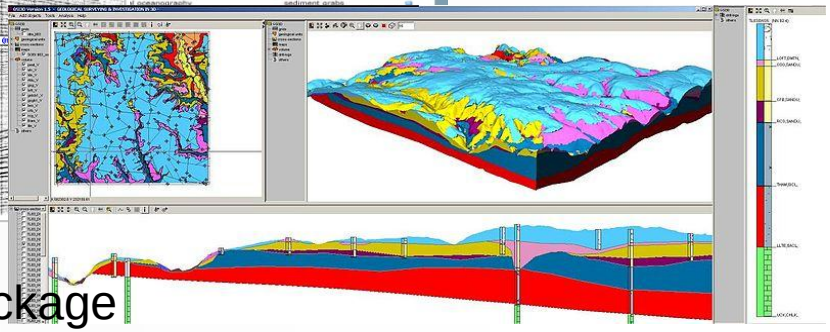
SeaDataNet 2 cooperation with Geo-Seas

- Adopting and adapting SeaDataNet standards and infrastructure for discovery and access to geological and geophysical metadata, data and data products





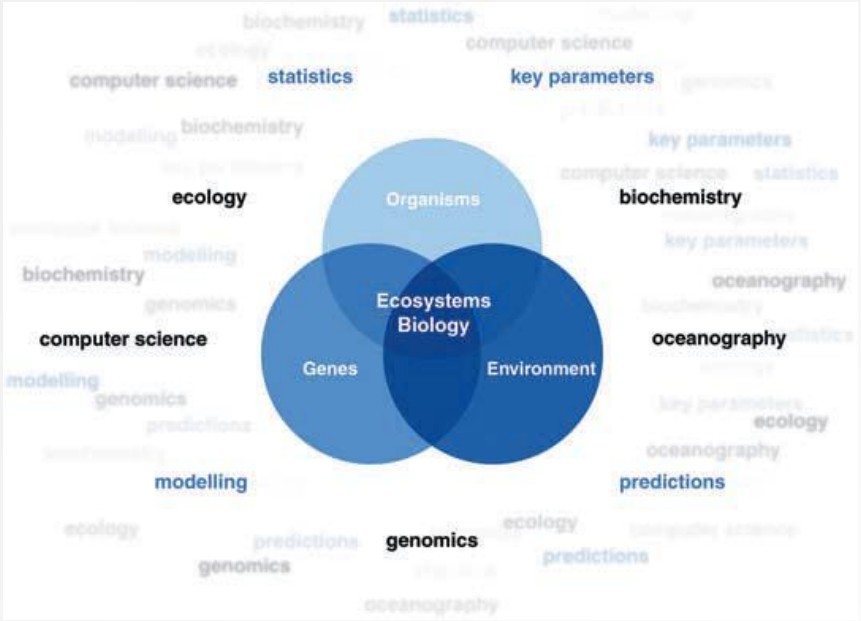


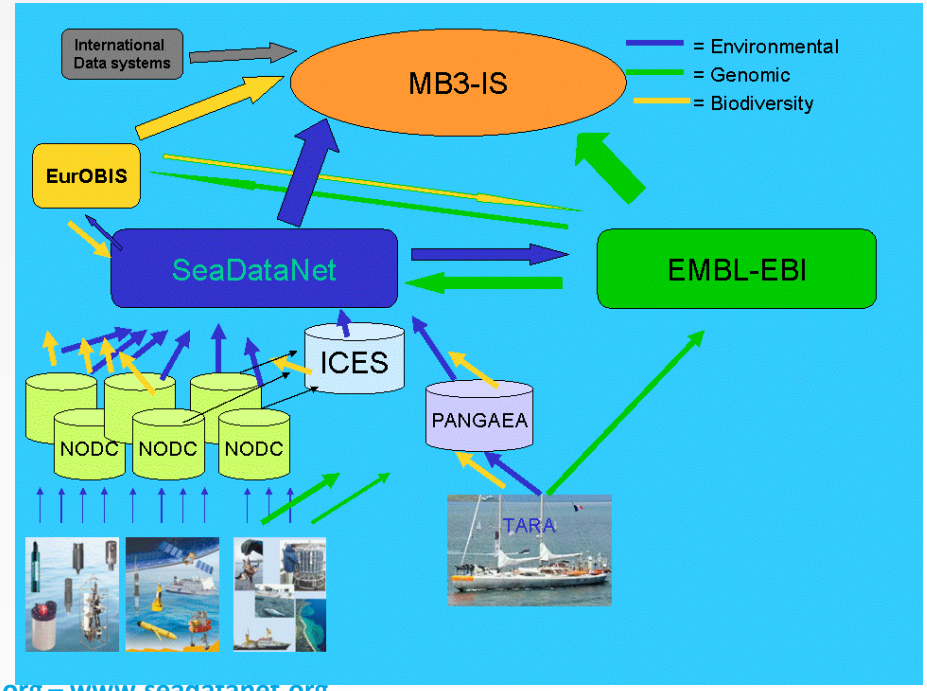


HR seismic viewing services and software package for lithological log visualisation and 3 D viewer

SeaDataNet 2 cooperation with Micro-B3

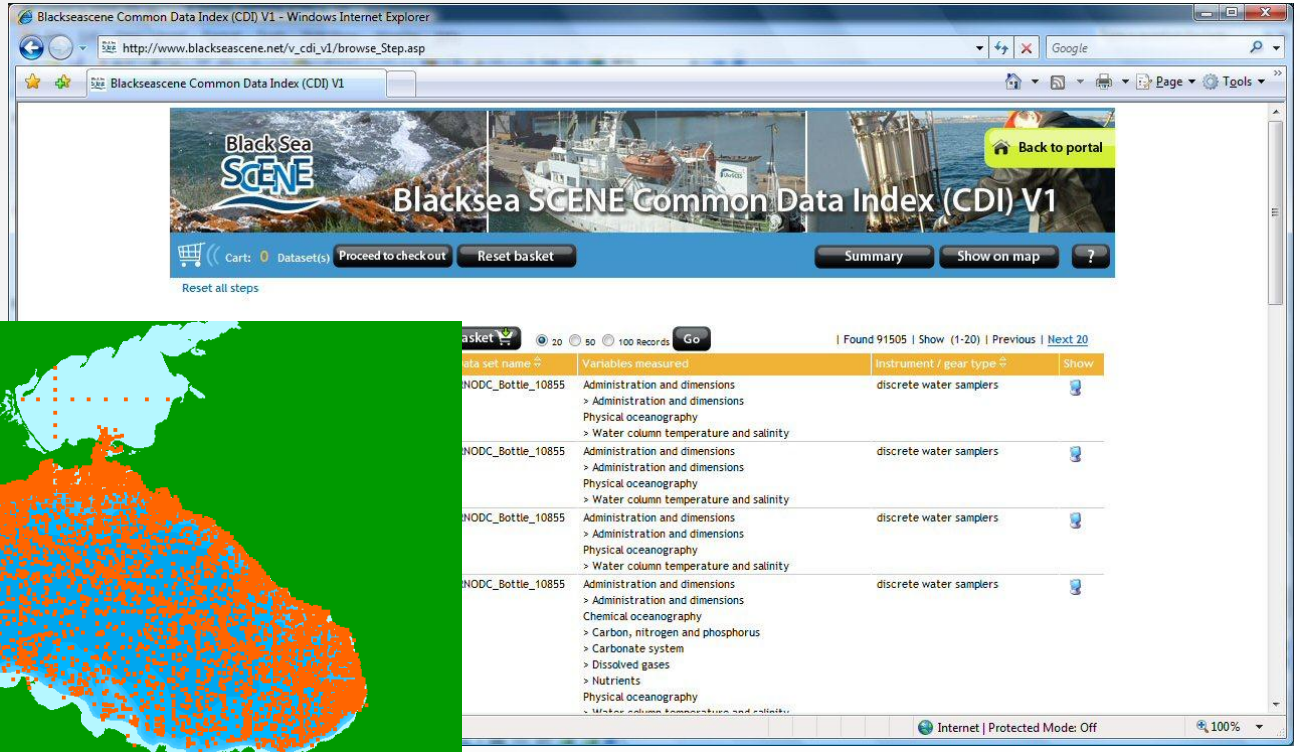
- aims for a better understanding of the complexity of marine microbial communities and their role in climate change.
- data sets and information on marine organisms and genes need to be complemented with their environmental context …….

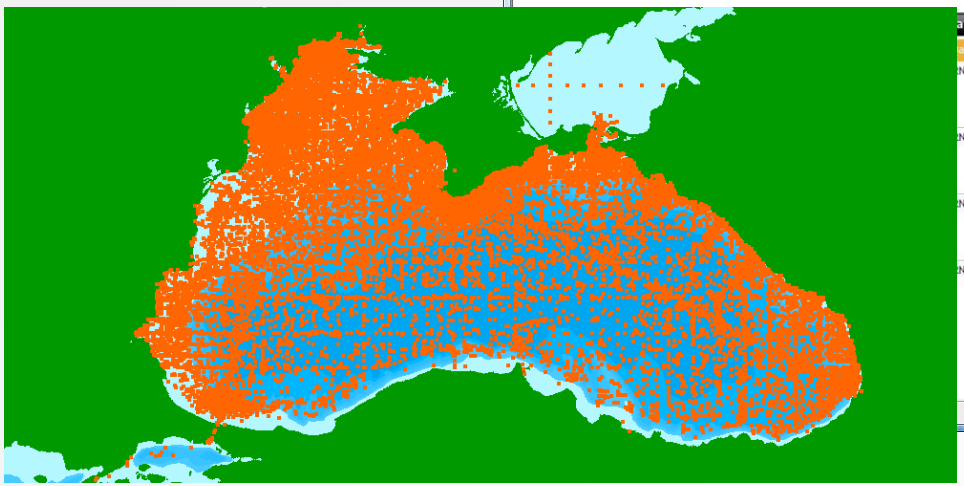




SeaDataNet 2 cooperation UBSS and CaspInfo

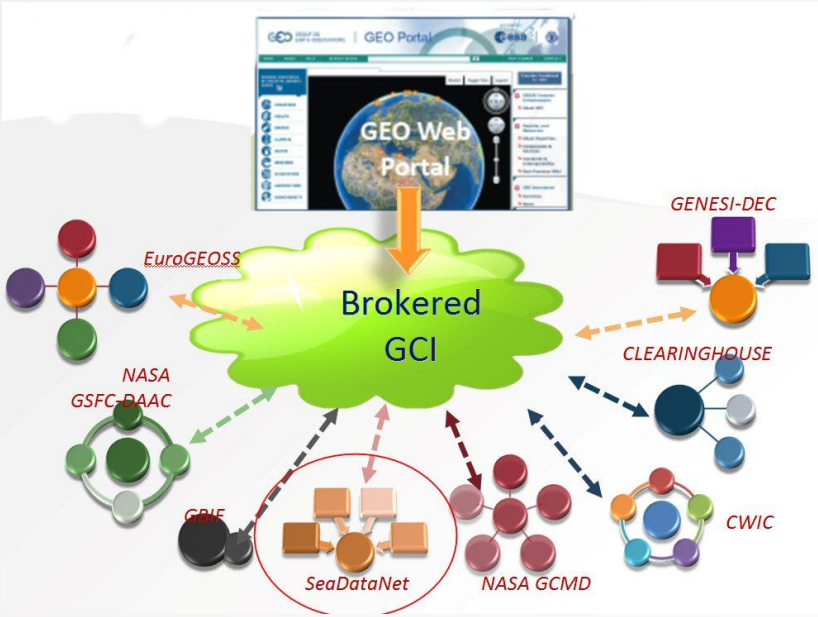
- Marine Data Management capacity building and expanding the SeaDataNet infrastructure for the Black Sea and Caspian Sea regions

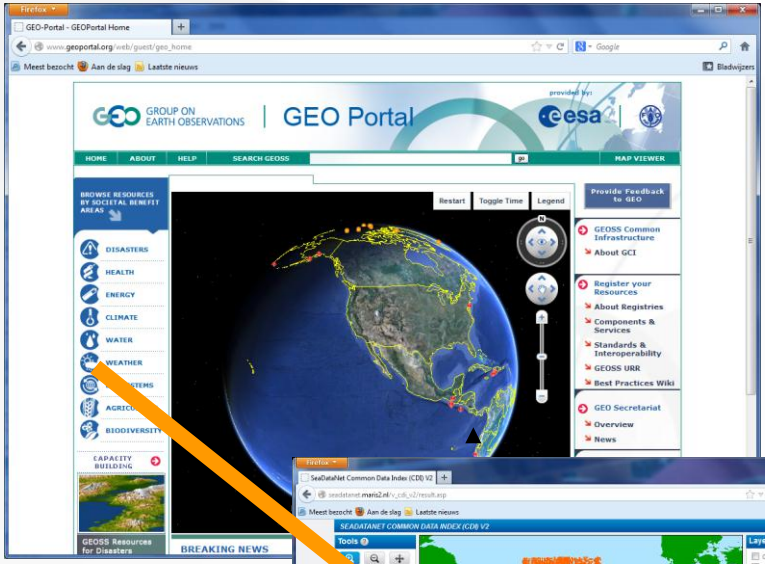


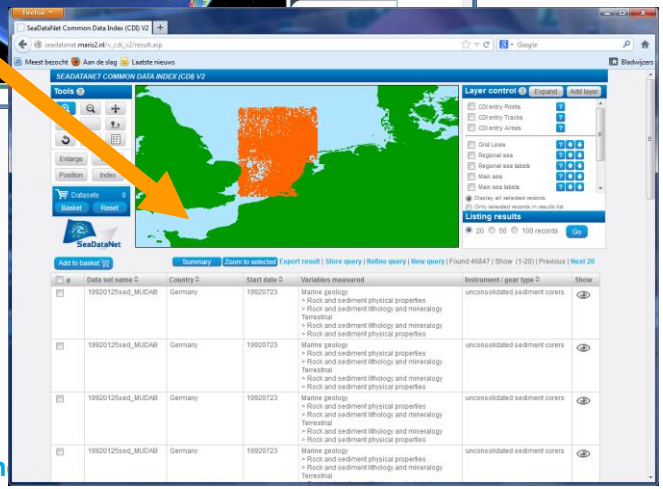


SeaDataNet 2 cooperation with GEOSS

- Populating the GEOSS portal via the EuroGEOSS Brokerage service







SeaDataNet 2 and EMODNet

EMODnet
European Marine Observation and Data Network

- EU has adopted the Marine Directive and Maritime Policy.
- The Commission proposed to take steps towards an overarching **European Marine Observation and Data Network (EMODNet)**
- The initial Roadmap for EMODNet was released in April 2009
- A cost – benefit analysis reveals that the cost of marine observation in Europe is circa 400 Million Euro per year for space data and another 1 Billion Euro per year for in-situ data => better availability and access can give benefits of at least 300 Million Euro per year for industry, research, government and public

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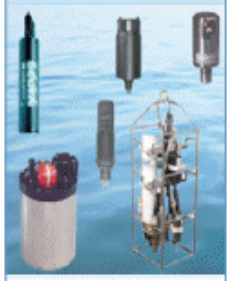
EMODnet
European Marine Observation and Data Network

Essential Components of an Observation Network

Sensors to measure continuously and automously physical, chemical and biological parameters



- salinity, temperature
- turbidity, oxygen
- chlorophyll, nutrients
- pH, alkalinity
- bathymetry
- primary production

Platforms or structures anchored on the seabed, floating in the water column or drifting at the sea surface, and remote sensing from satellites.

- buoys, floats
- gliders
- mooring
- AUVs, lander
- FerryBox
- cabled networks
- remote sensing

Sampling and consecutive laboratory analyses from research ships, or shore, including water, sediments and biota (phytoplankton, bacteria, zooplankton, fish)

- inorganic trace compounds
- gases, e.g. CO2, CH4, DMS
- organic micropolluants
- abundance & function of biota

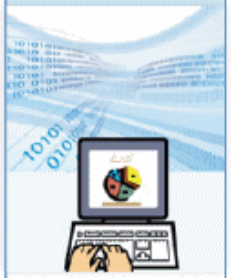
Communication systems to transfer in real-time data from sensors to the network and to the land stations

- satcom
- GSM, GPRS
- fibre optics
- acoustics

Data collection and management system for direct control of data quality, and data storage systems to enable data analysis and use for model applications

- data bases
- quality control
- data standards

Software and web based information tools to analyse data for trends, compliance to EU directives, to distribute and disseminate data to end users

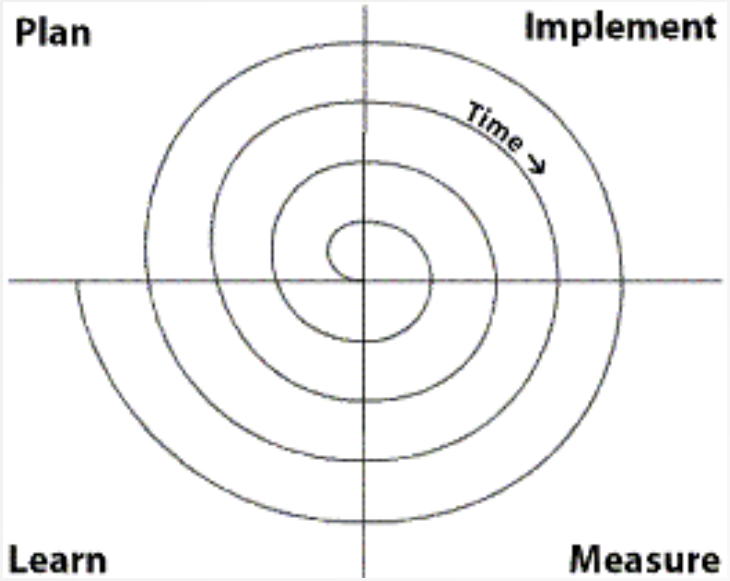


- analysis
- Presentation
- web
- GIS

a network of existing and developing European observation systems, linked by a data management structure covering all European coastal waters, shelf seas and surrounding ocean basins, accessible to everyone

SeaDataNet

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Phase 1 – limited sea basins											
				Phase 2 - low resolution							
						Phase 3 - multi-resolution					



PROTOTYPING:

allows users to assess and improve product by trying it out

EMODnet
European Marine Observation and Data Network

SeaDataNet 2 and EMODNet

EMODnet
European Marine Observation and Data Network

- Preparatory actions were launched for phase 1 2009 – 2011 followed by phase 2 2012 – 2014.
- Concern setting up and further developing portals to provide data products services for data themes over a number of maritime basins:
  - Geology, Chemistry, Biology, Hydrography, Marine Habitats, Physics
- Overall SeaDataNet has qualified itself as leading infrastructure for the EMODNet data management component and is driving several preparatory projects

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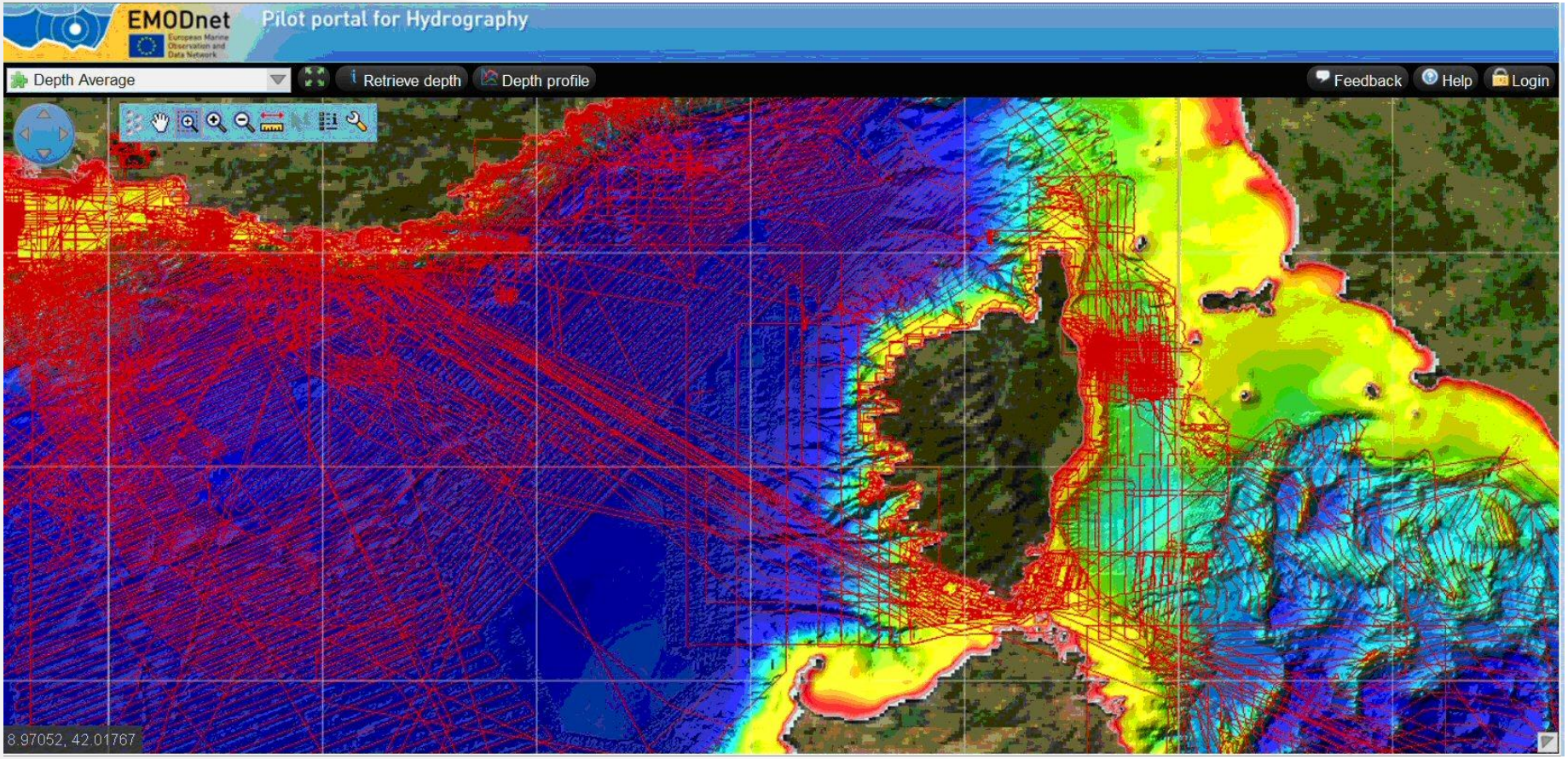
SeaDataNet

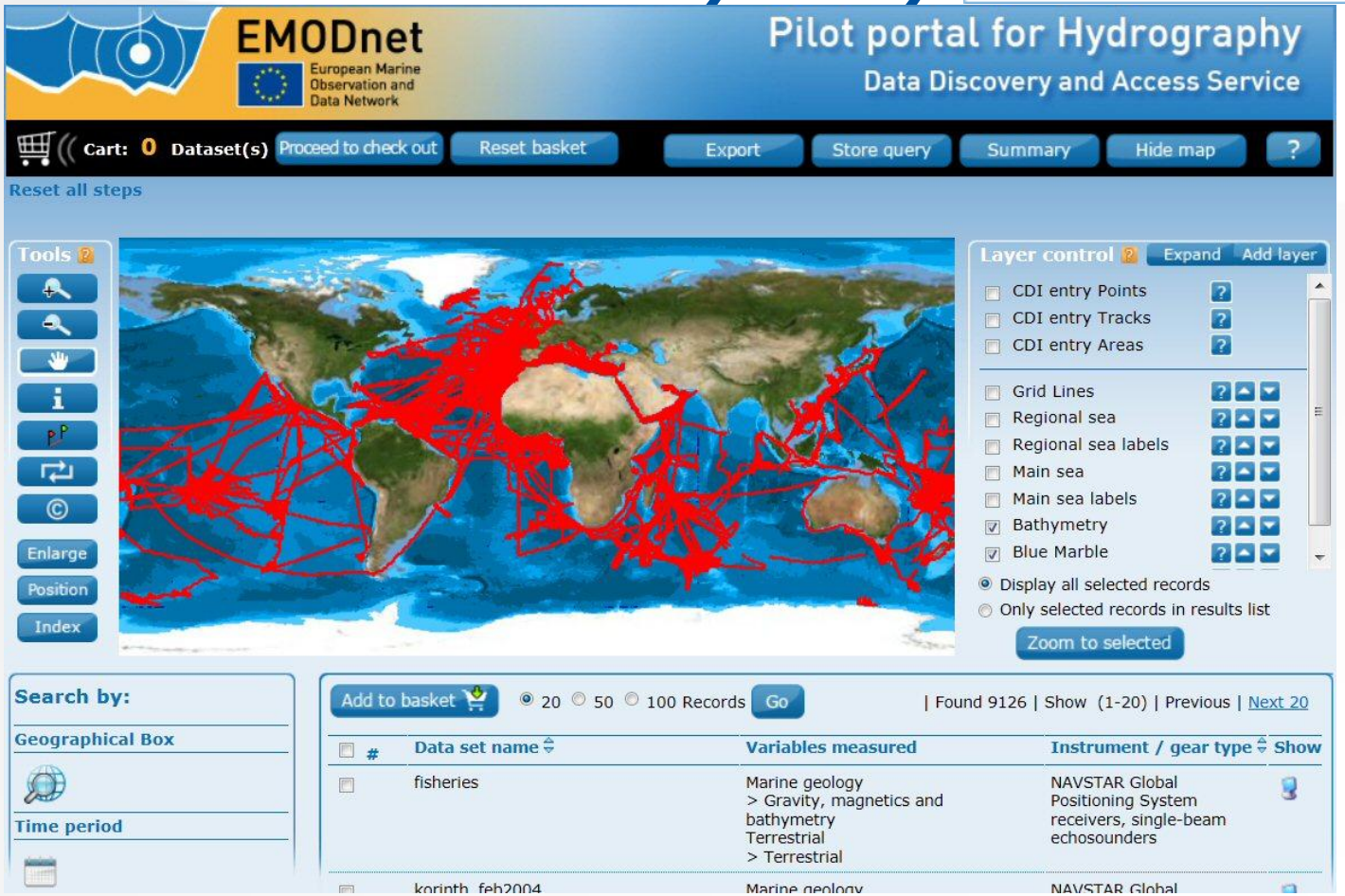
EMODnet
European Marine Observation and Data Network

EMODNet Bathymetry



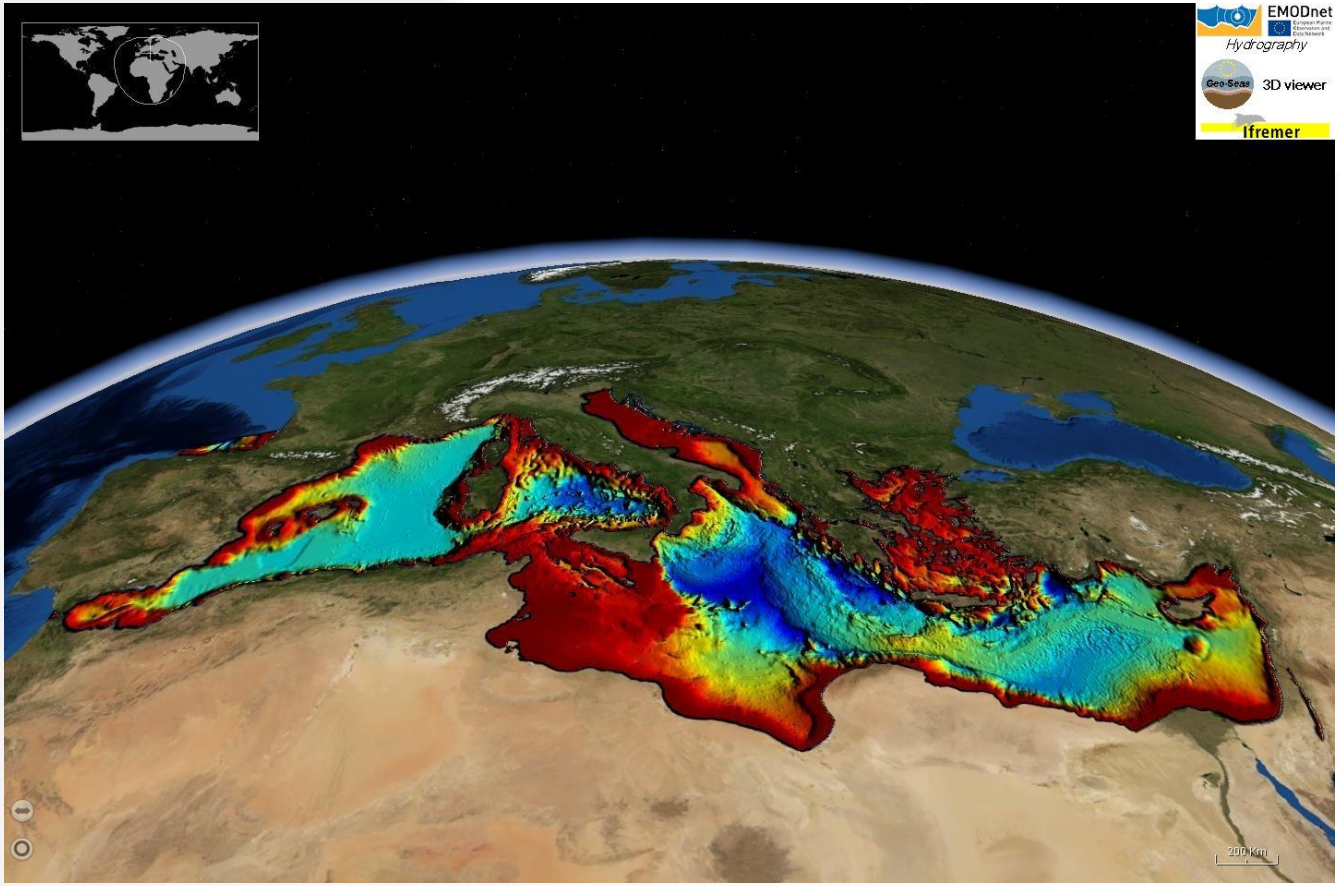
Viewing service with downloadable digital bathymetry (DTM – 450 m grid) and overlay of CDI survey data sets

EMODNet Bathymetry



Discovering and requesting access to bathymetric survey data sets (single and multibeam) (9100+)

EMODNet Bathymetry



3D software developed as part of Geo-Seas to visualise the EMODNet Digital Bathymetry

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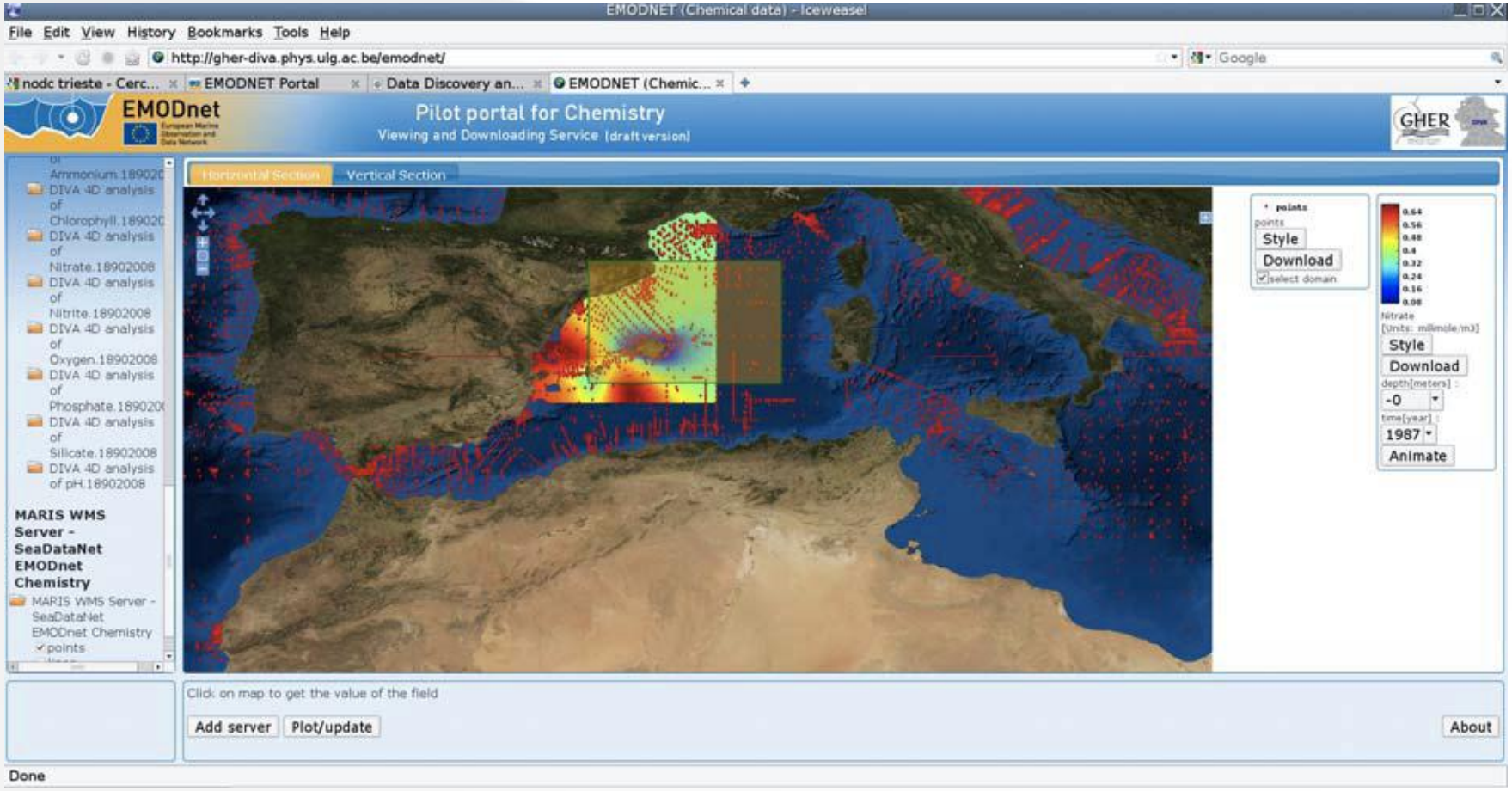
FOR OCEAN & MARINE DATA
MANAGEMENT

SeaDataNet

EMODnet
European Marine
Observation and
Data Network

EMODNet Chemistry



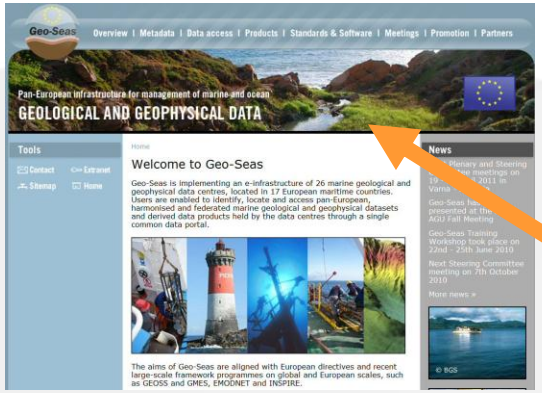
Viewing service for Nitrate distribution in the Balearic spot with overlay of CDI data sets

CDI Service as common service in many projects

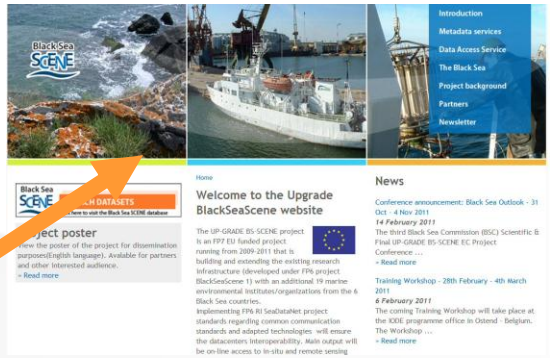
SeaDataNet

FOR OCEAN & MARINE DATA MANAGEMENT

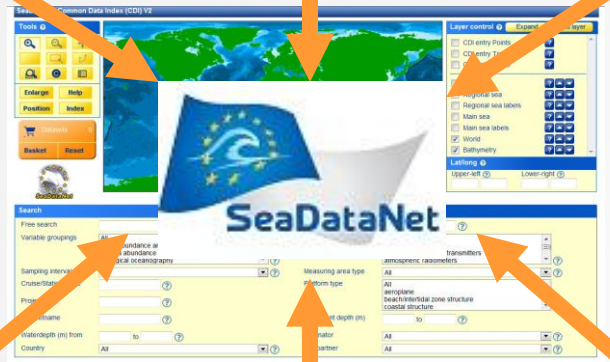
www.emodnet-chemistry.eu



www.geo-seas.eu

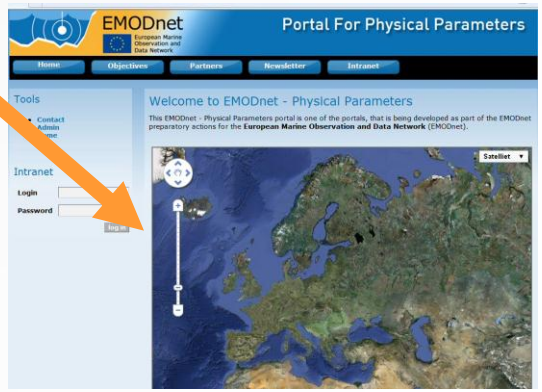


www.blackseascene.net

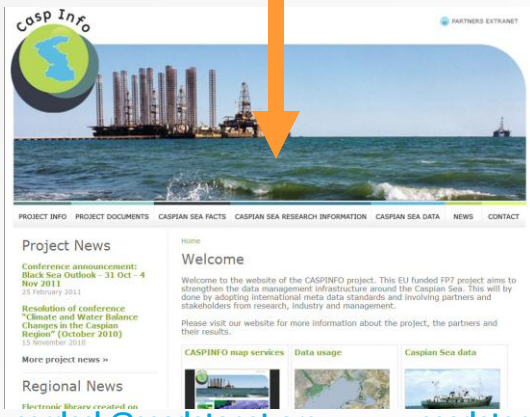


SeaDataNet CDI Service

www.emodnet-hydrography.eu

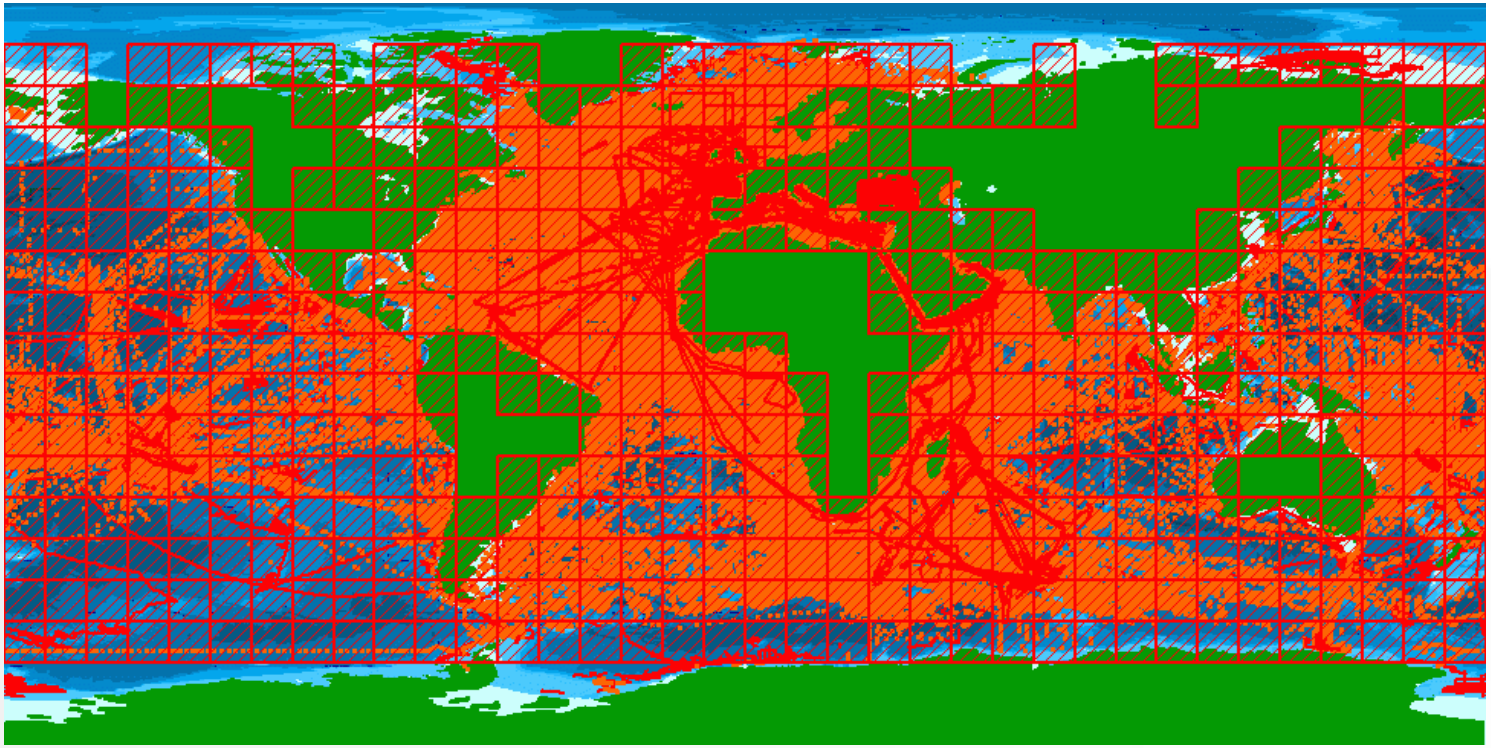


www.emodnet-physics.eu



www.caspinfo.net

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



> 1,5 million CDI entries from **34** countries and **89** data centres and **463** originators for physics, chemistry, geology, geophysics, bathymetry and biology; years **1800 – 2013**;

90% unrestricted or under SeaDataNet licence

SeaDataNet 2 - international

- Ocean Data Interoperability Platform (ODIP):
  - Europe (EU support)
  - USA (NSF support)
  - Australia (Gov support)
  - IOC-IODE (EU support)
  - Workshops for seeking common standards and interoperability solutions

- Ocean Data Portal (ODP) – UNESCO IOC-IODE:
  - Interoperability solutions for populating the Ocean Data Portal (ODP) in a structure way from the European marine data infrastructure

- Ocean Data Standards – UNESCO IOC-IODE:
  - Seeking global standards and promoting best practice